

SOCIO-ECONOMIC ANALYSIS
of
BLACKSMITHING IN SRI LANKA

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Our observation of blacksmiths in other areas of the country show that their income variation is wider than that of Parawahera. Some blacksmiths earn even less than Rs.5,000/= per month, while some, e.g. workshop owners in costal towns of Panadura, Moratuwa, Meegamuwa, earn as high as Rs.20,000/= or more. In these workshops production has diversified. They produce iron gates, grills, stools, racks, many other small metal products on demand as well as traditional blacksmithy items. In fact, blacksmithy has become a supporting service in these workshops.

Blacksmiths' perceptions of their job is very positive in Weboda and Kotmale where the industry is practiced mainly on commercial basis. But majority of blacksmiths in Parawahera have a negative perspective on the continuation of the industry. This is mainly due to lack of entrepreneur skills and lack of product diversification. At the same time the use of arduous traditional technology also discourage the younger generation from training in the industry. Even though a majority of blacksmiths in the country still use traditional technology, some blacksmiths in Weboda and Kotmale have attempted to use modern equipment to reduce the work burden. However, but due to lack of know how and lack of access to electricity). Parawahera blacksmiths have not attempted to change production processes.

Chapter 05

Conclusion and Recommendations:

The study revealed that blacksmithy had been completely isolated from national development programmes despite its potential for development. Hence, blacksmithing has become neglected in the rural industrialization process in the country.

Promotion of blacksmithing would benefit the national economy both directly and indirectly. Thus, any promotional programme would directly help to upgrade the standard of living conditions of blacksmiths while the supply of agricultural and domestic tools would indirectly benefit the nation.

Considering all the facts discussed in the text, three factors identified as the major issues in blacksmithy industry in Parawahera. These issues are related with technical institutional and social barriers.

Technical barriers are associated with production efficiency, quality and the durability of products. Still many of the blacksmiths use traditional technology which (results in very burden-some work).for them. The production is confined to 3 - 4 days a week and consequently production efficiency and productivity are very low. Existing technology is restricted in two ways: As a labour intensive industry, it is not economically viable in a small-scale. Likewise, due to low productivity and profitability, younger blacksmiths are moving away from the Industry. Hence, technological innovations are necessary to promote the industry.

If people in Parawahera, especially the young people, gain access to modern educational, social and other facilities, they may be more willing to continue in their blacksmithy work. However, in the present context, when youths have no hope of advancement, they prefer to leave the village and even to change their job.

Institutional barriers are related to lack of proper delivery and receiving mechanisms to distribute necessary support services. Shortages of raw materials, exorbitant prices, lack of skilled labour, and lack of finance were reported as major deficiencies in respect the of use of production inputs. Rigid banking procedures and lack of know-how were reported as bottlenecks in accessing formal credit sources. It was observed that lack of entrepreneurial skills and low organisational capacity of the blacksmiths were also responsible for an ineffective receiving system. As a result of these barriers blacksmiths are faced with greater difficulty in obtaining credit and raw materials. Hence, it is necessary to strengthen delivery and receiving mechanisms in order to bring better support services to the blacksmiths.

People in Parawahera are in need of organising a co-operative or similar association which could help them in finding raw materials, selling products, seeking loans etc. The Light Engineering Co-operative in 1970s met their needs for blacksmithy and they are looking forward to having a similar organisation, but they are unable to bring it into being. Blacksmiths of low income are of powerless want to organise into a co-operatives but without help of blacksmiths of higher income and powerful. The latter group of people are interested in individual entrepreneurship development. Sometimes these both groups distrust each other. Therefore the strong political industrial social leadership is urged to organise a similar co-operatives.

Social barriers are associated with issues emerging from technical and institutional barriers. As a result of burdensome technology and institutional difficulties, there are some restrictions to increase production efficiency and capacity. Therefore social recognition of the industry is declining and the younger generation is moving away from blacksmithing in to other allied fields which are socially accepted. This is a crucial factor for survival of the industry. This is not a purely social problem, it is also related to the economics of blacksmithing. Since technical and institutional issues are inter-related with social problems, it is necessary to pay more attention to technical and institutional issues, especially, they casing of heavy physical work.

Some of these issues could be overcome by introducing new or appropriate technologies. The Blacksmith who is using the IDB Power Hammer at Belihuloya has proved how he tackle some of these issues as a poor Blacksmith. He strongly feels that the Power Hammer has enoumerously helped him to change his livelihood, both in terms of economically as well as socially. Thus, change of technology would help to upgrade both economic and social aspirations of blacksmiths.

In the present context, blacksmiths are able to compete with imported blacksmithy items, produce more goods of higher quality and develop their venture if they have formal education, technical knowledge and training in blacksmithy. Therefore education and training will be a major factor in blacksmithy as well as in other industries.

One of the factors that affect blacksmithing in Sri Lanka is the caste structure. Blacksmiths may derive high income and may find markets for their products but their social rank remains low. The caste problem in Sri Lanka, as in India is very complicated and very difficult to overcome. It has evolved thousands of years, undergoing only minor changes. Therefore the Government and people have to persue very strong social economic and even political measures to remove such prejudices.

The information on cost and returns reveals that blacksmithing is not profitable when over-head charges, family labour, costs and depreciation costs are included. The profit margins are very low and the industry is running at little more than break-even point or subsistence level. However these factors do not affect the survival of the industry because blacksmithing is being practiced as homebased self-employment.

The production cost could be reduced by making available raw materials, controlling prices of production inputs and introducing low labour intensive techniques. At the same time it is necessary to take in to consideration that the role of rural blacksmith in the context of national industrial policy level.

The average monthly income data also shows that level of income of blacksmiths is somewhat higher than other workers in the rural sector like agricultural labourers, some farmers, tenants etc. But from the commercial and economic points of view, the average income of Rs. 3047/= is not attractive enough for further investments. Therefore it is necessary to increase the economic efficiency of the industry. That would help to retain younger blacksmiths in the industry.

Even though blacksmithing is a market-oriented industry it is not a commercially organised industry. Due to lack of competitiveness and lack of entrepreneurship skills, the majority of blacksmiths practise this industry on a self-employment basis just for survival. Hardly any blacksmiths in Parawahera have developed entrepreneurship skills with a view to upgrading their industries to put them on a more commercial and sustainable footing. Therefore, it is necessary to educate blacksmiths towards commercial and sustainable development.

It is an accepted fact that traditionally-oriented master-blacksmiths produce very beautiful, strong and artistically valuable items. The Blacksmiths of today, however, even with a formal education and modern facilities produce items of lesser quality and of less artistic value. In the process of commercialization, people seek to produce a greater quantity of products rather than goods of high quality. This is associated with economics of blacksmithing. Therefore, it is necessary to consider the way of increasing the quantity and the quality of products.

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(පරවාහන)
1991 වර්ෂ

ගනුදෙනුකරුගේ නම:

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1. පවුලේ සාමාන්‍ය තොරතුරු (ගෘහමුලිකයා ඇතුළු පවුලේ සාමාජික සාමාජිකාවන්ගේ තොරතුරු ඇතුළත් කරන්න)

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1	2	3	4	5	6	7	8	9	10	

2. කේතය

- ගෘහමුලිකයා 1
- බිරිඳ/ස්වාමිපුරුෂයා 2
- දුව/පුතා 3
- දෙමපිරිසන් 4
- අනෙක් තැනැත්තන් 5
- කේටිසික 6
- වෙනත් 7
- වෙනත් 8

3. කේතය

- පුරුෂ 1
- ස්ත්‍රී 2

5. කේතය

- අවිවාහක 1
- විවාහක 2
- වැන්දඹු 3
- වෙන්වූ/දික්කසාද 4

6. කේතය

- පහළ කොමිය 1
- 1-5 දක්වා (ශ්‍රේණිය) 2
- 6-10 ශ්‍රේණිය දක්වා 3
- සා.පෙ. සමත් 4
- උ.පෙ. සමත් 5
- උපාධි අපේක්ෂා 6
- උපාධිධාරී 7

- 02. සබ කපිමල් වන්තිය ඉගෙනගත්තේ කෙසේද?
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කවදාද?
- 03. මෙම රැකියාවට කැමිණිද?
- 04. කැමිණි නම් ඒ ඇයි?
- 05. අකමැති නම් එයට හේතු මොනවාද?
- 06. සිබේ රැකියාවට අපල්වැසියන් කවර පැලතිල්ලක් දක්වයිද?
- 07. කපිමල් රැකියාවෙන් බැහැරව මෙතන් රැකියාවක් තෝරාගැනීමට කැමිණිද?
- 08. කැමිණි නම් ඒ ඇයි?
- 09. අකමැති නම් ඒ ඇයි?
- 10. කපිමල් රැකියාවෙන් ලැබෙන ආදායම ප්‍රමාණවත්ද?
- 11. සිබේ දැරුවන් කපිමල් රැකියාවේ තිරන වනවාට සබ කැමිණිද?
- 12. අකමැති නම් එයට හේතු මොනවාද?
- 13. කපිමල් රැකියාව කරගෙන යාමේදී සබට මුහුණදීමට සිදුවන දුෂ්කරතා මොනවාද?
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2. විෂයාදාන ක්‍රියාවලිය.

1. අමුද්‍රව්‍ය ලබාගන්නා ආකාරය.

අමුද්‍රව්‍යයේ වර්ගය ¹	විලදී ගන්නේ කාගෙන්ද? ²	විල ³

1 වර්ගය

1. යකඩ
2. ආරු
3. ලී
4. වානේ

2 වර්ගය

1. ගවේ වෙළෙඳා
2. පිටතින් පැමිණෙන වෙළෙඳා
3. නගරයේ වෙළෙඳා
4. කොළඹ වෙළෙඳා

2. ශ්‍රම භාවිතය.

ශ්‍රමයේ ප්‍රභවය ⁴			කළ කාර්යය ⁵	දිනකට ශ්‍රම වියදම ⁶	
පිරිමි	ගැහැණු	ළමා		කළ ඇතිව	කළ නැතිව

4 වර්ගය

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| 1. පවුලේ ශ්‍රමය | 3. තොන්කුන් ශ්‍රමය |
| 2. ඉලි ශ්‍රමය | 4. හුවමාරු ශ්‍රමය. |

3. අමුද්‍රව්‍ය ලබාගැනීම හා භාවිතය සම්බන්ධයෙන් ඔබට තිබෙන ගැටළු මොනවාද?.

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4. ඉපිට ලබා ගැනීම හා භාවිතය පිළිබඳව පවත්වා ගැනීමේ වැදගත්කම කුමක් වේ?

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5. කළමනාකරණ කටයුතු සඳහා යොදා ගන්නා උපකරණ පිළිබඳ විස්තර.

කළමනාකරණයේ 7 කම	එහි තත්වය 8	පිලියව ගත් 9 පිල	වර්තමාන 10 පිල

8. තේරුම

1. ඉතා හොඳයි
2. හොඳයි
3. සාමාන්‍යයි
4. නරකයි.

6. කළමනාකරණ ක්‍රමවේදය පිළිබඳව පවතින ප්‍රධාන ප්‍රශ්නවලට පිටුපස ප්‍රකාශන ලබා දී ඇත?

ඔව් නැත

ඔව් නම්,

ප්‍රධාන ප්‍රශ්න 11 අංකනය	ප්‍රධාන ප්‍රශ්න 12 තලපිටුව	ලබාගත් 13 සහතිකය	මේතත් 14

7. කළමනාකරණ වැඩ පිළිබඳව පවතින ප්‍රධාන ප්‍රශ්නවලට පිටුපස ප්‍රකාශන ලබා දී ඇත?

1.
2.
3.

8. දෛනික නිෂ්පාදන වියදම් හා ආදායම.

ආයුධ වර්ගය	දිනකට නිපදවන ප්‍රමාණය	ඒකකයක නිෂ්පාදන වියදම					ඒකකයක විකුණුම් මිල	ලාභය
		ද්‍රව්‍යය				ඉවය		
		යකඩ	අඹුරු	ලී	වැණ			

8.1 සබඟේ නිෂ්පාදන අලෙවි කණ්ණේ කාවද?

- 1. තඟරයේ වෙළෙඳුන්දා
- 2. පිටසිත් ගමට පැමිණෙන වෙළෙඳුන්දා
- 3. සලුපතාර සමිති
- 4. ගමේ වෙළු ලන්දා
- 5. වෙනත්

8.2 සබඟේ නිෂ්පාදනවලට ලැබෙන මිල පවත සතුටුවන්නේද?

සවි නැත

"නැත" නම් ඊට හේතු දක්වන්න.

- 1. නිෂ්පාදන වියදම්වලට සාපේක්ෂව මිල ඉහළ නොයෑම
- 2. මිල ඉහළ නැතිමට හැකියාවක් නැතිවීම.
- 3. අනෙකුත් පාරිභෝගික ගණ්ඩවලට සාපේක්ෂව මිල ඉහළ නොයෑම.

8.3 සබඟේ නිෂ්පාදන විකිණීමේ පදනම ප්‍රශ්නයක් තිබේද?

සවි නැත

'සවි' නම්, එම ප්‍රශ්න පදනමක් දක්වන්න.

- 1.
- 2.
- 3.
- 4.

9. සිබ් කපිලේ කටයුතු සඳහා මුදල් යොදවන්නේ කෙසේ ද?

1. තම පොද්ගලික මුදල් යෙදවීමෙන්
2. බැංකුවෙන් ණයට ගැනීමෙන්
3. පුද්ගලික අංශයෙන් ණයට ගැනීමෙන්
4. වෙනත්.

9.1 සිබ් ණයට ලබා ගන්නේ කවි ඊ පිළිබඳ විස්තර.

ණය ලබාගත් අයතනය	ලබාගත් ණය මුදල	පොද්ගල	පදනම්ව	නැවත ගෙවීම

10. සිබ් මෙහෙත් රාජ්‍ය බැංකු වලින් ණය ලබා ගෙනගන්නේ කවි ඊට හේතු මොනවා ද?

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10.1 සිබ් සිබ්ගේ කපිලේ කටයුතු වලට අවශ්‍ය උපදෙස්/ආකෘතික පේට්ටා ලබා ගන්නේ ද?

ඔව් නැත

'ඔව්' කවි, ලබා ගන්නා කිලෝමීටර් හා අයතනය සඳහන් කරන්න.

10.2 සිබ්ට අවශ්‍ය තනතුරු හා පේට්ටා උපදෙස් ලබා ගැනීම සම්බන්ධයෙන් පවත්නා ගැටළු මොනවා ද?

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Table 2. *Caste composition of the Sinhalese population in the Maritime Provinces in 1814*

Numerical Distribution									
Caste name as in census	Clarification	1a	1b	1	2	3a	3b	3	4
		Colombo	Caltura	COLOMBO	GALLE	Matura	Hambantota	TANGALLE	without Chilaw
1 Velalles	Goyigama	68,837	22,292	91,129	25,330	32,313	524	32,837	149,296
2 Fishers	Karāva	15,649	9,107	24,756	11,328	5,245	200	5,445	41,529
3 Chalias	Salāgama	2,492	5,639	8,131	11,737	1,235	—	1,235	21,103
4 Chandoes	Durāva	6,231	1,476	7,707	2,434	4,973	69	5,042	15,183
5 Smiths ^a	Navandanna	3,230	1,804	6,034	1,609	1,702	—	1,702	8,345
6 Washers	Rajaka	4,269	1,204	5,473	1,441	2,186	530	2,716	9,630
7 Jagereroos ^b	Wahumpura	4,408	1,666	6,074	1,647	1,564	—	1,564	9,285
8 Paduas ^c	Batgama	4,176	22	4,198	27	3	—	3	4,228
9 Tom-tom beaters ^d	Beravā	941	877	1,818	490	1,751	—	1,751	4,059
10 Potters	Badahāla	1,207	—	1,207	354	551	—	551	2,112
11 Hinaves	Hinnā	88	1,462	1,550	153	1,516	—	1,516	3,219
12 Chunam Burners	Hunu	1,191	413	1,604	468	434	—	434	2,506
13 Barbers	Ambāttayō	349	78	427	146	118	—	118	691
14 Olias	Oli	—	247	247	360	534	—	534	1,141
15 Others		76	333	409	909	81	—	81	1,399
TOTAL		113,144	46,620	159,764	58,433	54,206	1,323	55,529	273,726

Table 2. Caste composition of the Sinhalese population in the Maritime Provinces in 1814

		Percentages							
Caste name as in census	Clarification	1a	1b	1	2	3a	3b	3	4
		Colombo	Caltura	COLOMBO	GALLE	Matura	Hambantota	TANGALLE	TOTAL without Chilaw
1	Velalles	60.8	47.8	57.0	43.3	59.6	39.6	59.1	54.5
2	Fishers	13.8	19.5	15.4	19.3	9.6	15.1	9.8	15.2
3	Chalias	2.2	12.1	5.0	20.0	2.2	—	2.2	7.7
4	Chandoes	5.5	3.2	4.8	4.1	9.1	5.2	9.0	5.5
5a	Gold & Silversmiths	2.4	3.4	2.7	2.6	3.1	—	3.0	2.8
5b	Blacksmiths	0.3	0.4	0.3	0.1	—	—	—	0.2
5	Smiths	2.8	3.8	3.1	2.7	3.1	—	3.0	3.0
6	Washers	3.7	2.5	3.4	2.4	4.0	40.0	4.8	3.5
7	Jagereroos	3.8	3.5	3.8	2.8	2.8	—	2.8	3.4
8	Paduas	3.6	*	2.6	*	*	—	*	1.5
9	Tom-tom beaters	0.8	1.8	1.1	0.8	3.2	—	3.1	1.5
10	Potters	1.0	—	0.7	0.6	1.0	—	0.9	0.8
11	Hinaves	*	3.1	0.9	0.2	2.7	—	2.7	1.2
12	Chunam Burners	1.0	0.8	1.0	0.8	0.8	—	0.7	0.9
13	Barbers	0.3	0.1	0.2	0.2	0.2	—	0.2	0.2
14	Olias	—	0.5	0.1	0.0	—	—	0.9	0.4
15	Others	*	0.8	0.2	1.5	0.1	—	0.1	0.5
TOTAL		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Return of the Population of the Maritime Districts, Colombo: Nicholas Bergmann, Government Press, 1816, which is available at the Department

Table 3. Caste composition of the Sinhalese population in the Maritime Provinces in 1824

Caste name as in census	Clarification	Numerical Distribution					Percentages					
		1	2	3	4	5	6	1	2	3	4	5
		COLOMBO	GALLE	TANGALLE	TOTAL without Chilaw	CHILAW	TOTAL with Chilaw	COLOMBO	GALLE	TANGALLE	TOTAL without Chilaw	CHIL.
Vellales	Goyigama	107,501	28,763	45,769	181,943	9,557	191,500	56.6	41.5	100.0	54.3	54
Fishers	Karava	29,285	13,629	7,451	50,365	4,928	55,293	15.4	19.7	9.7	15.0	27
Chalias	Salagama	10,655	13,095	2,348	26,098	203	26,301	5.6	18.9	3.0	7.7	1
Chandoes	Durava	9,056	2,533	7,280	18,869	786	19,655	4.7	3.6	9.5	5.6	4
Smiths	Navandanna	6,115	2,775	3,004	11,894	382	12,276	3.2	4.0	3.9	3.5	2
Washers	Rajaka	6,216	1,656	3,316	11,188	839	12,027	3.2	2.4	4.3	3.3	4
Jaggerairoos	Wahumpura	6,538	2,012	1,846	10,396	—	10,396	3.4	2.9	2.4	3.1	—
Patchies	Batgama	5,045	—	56	5,101	—	5,101	2.6	—	—	1.5	—
Tom-tom beaters	Berava	1,974	869	2,646	5,489	—	5,489	1.6	1.2	3.4	1.6	—
Potters	Badahala	1,897	458	696	3,051	211	3,262	0.9	0.6	0.9	0.9	1
Hinnawas	Hinnā	1,543	360	425	2,328	—	2,328	0.8	0.5	0.5	0.6	—
Chunam Burners	Hunu	2,107	827	473	3,407	—	3,407	1.1	1.1	0.6	1.0	—
Barbers	Ambattayō	587	155	263	1,005	252	1,257	0.3	0.2	0.3	0.3	1
Olias	Oli	415	608	639	1,662	—	1,662	0.2	0.8	0.8	0.4	—
Others		795	1,336	49	2,180	501	2,681	0.4	1.9	—	0.6	2
TOTAL		189,729	68,986	76,261	334,976	17,659	352,635	100.0	100.0	100.0	100.0	100

Table 4. *Regional distribution of each Sinhalese caste in the Maritime Provinces in 1824*
(figures are given in percentages)

Caste name as in census	Clarification	1 Colombo District	2 Galle District	3 Tangalle District	5 Chilaw District	6 Total
1 Vellals	Coyigama	56.1	15.0	23.9	5.0	100.0
2 Fishers	Karāva	53.0	24.6	13.5	8.9	100.0
3 Chalias	Salāgama	40.5	49.8	8.0	0.8	100.0
4 Chandoes	Durāva	46.0	12.9	37.0	4.0	100.0
5 Smiths	Navandanna	49.0	22.6	24.5	3.1	100.0
6 Washers	Rajaka	51.7	13.8	27.6	7.0	100.0
7 Jaggerairoos	Wahumpura	62.9	19.3	17.7	—	100.0
8 Patchiēs	Baigama	98.9	—	1.0	—	100.0
9 Tom-tom beaters	Beravā	36.0	15.8	48.2	—	100.0
10 Potters	Badahāla	62.2	14.0	11.1	6.5	100.0
11 Hinnawas	Hinnā	66.3	15.5	18.2	—	100.0
12 Chhunam burners	Hunu	61.8	24.3	13.9	—	100.0
13 Barbers	Ambāttayō	46.7	12.3	20.9	20.0	100.0
14 Olias	Oli	25.0	26.6	38.4	—	100.0

Source: *Return of the Population of the Island of Ceylon*, Colombo: Nicholas Bergmann, Government Press, 1827.

Colombo District: Extended to the Bentota river and included Kalutara District.

Tangalle District: Included the District of Matara.



VISVAKARMA
AND
HIS DESCENDANTS

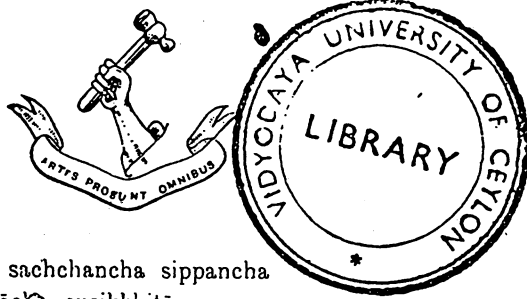
BY

ALFRED EDWARD ROBERTS

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Island of Ceylon,*

*Member of the Ceylon Branch of the Royal Asiatic Society,
&c., &c., &c.*



Bāhu sachchancha sippancha
Vinayō, susikkhitō,
Subhāsācha yāvācā
Ētam mangala muttaman.

Maha Mangala Sutta.

Colombo:

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1909.

Allison
Mathews.

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BLACKS

Chapter 01

INTRODUCTION

1.0 Background:

From times immemorial blacksmiths have played a prominent role in the economy providing essential manufacturing and repairing services to the nation's people. These services include manufacturing agricultural implements and domestic tools such as hoes, power tiller blades, matoties, forks, knives, coconut-scrapers etc. More than 70% of domestic equipment was supplied by blacksmiths and they made a substantial contribution to the supply of agricultural implements too.

Blacksmithy has concentrated into a specific caste and specific locations in the Country. Though the role of blacksmiths is very important in national economic activities, still it is isolated from national economic policies. The majority of blacksmiths use traditional technology which makes their job physically arduous. Consequently blacksmithy is not an attractive job in terms of both economic and social values.

Due to socio-economic factors such as low profitability social status and lack of support services, a large number of blacksmiths workshops had been closed during the past few years. Younger blacksmiths are moving away from blacksmithing to other jobs, such as motor mechanic, workshop technicians etc. About 30 percent of blacksmithy workshops have closed in major blacksmithing areas: Weboda (Gampaha), Kotmale (Nuwara Eliya), Beliatta (Hambantota) and Parawahera (Matara) during the past twelve years. Thus labour scarcity has become one of the critical problems in blacksmith villages. This is mainly due to ignorance of Blacksmiths and lack of facilities. Low social recognition, low productivity and non-profitability are the major issues. In 1989, the Industrial Development Board (IDB) introduced a Japanese model Power Hammer to solve these problems. But this technology has not reached to blacksmiths due to high cost and unaffordability.

On the other hand blacksmiths have been unable to meet continuous demand from rural and urban dwellers due to the technological and institutional difficulties associated with the Industry. These difficulties related with lack of necessary support services and existing conventional technology. This could be affected for the survival of blacksmiths. Hence, it is time to investigate the factors influencing blacksmith sector so as to improve the quality of the products as well as the living standards of the blacksmiths.

For the purpose of upgrading the standards of living conditions of blacksmiths and ensuring better services to rural and urban users, the ITDG (Sri Lanka) has initiated a technological development programme for introducing a new power hammer. Matara Integrated Rural Development Project (MIRDP) and the Industrial Development Board (IDB), collaborate in terms of financing and implementing the Programmes respectively.

This study was carried out with a view to finding out the socio-economic conditions of blacksmiths and the viability of new technology. This information would be helpful for further promotional activities in the blacksmith sector. The study was conducted as a base line survey under the sponsorship of the MIRDP.

1.2 Objectives of the Study:

1. To study the socio-economic characteristics of blacksmiths:
2. To investigate the production process and institutional setup of the blacksmithy sector.
3. To understand the constraints faced by blacksmiths and their perception of these constraints.
4. To make recommendations on issues identified by the survey in order to promote the blacksmithy industry.

1.3 Methodology:

- a. Questionnaire survey method and Rapid Rural Appraisal (RRA) methods were used in this study. Questionnaire survey technics were used to collect socio-economic information such as household data, production costs, returns, income and profitability while RRA technics were used in order to find out secondary information on blacksmithy industry.
- b. Since the study was concentrated to one village, the total number of blacksmiths in the Parawahera village have been selected as study sample. There are 39 blacksmithy units living in Parawahera and each blacksmithy units consist of two or three members.
- c. Use of secondary information, direct observation, meeting key informants were used as RRA techniques. This information was used to substantiate survey data.

1.4 **Scope of the Study:**

The focus of the study is directed mainly towards analysing the socio-economic characteristics of blacksmiths, social implications and production processes. The analysis highlights Parawahera blacksmith village in Matara district where power hammer machines are being tested as a pilot project. An attempt was also made to compare this information with other leading blacksmith villages, where the blacksmithy industry is highly concentrated in the country. Beliatta (Hambantota District), Weboda (Colombo District), Epalewa (Kegalle District) and Kotmale (Kandy District) were selected for the comparison.

1.5 **Limitation of the Study:**

Like many other social science studies, the present study faces certain limitations:

- a. Due to limited resources and time constraints, the information on production inputs were collected only from blacksmiths when representing supply side.
- b. It is difficult to avoid blacksmiths' biases on politeness and protocol.
- c. There is a greater possibility of making errors when calculating the man days put in by family labourers, because family labour utilization is not limited to 8 working hours.
- d. Depreciation costs and maintenance costs were not estimated due to lack of reliable information system.

1.6 **Chapter Organisation:**

The study consists of five chapters. Chapter one gives some background information and chapter two presents an overview of blacksmiths in Sri Lanka. The third chapter deals with socio-economic characteristics of blacksmiths in Parawahera including a comparison with other blacksmithy villages. Production processes are described in chapter four with special reference to input supply, technology, demand and production potentials while the last chapter deals with conclusions and recommendations.

CHAPTER 02

AN OVERVIEW OF BLACKSMITHY INDUSTRY

2.1 Historical Background:

Apart from giving a general understanding of the industry literary sources reveal that the blacksmithy was practised in Sri Lanka from ancient times. Blacksmithy was a craft and an occupation. The specific character of blacksmithy in Sri Lanka; as in India, is that it is practised as a caste occupation, i.e. particular people belong to the Blacksmithy caste (Acari, Kollar or Navandanna in Sri Lankan case). In the past craftsmanship of blacksmiths brought to them not only a reputation but also social prestige and somewhat magical importance.

One of the major features of Sri Lankan, especially Sinhalese, social organisation is its caste structure. The term " caste " is used here ethnographically denoting exclusively social organization peculiar to Hindu India(1*). It is commonly accepted that the caste organization of Sri Lanka has descended from the Hindu system. Blacksmiths, as other castes, adhere to caste norms of endogamy, hereditary occupation, caste segregation and relative caste status.

It is difficult to say exactly when blacksmithy and blacksmiths appeared in Sri Lanka. The Indo-Aryans and other ethnic groups who migrated to Sri Lanka in the millennium B.C. were familiar with the Hindu Varna organization, in which four Varnas (castes), namely Kssatriya (Kings) Brahmin (priests), Vaisya (merchants etc), Sudra (artisans and untouchables) were the major social strata(*2). Blacksmiths most probably found their place in Sudra category(*3). But the orthodox Varna tradition underwent a noticeable change here in Sri Lanka as a consequence of different geographical, economic and social conditions, the process of assimilation of migrants with native people, further socio-economic development and the division of labour. The conventional nature of caste structure lost its significance and the local system with different characteristics from the Indian Varna system emerged.

* 1. Leach E.R. (ed/Aspects of caste in South India and North West Pakistan. Cambridge. 1960 p.1.

* 2. Ellawala H Social History of Early Ceylon. Colombo. 1969 p.11

* 3. Bryce Ryan. Caste in Modern Ceylon, New Brunswick, New Jersey, 1953, p.6

Accordingly, society in Sri Lanka in the middle-ages divided into two groups. the Kulina (nobles) and Kulahina (Unnobles)(*4) Blacksmiths as a caste belonged to the "Kulahina" category.

The Sinhalese literary work "Janawamsa" (14th or 15th century) which contains the earliest comprehensive description of Sinhalese caste structure puts the Blacksmith caste (Achari) in third place in the caste hierarchy *5.

According to some literary sources blacksmiths representing a caste came to Sri Lanka in the 2nd century B.C. when the Buddhist sacred Bo tree brought here(*6).

Professor R. Pieris is of the opinion that the principal Navandanno families of up-country Sri Lanka were descended from Pandyan and other Indian craftsmen settled by the kings of the fifteenth and sixteenth centuries(*7).

Ananda Coomaraswamy in his Mediaeval Sinhalese Art divided the Navandanno caste into two groups :

1. Kamburuwo: Blacksmiths, goldsmiths, brass-smiths etc.
2. Waduwo: Carpenters, builders, architects etc.

The first group consisted of first class craftsmen from South India while the second group was native and was involved in simple craft works.

Robert Knox in his account of Ceylon society in 1681 described the blacksmith community revealing its relatively higher position together with goldsmiths, carpenters and painters in caste hierarchy, namely the second place after the Govi or Hondrews (cultivator) caste and were almost same as the inferior sort of the cultivators(*9).

Among the blacksmiths there were privileged ones who worked for Kings, for which they held King's lands (*10).

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4. Geiger W. Culture of Ceylon in Mediaeval Times. Wiesbaden. 1960 P.30
 5. Janawansaya (Sinhala(ed) B. Wijayasiri, Colombo.
 6. Sinhalese Maha Bodhiwansaya(Red) K. Pannatis. Colombo 1928 p - 253
 7. Pieris R. Sinhalese Social Organisation - The Kandyan Period, Colombo -1956 p - 181
 8. Coomaraswamy A.K. Mediaeval Sinhalese Art. Normal Chapel, 1909 p - 54
 - 9.10. Knox R-A Historical Relations of Ceylon, Dehiwala 1966 - p 127

Generally blacksmiths served the cultivators by mending and making tools for domestic and agricultural usage. Traditionally particular blacksmiths served particular customers and for the service they received fixed rate of corn in harvest. In case of extra works blacksmiths were given presents in the forms of rice, hens etc., (*11).

Blacksmiths were able to keep high position economically and socially because every blacksmiths had his own permanent customers. If he served a customer of another blacksmith then he had to pay compensation to that blacksmith (*12).

John Davy placed blacksmith third and observed that some ranked them as first among low castes (*13).

Blacksmiths as a craft-caste blossomed and reached their utmost reputation during the Kandyan period of Sri Lankan history. The caste regulations, determined in details and sanctioned by the ruling power had spread in the whole society. Members of all castes were compelled to carry out "Rajakariya" (work for the kings) and were organised king's service departments - "Badda", especially from castes of craftsmen (*14).

The Kottal Badda department was composed of various smiths of the Navandonno caste, namely gold and silver smiths, stone polishers, stone-cutters, painters, turners of ivory and horns, brass founders and carpenters (*15).

People belonging to the Kottal badda were obliged to supply the court and the feudal manors with domestic and agricultural tools, instruments and some caste founded services. Those not belonging to the Kottal badda blacksmiths were free to render services to the common folk on the basis of additional payments when they were free from Rajakariya duties (*16).

Kandyan feudalistic society provided good ground for proliferation of caste systems. "Ceylon had feudalism in every connotation of the term: unlike Europe. Ceylon also has caste! (*17). Feudalism based on land tenure and attached services were also dominant in Buddhist and Hindu temples.

11. Ibid, p -128

12. Ibid: p -128, 129

13. Davy John - an accountant of the interior of Ceylon and its Inhabitants with Travels in that Island London 1821 - p 124

14. Peris R. Sinhalese Social Organization. Colombo 1956 - p 181

15. Ibid; p -182

16. Pieris R. Sinhala Social Organization, Colombo 1956 p - 182

Coomaraswamy A.K. Mediaeval Sinhalese Art. Norman Chapel 1909
p - 55

17. Bryce. Ryan Caste in Modern Ceylon. New Brunswick 1953. p - 45

Bryce Ryon further noted that Copins the feudal structure of secular social organisation, both vihara (buddhist temples) and devale (temples of deity) derived their functionaries and economic strength from the performance of services allocated on the basis of caste (*18). Blacksmiths belonging to the Navandonno or Achar caste were one of major categories of people involved in feudalistic social structure.

Blacksmiths live in villages and towns all over the country. The Caste Census available for the years 1814 and 1824 reveals that numerically smiths occupied the fifth place in maritime provinces *19 (see annexures).

The downfall of the Kandyan Kingdom and various socio-economic and political measures taken by Western Regimes in Ceylon (Portuguese, Dutch and especially British) brought about the transformation of patriarcho-feudalistic structure in the country.

The influence extended by the western regimes resulted in many changes in the social, political and economic spheres. Michael Roberts emphasized that the period of colonial rule witnessed institutional amendments and economic developments which began to transform the political economy of the Island."(*20).

The caste system has changed significantly and the emergent ? pattern was one of class rather than of caste. Many castes struggled for caste and class superiority(*22).

Towards the present time blacksmiths have lost the important social and economic position which they enjoyed as members of blacksmith caste.

15. Ibid: p 182

16. Pieris R. Sinhala Social Organization, Colombo 1956 p.182
Coomaraswamy A.K. Mediaeval Sinhalese Art. Norman Chapel 1909
p.55

17. Bryce. Ryon
Caste in Modern Ceylon, New Brunswick 1953. p.45

18. Ibid, p 45

19. Roberts M. Caste conflict and Elite Formation
The Rise of a Karave Elite in Sri Lanka
1500 -1941 Colombo 1982.

20. Robertz M Caste conflict and Elite formation. The Rise of
Karava Elite in Sri Lanka 1500 - 1941 Colombo 1982 -
Introduction.

21. An attempt of (Visva Brahma) caste for
caste superiority, is revealed:
"one of the caste this reviled is Visva Brahma caste. No
class of people that inhabited this spicy Island of ours. is
more pacific. more contented and more loyal to the British
throne than the people of the caste".
Alfred Edward Robertz Ratna jinendra Rabel Ratnapala:
Visvakarma and His Descendants. Colombo 1909.

2.2 Present Situation:

The services of the blacksmiths are needed almost everywhere by all people. Although in the past, blacksmithy services were mainly directed towards farmers; today this has changed. Therefore blacksmiths find opportunities to earn their living by blacksmithy in practically every village or town.

Blacksmiths are scattered all over the Country. The dearth of statistics on blacksmiths, as is the case with other similar occupational groups, makes it difficult to have a clear picture of their spatial distribution. Nevertheless our observations on blacksmiths reveals that there are some villages in some district occupied only or mainly by blacksmiths. Some of these are: -

Parawahera	(Matara district)	Kendagolla	(Badulla)
Puwakdandawa	(Beliatta)	Koslanda	(Monaragala)
Apalawa	(Kegalle)	Pitigala	(Galle)
Hemmathogama	(Kegalle)	Sandalankawa	(Kurunegala)
(Samapura)		Belihuloya	(Ratnapura)
Kotmale	(Nuwara Eliya)	Weboda	(Gampaha)
Navongama	(Kandy)	Bandanagala	(Polonnaruwa)

In towns there may be more than one blacksmithy workshop which may be dependent on, or independent of each other. In the village, if it is not a blacksmithy village, there is usually one blacksmithy workshop. Sometimes clusters of villages have one workshop which may be situated at a place easily accessible to all villagers.

Generally, blacksmithy is not a highly profitable, prestigious or easy job, but even after hundreds or may be thousands of years it remains a viable occupation.

In the blacksmith workshops in Parawahera, as well as in other villages, manual labour is predominant. Even in the very few places where electricity, or other kinds of energy such as gas, is used for production purposes manual labour, mostly hired, is still a major component of production.

One blacksmith of Belihuloya, who has expanded his blacksmithing enterprise beyond the family limit, hires about 10 people for work using the Power-Hammer in production. His production is on a large scale and exceeds 15,000 knives per year, taking only that item as an example. His products are in demand all over the country, e.g. in tea estates, rubber estates and in industrial work sites, not to mention domestic demands.

In Weboda (Colombo). a number of workshops produce bolts, nails and other parts for the Electricity Board of Sri Lanka and make heavy use of electrical equipment, lathes and other machines. These workshops have actually become industrial plants rather than Blacksmithy workshops. In Weboda there are also some small workshops maintaining the traditional mode of production.

2.3 National Strategies:

Since 1948 (Independence) to 1970's, there were no special development strategies for blacksmithing in the country (*23). But Industrial Development policies adopted by the Governments came to power in 1956 & 1960 made little impact on promoting blacksmithing industry. Blacksmiths have had a prosperous time between 1974 and 1977 when the Sri Lanka Light Engineering Industrial Corporation Union functioned well. As the blacksmiths got necessary raw material (iron, charcoal etc) at very low cost, they easily sold their products at substantial profits. With the help of the union, blacksmithy was a highly profitable occupation.

Once introduction of liberalized Economic policies after 1977, incentive programmes implemented by the Industrial Development Board and the Light Engineering Industrial Corporation were changed in accordance with open-economic policies.

23. Hesselberg Jan. ARTISAN Production. the car study of Puwakdandawa. Hambantota district. Sri Lanka (1981)
p - 24-28.

Chapter 03

Socio-Economic Characteristics of Blacksmiths of Parawahera

3.1 Parawahera (West)

Parawahera (West) of Matara district is considered as an industrial community (village) of blacksmiths. Today about 39 blacksmith workshops (Kammal) are functioning, though the number was higher in the past. These 39 workshops include 10 workshops making instruments for goldsmithy.

Parawahera (West) is a part of the village called Aladeniya where 800 people live in about 160 households. About 100 households are engaged in blacksmithy, 7 in agriculture, 29 in trade, 11 in animal husbandry, 40 in dress making etc.

Villagers in Parawahera (West) live exclusively on blacksmithy and only a few of them, particularly some young people have left the village and work in motor garages as mechanical assistants or as similar workmen.

Blacksmiths in Parawahera produce specific items like knives, mammoties, axes, blades for coconut scraper's, aricnut etc., on demand. There is also division of labour amongst products, i.e. each household, or group of households produces a specific item leaving to others to production of other items. Repairing of old metal items of the villagers is rarely done today as it is not profitable compared to the production of new items on demand.

The production unit of blacksmiths in Parawahera is the family or household. It is still not properly developed the individual production units by unmarried family members. They work together under the guidance of the father or an elderly family member. The workforce may vary from 01 member to 10 - 15 persons. Usually close relatives get together in the production process. This pattern is common in the blacksmiths villages mentioned at the beginning of this chapter.

The Production pattern of an individual blacksmith in other areas differ considerably as they usually produce themselves supported by a young child (son or neighbour) who blows the bellows.

Blacksmiths in Parawahera are exclusively involved in their craft unlike blacksmiths in Samapura (Hemmategama) who partly engage in agriculture or other business. Some blacksmiths in Samapura run the workshop with hired workers while they themselves engage in agriculture.

Young Blacksmiths today, not only in Parawahera but also especially in Town areas, tend to seek work in motor garages or welding plants. The open economic policy adopted by the Government after 1977 have paved the way for the import of large numbers of vehicles which have provided work for motor mechanics. Young Blacksmiths find it more profitable and more prestigious to work in such repair workshops.

3.2 Land Distribution

Almost all households in Parawahera possess plots of land where they have built their houses and workshops. In Sri Lanka land serves as one of the basic needs of the people, especially for a family. People in Sri Lanka irrespective of their caste engage in agriculture wherever land and other facilities are available. The Blacksmiths, all over the country engage in agricultural activities where facilities are available. But the situation is quite different in Parawahera, because they do not possess enough land for cultivation of any kind. Some families that possess lands are not in the position of cultivating or using them for any other business due to lack of capital, water, labour knowledge or other means. There are also 2 - 3 families living and working on land belong to others as they hold no lands for themselves. This landlessness prohibits the expansion of Parawahera village, forcing newly married couples and young people to seek residence and work beyond Parawahera.

Parawahera represents a typical Sinhalese village where people vary significantly from the point of view of economic position. Most of the villagers own plots of land by inheritance or acquisition. Rich people usually own a larger extent of land than do the poor people. Some households possess about 3 acres while many have about 1/4 acres of land or less.

3.3 Settlements

Housing in Parawahera is highly variable. Some houses are little more than simple huts while some are very rich houses with most modern amenities: electrical items like T.V., Radio, Refrigerators, rice-cooker, comfortable furniture etc. We have observed one household possessing even a motor car. Their workshops of such households are also richer than those of others. They have more equipment and tools, sometimes including electrical and other mechanical equipment, whereas the poor people's workshops have only traditional tools.

Workshops or Kammal also are usually situated in the yard of the house. Some rich families have a main workshop and some minor workshops for supporting services. Some poor families run their workshop in part of their living quarters house because they do not have enough land or other facilities to put up separate workshops.

The workshops are usually without front and sidewalls. A backwall with small side walls serve as a room for bellows or store rooms. Some instruments and tools are also kept in store rooms while usually anvils, hammers and some other tools are kept in the open space of the workshops. There are benches and logs, sometimes chairs for the blacksmiths, clients or neighbours to sit on. Roofs are thatched with straw, or covered with tile or sheets, according to economic status of the household.

3.4 Composition of the Workforce

In Parawahera as in many blacksmith villages, all members of the family (except small children and very old people) are involved in the work process). Table 3.1 shows the distribution of the population according to sex and age. This data almost similar to national average population distribution in Matara district.

Table 3.1 Distribution of Population in Parawahera by age and sex

Age (years)	Male	%	Female	Percentage %	Total
- 14 <	34	28	33	29.2	67
15 - 29	43	35.6	42	37.2	85
30 - 44	18	14.9	17	15.0	35
45 - 64	20	16.5	20	17.7	40
65 >	6	4.9	01	0.9	7
Total	121	100.0	113	100.0	234

Source: sample survey (1991)

In a blacksmith's workshop, there is enough work for everybody in the family. Younger adult, men are usually involved in heavy arduous work such as beating the hot iron, filing, loading and unloading materials etc.. older, experienced men do finishing or precision parts of the work, or advise and supervise.

Table 3.2 Labour Force classified by age:

Age (years)	No	%
14 - 65	43	96
above 65	2	4
Total	45	100

The table 3.2 shows labour force distribution in Parawahera. But it does not show involvement of child labour and the family labour used in the industry. Children may help by blowing the bellows, supporting and doing manual work in the worksop. Elderly women may help in supplying food or doing supporting work. Although women are rarely involved in practical work in the workshops, in Parawahera some young women even do heavy work relating to blacksmithy.

3.5 Education and Training:

Formal training in blacksmithy, or formal education in general have not been an important factor in the blacksmithy industry. If we look at the general education pattern, adult blacksmiths have not normally completed their primary education. Most of them have passed only the fifth or lower grade in the school. Some blacksmiths have never attended school. The younger generation has advanced further than the older generation in education, some of them even having completed the G.C.E. Advanced Level examination. However we could not find a single person engaged in blacksmithy who has completed a degree or diploma or is doing undergraduate studies. Many people with advanced level education, or even lower than that, usually prefer to find more profitable and prestigious work than blacksmithing.

Table 3.3 Education level of blacksmiths in Parawahera

Level	No	Percentage
Not attended school	1	2.2
1 - 5 grade	32	71.2
6 - 10	9	20.00
G.C.E. O/L	3	6.6

Source: Sample Survey (1991)

Lack of formal education and training does not mean that blacksmithy is an easy or simple job. To be a competent blacksmith is very difficult, because it needs considerable experience and long-service in the craft training. Without learning the art at a master-craftsman nobody could be competent. In the past blacksmithy was a closed profession stictly transfered by caste line.

Fathers who now teach the craft to their sons previously worked with their own fathers for a long time, usually from childhood. Fathers are somtimes reluctant to teach the art to outsiders or even to undisciplined sons. Thus over hundreds and even thousands of years blacksmithy was transfered from generation to generation.

The situation has changed today. Although most people acquire the knowledge and skill of blacksmithy through the older generation, there are possibilities to learn it from outsiders, working as hired workers, or by helping in relatives' workshops. There are even some possibilities to learn some processes of blacksmithy in Technical College, or in some Technical workshops.

In Parawahera 39 blacksmiths revealed how they learnt blacksmithy. These were 23 (58.9) from the older generation, 9 (23.1) from relatives and 7 (18.0) from working as hired workers in outside workshops.

3.6 Some Socio-Economic Problems Involved:

Traditionally minded blacksmiths, even today, believe that blacksmithy and blacksmiths (Achari) are of Devine origin descendents from the world Creator - Viswakarme - Brahma).

The traditional, ideological backgrounds of blacksmiths retard development of the industry in terms of modernization or commercialization. In rural areas where traditional ideology is more prevalent, the process of modernization and commercialization is slower than in urban areas or in blacksmithy villages like Parawahera, Puwakdandawa where modernization and commercialization are artificially introduced.

In Parawahera blacksmith production is less market-oriented. "The more production, the better". In this context the quality and artistic value of the products are adversely affected. The customers are also interested not in quality but in quantity with lower prices. If blacksmiths do not meet the demand of the customers then the latter may easily find needed items in the market where imported, low-priced products are available.

Generally blacksmiths suffer from landlessness all over the country. The exception is that some people shifted from Kotmale where the Mahaweli Development Project was implemented. Then blacksmiths were provided with enough lands in the areas where they resided.

Landlessness is also connected to other problems like that of finding charcoal for workshops. In some areas like Belihuloya natural forest provides wood for charcoal, but in most of the other areas, due to deforestation and cultivation activities, finding wood for charcoal has become a difficult job for blacksmiths.

One of the factors that affect the blacksmithy industry in Sri Lanka is the caste structure. Blacksmiths may derive high income, and may find a market for their products but socially they are regarded as inferior. The relatively low social position of the blacksmith caste retards their advancement in the social ladder. Blacksmiths, unlike some other caste groups, cannot hide their occupation.

Because people involved in blacksmithy and other related work are belonging only to (Navandanna) caste. Therefore blacksmiths find it extremely difficult to get married or to involve in other family activities without caste prejudices. Some young men in Parawahera revealed that they find it difficult to find brides even amongst the blacksmith community which is traditionally where they seek their brides. Table 3.4 shows why blacksmiths are engaged in blacksmithing.

Table 3.4 Reasons given as to why they like blacksmithy were:

Reason	No	%
Capable is only in blacksmithy	26	78.7
Unavailability of other jobs	4	12.1
Workshops are in the home or village	1	3.0
Income is enough	1	3.0
No time for other jobs	3	9.1

The difficulties involved in blacksmithy as expressed by blacksmiths themselves are as follows:

- (a) Blacksmithy is very arduous
- (b) Blacksmith is socially inferior
- (c) Income is not commensurate with labour input
- (d) Finding raw materials is difficult
- (e) Facilities are not adequate

It is commonly accepted that work in the blacksmith workshop is very difficult and tiring. Beating the iron with large hammers, working near the fire-place and similar activities demand heavy physical work. The heavy work involved is one of the reasons for physical ill-health. There are also some people who suffer from minor accidents. In some blacksmith families deafness seems to be hereditary. most problems, due to noises of the workplace.

Blacksmiths work 4 days per week, with a day-off between heavy working days. The non-working time is not spent very usefully: many of them involve themselves in drinking alcohol or in non-productive work.

By introducing mechanical, electrical and other equipment into blacksmithing workshops the heavy physical nature of the work of the blacksmith could easily be alleviated.

People in Parawahera live as a community without having many relationships with outside people. This is partly due to the blacksmiths perception of the attitudes of others towards them. However, according to table 3.5 the self-perception of blacksmiths is more favourable towards the profession.

Table 3.5 Blacksmiths Perception on Blacksmithing

Perception	No	Percentage %
The majority of the villagers are involved in blacksmithy, therefore, there is no negative attitude among them	8	21.6
Earlier this profession was of low regard but now the attitude has changed in a positive direction	18	48.6
People in Parawahera belong to one and the same caste. therefore no problems	4	10.8
Young people do not like blacksmithy	3	8.1
People of other castes regard blacksmithy as inferior	2	5.4
People of other castes do not like to have relationships with blacksmiths in Parawahera	2	5.4

Only 7 people out of 39 interviewed expressed their willingness to find other jobs due to low recognition of their job by neighbours. But in some other areas such as in Belihul Oya, the Blacksmith community has been isolated due to caste prejudices.

Chapter 04

Production Process

The analysis of the Production Process is divided into six sections. The first part describes raw material supply and labour usage in the industry. The second section reviews production technology used in the industry. Provision of support services is discussed in the third section while production costs and returns are presented in the fourth section. The fifth section deals with level of income of blacksmiths and the sixth explains production process in selected blacksmithy villages.

4. Production Inputs

Production inputs of blacksmithing could be categorised into two: fixed assets and variable inputs. All fixed assets like Workshop building, Wedge Hammer, Bellow, Anvil, Leg vice, grinder and other necessary tools were considered as fixed assets while raw materials such as steel, coconut charcoal, wood and file were considered as variable inputs.

Due to lack of unique data base for fixed assets, the cost benefit analysis of blacksmithing was based mainly on variable production costs. However, rough estimate of present market value of fixed assets are presented in the study in order to find initial production cost of a blacksmithy workshop (Table 4.9).

4.1.1. Raw Materials:

High Carbon steel, mild steel, leaf springs, copper and aluminium are used as raw materials. Scarcity of raw materials, absence of price control on tools and raw materials, and lack of receiving mechanisms were having a great impact on changing prices of raw materials (Table 4.1).

TABLE 4.1 PRICES OF RAW MATERIALS

Material	Unit	Average Price	Price Range
Steel *	1 kg	8.75	5.00 - 10.00
Coconut shells	1000	249.50	200.00 - 300.00
Coconut (Charcoal)	1 kg	3.80	3.00 - 5.00
Wood	---	58.25	25.00 - 75.00
Wood	1 bundle	172.00	100.00 - 325.00
Copper	1 kg	54.00	40.00 - 60.00
File	1	53.00	48.00 - 65.00

Source: Sample Survey (1991)

(* steel prices could be changed in accordance with type of steels)

A majority of blacksmiths in Parawahera use coconut charcoal as the main source of energy and very few who have welding plants use electricity. The price of coconut charcoal has increased twofold during the last two years.

Except for coconut charcoal and wood, procurement of raw materials is done at the nearest market in Matara Town. Coconut shells, charcoal and wood are supplied village traders and outside village traders. As small entrepreneurs almost all the blacksmiths purchase materials at retail prices and therefore, their ability on reacting price changes is very low. Likewise there is no organisational mechanism (blacksmith society, unions) to bargain with traders and government.

Table 4.2 presents some of the difficulties in obtaining raw materials. More than 50 percent of blacksmiths reported shortage of raw materials as the main difficulty. About 39% mentioned exorbitant prices as a difficulty while 33% stated lack of finance. About 10% of blacksmiths said that hardly any of difficulty was faced in obtaining raw materials. All these difficulties are related to lack of proper delivery and receiving systems.

TABLE 4.2 DIFFICULTIES IN OBTAINING RAW MATERIALS:

Difficulty	No of blacksmiths	%
Shortage of materials	22	56
Exorbitant prices	15	39
Lack of money	13	33
Others	04	10
No difficulties	04	10

* each respondent is free to mention more than one reason.

Source: Sample Survey (1991)

4.2.2. Labour:

Blacksmithing is one of the highly labour intensive industries. Quality and quantity of products are determined mainly by degree of stall and experience. Since the industry is concentrated in a specific caste, the use of family labour is very high. However use of hired labour has increased due to:

- a. As a consequence of financial constraints to start individual family workshops, many blacksmiths work as hired labourers.
- b. Since young blacksmiths move away from the industry, the demand for the hired labour is increasing.

Table 4.3 Daily Labour requirements according to the types and quantity of Products

Items	Man days		Total
	family labour	hired labour	
Manna Knife (small)	01	00.5	01.5
Manna knife (Big)	01	01	02
Table knife (1)	01	01	02
Tea pruning knife	01	01	02
Sickel	01	01	02
Small knife	01.5	-	01.5
Wheel knife	01	01	02
Iluk ketta	01	01	02
Cinnoman knife	01.5	01	02.5
Axe	01	01	02
Jack knife	01	01	02
Ketta	01	01	02
Ameri knife	01.5	01.5	03
Coconut scrapper	01	01	02
Chisel	01	-	01
Gira	01.5	00.5	02.0
Masonry Spade	01	01	02
Horse shoe	--	00.75	00.75
Table knife (2)	01	01	02

Source: Sample Survey (1991)

Labour requirements according to various products are given in Table 4.3. Number of products per day and how they have hired labour utilization change in accordance with type and number of products are clearly shown in the table 4.3. This indicates that at least two workers are necessary to run a workshop. The production is completely based on division of labour.

Wage rates vary according to the experience and activities performed by labourers. For instance, non-experienced child labour or female labour is used for pulling the bellows while experienced labour is used for other activities such as beating, sharpening etc. The average labour charge for experienced labour in Parawahera was Rs.125/= and varies from Rs.75/- to Rs.175/- according to skills and experience. The existing non-skilled labour charges range from Rs.50/= to Rs.75/=. In addition, it is customary to provide meals for labour. Hence, real wage rates could be increased by Rs.20/- per day, when these expenses are added.

Table 4.4 shows the difficulties in use of labour. 73% of blacksmiths mentioned that lack of skilled labour is the biggest problem.

High labour charges and low interest amongst younger blacksmiths were reported as other important issues. (see table 4.3) About 20 percent of blacksmiths stated that they experienced hardly any difficulty in use of labour.

Table 4.4 Difficulties in using labour:

Probelms	No of * blacksmiths	%
Lack of skilled labour	28	73
High labour charges	7	18
Low interest of younger blacksmiths	6	15
No difficulties	8	20

* each respondent is free to indicate more than one reason.
Source: Sample Survey (1991)

4.2 Technology:

Almost all of the blacksmiths used manually based traditional technology which means an onerous job for them to continue production daily. Therefore, their production is restricted to 3 to 4 days a week. Thus, production capacity and efficiency are very low due to the nature of the work. Division of labour is one of the common features in the blacksmiths industry. Thus, pulling bellows is done by one person while beating and sharpening is done by one or two persons. The final finishing is done by another person. This system could be changed in accordance with quantity of products and availability of labour.

Except for two blacksmiths, the others do not have access to electricity due to financial constraints. Therefore impact of modern technology is very low. This affects production efficiency, production capacity and product diversification. Except three blacksmiths, awareness of modern or appropriate technology is very low and consequently blacksmiths' attitudes towards improved technology are not clear. However, a majority of them believe that existing technology is a bottleneck to improved production efficiency. Three persons who have background knowledge of modern technology are innovative in finding out easy techniques through modern technology. For instance, an attempt has been made by a blacksmith to make hammer using available resources in the workshop.

Blacksmith technology in Parawahera does not differ from the technology of other areas in Sri Lanka. The major raw material for production - metal is found in the form of scrap metal, leaf springs etc.

In the past, in some areas of Sri Lanka, metal was produced from iron ores (Yapas) and there were special group of people called Yammonno -iron smelters- who were involved in this process.

Today we no longer find the process of iron smelting nor the people of Yamonno. and blacksmiths mainly depend on scrap metal for their production.

4.3 Support Services:

The survey revealed that there is no organised delivery system *(1) nor a receiving system *(2) to support blacksmiths in the country. Parawahera is no exception from this and, as a result blacksmithy has become a poor relation amongst industries. In the 1970s the industry was supported with more facilities in an organised way under a closed economic policy. Likewise, blacksmiths were also organised and worked as co-operative societies. These societies were able to work very closely with the respective line agencies like the IDB, and the commercial banks. At present under open-economic policy framework, support services network determine on demand and supply systems.

The available records show that the Parawahera Blacksmiths Society had functioned very successfully in the 1970s, in terms of receiving services, while the IDB had functioned in a very organized manner to provide necessary services to the blacksmiths. After the government change in 1977. The Blacksmith society has collapsed due to political and lack of guidance form the IDB. Even though some blacksmiths have negative feelings of group activities, still majority of blacksmith appreciate the work done by the blacksmith society in 1970s. Hence, it is necessary to re-introduce an organised mechanism to support blacksmiths in Parawahera.

4.3.1. Credit

The information on credit shows that a majority of blacksmiths in the village relied mainly on non-formal sources of credit. Only about 25% of blacksmiths obtained credit from formal sources. This credit has been used for purchasing tools and raw materials. The Bank of Ceylon, National Savings Bank and the Rural Banks are important as formal sources while village traders and customers who come from outside villages played the role of a non formal source of credit. Blacksmiths were obliged to sell their products to outside traders as well as to village traders due to personal contracts and these informal transations. Table 4.5 shows the credit obtained from formal sources.

-
- (1) Organised system or a network to distribute raw materials credit and advice, and to promote marketing.
 - (2) Organised network to receive goods and services provided by government & non-government organisations.

Table 4.4 source of credit

Source	Interest rate	No of Loans	Amount Rs.
Grameeya Bank	16%	5	48,000.00
National Savings Bank	16%	4	20,500.00
Bank of Ceylon	16%	1	5,000.00

Source: Sample Survey (1991)

According to table 4.5, the average of disbursement does not exceed Rs.9,600/=. Though this amount is not adequate to meet blacksmiths' requirements, it allows them to reduce financial difficulties and indebtedness. According to current prices Rs.9,600 is not enough to buy some tools. Many blacksmiths who are working in their family workshops need credit for initiating new workshops. While blacksmiths who have workshops need a working capital.

Table 4.6 indicates the reasons as to why blacksmiths' do not receive credit from formal sources. Rigid procedures, difficulties in finding guarantors, lack of know-how and inability to meet bank requirements were reported as major difficulties faced by them.

Table 4.6

Reasons for not obtaining credit

Reason	No	%
Difficulty to find Guarantors	9	31
Unable to meet Bank requirements	7	24
Rigid Bank procedures	7	24
Lack of know-how	5	17
No need	5	17
Total	33	113

Source: Sample survey (1991)

However, small producers like blacksmiths could easily access to the state banks under group production systems. This indicates that the lack of a receiving mechanism in (producer groups or producers' societies) in Parawahera has hindered the receipt of credit from formal sources.

4.3.2 Extension

The information on extension services shows that none of the blacksmiths receive any kind of advice to promote their business. This would be the out come of a lack of delivery mechanism, (organisational network to advice) for the blacksmiths.

About 40% of blacksmiths felt that they do not need advisory services. This shows that their perception of new technology or services available. Likewise, low access to formal credit sources also relates to a lack of know-how, and it indicates the necessity of better advisory services. Even though the IDB regional office, is located in the nearest city, services are now not reaching the village.

4.3 Marketing

The Market for the blacksmithy products is determined by quality, durability and prompt services of the products. The markets for domestic and agricultural tools are well established when compared to repairing services. Table 4.7 presents the sources of marketing outlets in Parawahera Village.

Table 4.7 source of marketing outlets

Source	No	%
Selling by the producers themselves	7	18
Traders came from outside villages	32	82

Source: sample survey(1991)

According to Table 4.7, more than 80% of blacksmiths sell their products at home to outside traders, and the rest (18%) sell by the producer by themselves at Matara and other cities. Outside village traders are coming from Beliatta, Akuressa and Matara and selling at other towns in Southern Province. Due to various reasons a large number of blacksmiths are obliged to sell their products to these traders. Obligations are based on financial assistance given to the blacksmiths, kinship and friendship.

Price determination is based mainly on production costs and quality of products. Product diversification is very low compared to other blacksmithy villages, but blacksmiths specialize some products in order to avoid competitiveness among themselves. Some blacksmiths maintain their prices by providing high quality products. Strength, durability, sharpness and quality materials are important factors in price determination.

But it was evidenced that, some blacksmiths are unable to determine their prices on the above criteria due to indebtness. Table 4.8 shows blacksmiths attitudes on prevailing market prices.

Table 4.8 Blacksmiths perception on prevailent marketing prices.

	No	%
satisfied	11	28
not satisfied	28	72

Source: Sample Survey (1991)

More than 70% of blacksmith are not satisfied with prevailing market prices. A majority of this group relies mainly on financial assistance given by traders. Hence, they are obliged to accept the prices offered by these traders. Others who are satisfied with the existing prices are able to manage their business without depending on money lenders. Thus, a lack of credit facilities badly affects for the product market.

4.4. Costs and Returns:

The analysis of costs and returns reflects the profitability of blacksmithy products. Analysis of production costs is based on average production costs both in terms of per day costs and per unit costs. Returns were estimated on the basis of number of units produced per week day and market prices for the products. The analysis is based on the following assumptions:

- a) Since the production is confined to 3 to four days per week, it was considered that the average number of working days per week is four.
- b) At least two workers work in a workshop.
- c) There are no maintenance costs or depreciation costs.

Since almost all the blacksmithy workshops have been in operation for more than 15 years, initial overheads costs were not considered as production costs. However, it was discovered that prices of all equipment had increased rapidly during the last 15 years (table 4.9). Current market prices of many of these items of equipment are subject to great variation. Price variations are related to different brand names and quality levels.

Table 4.9 : Price variations of initial production equipments.

Name of equipment	Average prices		present price range Rs Rs	
	1976/80 Rs	1991 Rs		
Bellow	940	2350	1500	- 4000
Avil	400	1600	800	- 2740
Leg vice	260	1810	400	- 6000
Bench vice	250	1037	600	- 2000
Wedge Hammer	106	305	150	- 1200
Drill	65	233	75	- 375
Saw	80	135	90	- 275
Hammer	52	128	90	- 195
Electric grinder	-	2800	2000	- 3600
Motor		5500	3500	- 7500
Power saw		2000	--	- --

Source sample survey (1991)

Construction and maintenance costs of workshed are varied in accordance with permanency and the materials used. Except three, all other worksheds have made on temperory basis.

4.4.1 Costs:

The data on costs of production of blacksmithy products in the past 15 years show remarkable increase. Between 1976 to 1980 and 1991 equipment and material costs have increased twofold and threefold respectively. Since the industry is based on family labour, the influence on labour cost is marginal.

Production costs were estimated on the basis of costs of production inputs used per day and the cost of production inputs used per unit. Table 4.10 reflects average production costs per day in accordance with various products.

Table 4.10 Average daily production costs classified by Inputs and various products.
(Exclusive family labour)

Item	units/ day	Material costs Rs/day	Labour costs(*) Rs/day	Total costs Rs/day
MannaKnife(small)	08	108.40	60.00	168.40
Manna knife (Big)	05	200.40	75.00	275.40
Tableknife(No.01)	15	124.80	125.00	249.80
Tea pruning knife	11	176.00	125.00	301.00
Sickle	10	64.48	125.00	189.98
Small knife	06	28.50	FL	28.50
Wheel knife	06	204.30	125.00	329.30
Iluk ketta	18	420.30	125.00	545.30
Cinnamon knife	08	165.36	125.00	290.36
Axe	08	240.40	125.00	365.40
Big knife	15	200.25	125.00	325.25
Ketta	12	249.84	125.00	373.84
Ameri knife	20	151.20	185.00	336.20
Coconuts crappers	30	277.50	125.00	402.50
Chisel	05	45.00	FL	45.00
Gira	11	143.00	65.00	203.00
Masonry spade	15	277.50	125.00	402.50
Horse shoe	06	30.00	FL	30.00
Table knife (02)	10	390.80	125.00	515.80

Source: Sample Survey (1991) FL = Family Labour

(* Since there is a customary to provide meals for labour the total labour cost would increase by Rs.20/= when we add value of meals)

When estimating imputed value of Family labour, labour become the most important cost component of blacksmithing industry. It indicates more than 60% of the total cost. In some instances it accounts for more than 75% of the total cost (see table 4.11).

Table 4.11 Average daily production costs classified by inputs and various products (Inclusive of family labour)

Item	units/ day	Material costs Rs/day	Labour(*) costs Rs/day	Total costs Rs/day
MannaKnife(small)	08	108.40	185.00	293.40
Manna knife (Big)	05	200.40	200.00	400.40
Tableknife(No.01)	15	124.80	250.00	374.80
Tea pruning knife	11	176.00	250.00	426.00
Sickle	10	64.48	250.00	314.48
Small knife	06	28.50	200.00	228.50
Wheel knife	06	204.30	250.00	454.30
Iluk ketta	18	420.30	250.00	670.30
Cinnamon knife	08	165.36	300.00	465.36
Axe	08	240.40	250.00	490.40
Big knife	15	200.25	250.00	450.25
Ketta	12	249.84	250.00	499.84
Ameri knife	20	151.20	375.00	526.20
Coconuts crappers	30	277.50	250.00	527.50
Chisel	05	45.00	125.00	170.00
Gira	11	143.00	250.00	393.00
Masonry spade	15	277.50	250.00	527.50
Horse shoe	06	30.00	100.00	130.00
Table knife (02)	10	390.80	250.00	640.00

Source: Sample Survey (1991) FL = Family Labour

(* The use of family labour was costed using the same rate of wages paid to hired workers. However the value of food consumed by family labour was not counted in costing, on the assumption that the family members will have to be maintained in any case.

Table 4.11 shows increase of total production costs in accordance with imputed value of family labour. The costs of many products which are made mainly by family labourers are increased more than 60 percent. This indicates the impact of imputed value of family labour is very significant in determining profitability of the industry.

4.4.2 Returns and Profitability

The analysis of returns and profitability is based on production costs, number of units produced and market prices. Profitability was estimated on a weekly basis because it takes about one week to complete the production process and some blacksmiths are used to selling final products on a weekly basis. As indicated in section 4.2 the production is confined to four working days per week.

Though, production costs could work out on daily basis, daily production cannot work out on the same basis because final finishing of the products is done at the end. Table 4.12 shows the distribution of weekly production, unit prices, returns, weekly costs and profitability.

Table 4.12 Returns and Profitability classified on weekly basis (Rs/week)

Items	Prod cton per week	Unit price Rs	Average Return Rs/week	Average cost (* Rs/week	Profits Rs/week
Manna Knife(small)	32	45.00	1440.00	674.00	766.00
Manna knife (Big)	16	90.00	1440.00	1301.00	139.00
Table knife	60	25.00	1500.00	999.00	501.00
Tea pruning knife	44	45.00	1980.00	1204.00	776.00
Sickle	40	53.75	2150.00	760.00	1390.00
Small knife	24	20.00	480.00	114.00	366.00
Wheel knife	24	75.00	1800.00	1317.00	413.00
Iluk ketta	72	47.50	3420.00	2181.00	1239.00
Axe	32	63.33	2026.56	1458.00	568.00
Big knife	36	60.00	2160.00	1301.00	859.00
Kette	48	57.50	2760.00	1495.00	1265.00
Ameri knife	80	35.00	2800.00	1345.00	1455.00
Coconut scrapers	120	18.00	2160.00	1610.00	550.00
Chisel	20	35.00	700.00	180.00	520.00
Gire	44	35.00	1540.00	812.00	728.00
Mesonry spade	60	40.00	2400.00	1608.00	792.00
Horse shoe	12	60.00	720.00	120.00	600.00
Table knife	40	60.00	2400.00	2063.00	337.00

Source: Sample Survey (1991)

* Excluding family labour.

The average returns, which indicate the value of products sold per week, vary according to the items produced and the number of units. Average returns for sickles, Iluk knives, Axes, Jack knives, ketta, coconut scrapers and masonry equipment were high compared to other products such as small knives, cinnamon knives, horse shoes, chisels, and big knives (Table 4.12).

The average profit margins per week vary from Rs.139.00 to Rs.1455.00 with considerable variation. When the value of family labour, overheads and depreciation costs are taken into account, average profit margins are not attractive in many cases. The products which earn less than Rs.700/= per week are not attractive. But the products which earn more than Rs.700/= are attractive at least to survive in the industry.

Table 4.13 Returns and Profitability classified on weekly basis inclusive of family labour.

Items	Production per week	Unit price Rs	Average Return Rs/week	Average cost (*) Rs/week	Profits Rs/week
Manna Knife (small)	32	45.00	1440.00	1174.00	266.00
Manna knife (Big)	16	90.00	1440.00	1602.00	-162.00
Table knife	60	25.00	1500.00	1499.00	1.00
Tea pruning knife	44	45.00	1980.00	1704.00	276.00
Sickle	40	53.75	2150.00	1258.00	892.00
Small knife	24	20.00	480.00	914.00	-434.00
Wheel knife	24	75.00	1800.00	1817.00	-17.00
Iluk ketta	72	47.50	3420.00	2681.00	739.00
Axe	32	63.33	2026.56	1962.00	64.00
Big knife	36	60.00	2160.00	1800.00	360.00
Kette	48	57.50	2760.00	1999.00	761.00
Ameri knife	80	35.00	2800.00	2105.00	695.00
Coconut scrappers	120	18.00	2160.00	2110.00	50.00
Chisel	20	35.00	700.00	680.00	20.00
Gire	44	35.00	1540.00	1972.00	-32.00
Masonry spade	60	40.00	2400.00	2110.00	290.00
Horse shoe	12	60.00	720.00	520.00	200.00
Table knife	40	60.00	2400.00	2560.00	-160.00

Source: Sample Survey (1991)

When calculating imputed value of family labour the average weekly profitability is considerably low in many products. Four products such as Manna, Table Knife, and Small Knife are completely not economically viable while three products just meet only production costs.

Thus, it is clear that the industry is not running purely on commercial basis in most cases. Profit margins are negative when family labour, overheads and depreciation costs are added. However, these factors have not affected the survival of the industry because the majority of blacksmiths practice this industry on a self employment basis.

5.1 Income:

The Table 4.14 indicates weekly household income generating from blacksmithy in Parawahera. Even though the level of income varies over a wide range, the average level of income of the lowest income category does not fall below Rs.327/= per week.

Table 4.14 - Weekly Income-Generating from Blacksmithing

Income Group Rs.	No	Average Income Rs.	Range Income Rs.
0 - 400	6	327.00	214.00 - 394.00
401 - 600	11	509.00	402.00 - 587.00
601 - 800	5	704.00	658.00 - 756.00
801 -1000	6	886.00	804.00 - 940.00
1000 and over	11	1383.00	1024.00 - 1974.00
Overall	39	761.80	214.00 - 1974.00

Source: Sample Survey

According to table 4.14, the majority of blacksmiths(85%) earn more than Rs.500.00 per week while more than half of the blacksmiths earn above 704/= per week. This is a very good indication when compared to level of income in other rural sectors, specially in the agricultural sector. Almost one third of the blacksmiths were earning more than Rs.1024/= per week indicating more than Rs.4.100/= per month.

6.1 Parawahera and other blacksmithy villages:

The observations made on comparisons between Parawahera and other leading blacksmithy villages like Beliatta, Weboda, Apalawa and Kotmale shows little difference in work practice. Even though the industry was inherited by specific castes, some differences emerge when it is practiced as a business. Thus, a few differences could be seen in respect of entrepreneurship, marketing, product diversification and the attitudes of the blacksmiths.

Blacksmithing in Parawahera is done as a way of self-employed income generating activity. Parawahera blacksmiths are far behind when compared to blacksmiths in Weboda, Kotmale and Beliatta in the sense of product diversifications. Weboda blacksmiths are highly market-oriented and their manufactured products are also moving from traditional instruments and tools to new products items like bolts & nuts and electrical sockets etc. Likewise blacksmiths in Kotmale and Beliatta are also producing more market-oriented products than blacksmiths in Parawahera.

Marketing channels in Parawahera are based mainly on village and outside traders. But Weboda and Kotmale blacksmiths are using different marketing channels, such as Sunday fairs, and selling to wholesale dealers in major cities (Kandy, Colombo, Nuwara Eliya) etc. though there is no substantial difference in marketing channels in Beliatta and Epalawa, product diversification has reduced the risks of marketing for those villages.