Available online at www.ijpab.com

DOI: http://dx.doi.org/10.18782/2582-2845.8152

ISSN: 2582 – 2845

Ind. J. Pure App. Biosci. (2020) *8*(3), 428-436

Research Article

Indian Journal of Pure & Applied Biosciences

Peer-Reviewed, Refereed, Open Access Journal

Value Addition at Different Levels of Silk Industry in Tamil Nadu- An Economic Analysis

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Received: 2.05.2020 | Revised: 9.06.2020 | Accepted: 17.06.2020

ABSTRACT

Sericulture activities are highly successive and judicious in nature. Value addition of different stages of silk industry like mulberry cultivation, silkworm rearing, reeling, twisting, dying and weaving. Every stage is income generating in silk industry like sericulturists to weavers. The study result showed that the estimate is made on the basis of one kilogram of silk produced, i.e. inputs to produce one kg of silk yarn and this amount is used to make final barcode type of silk saree. The produce one kilogram of silk, it requires total expenditure Rs.1758.35. From these inputs, 6.94 kg of cocoons were produced and could be sold at Rs. 2498.40. Farmers were able to make Rs. 740.05 as value addition in rearing cocoon. As far as reelers, amount of 6.94kg cocoons purchased at Rs. 2490.40, they can make 1.06 kg of raw silk that sold at a value of Rs. 3339.00. As for twisters, from 1.04 kg raw silk as input (Rs. 3339), they make one kg of twisted silk and sold for Rs. 3604.00 per kg, which leads to an Rs.108.36 as margin for value addition. For dyers, bought twisted silk for Rs.3604 to make 1.02 kg of dyed silk which was sold at a value of Rs.3922. Dyers got Rs.84.80 from value addition in the dying process. From one kg of dyed silk @ Rs.3922, weavers could make one saree and sold at Rs.13713.11. Total value addition in this process was Rs.4626.42.

Keywords: *Sericulture, Silk industry, Cultivation, Mulberry*

INTRODUCTION

India is an agriculture nation, where more number of agricultural farmers and land resources are obtainable, despite three fourth of the total population alive in rural areas. Approximately 50 percent of the country's national revenue is derivative from agriculture and allied farm activities. Sericulture is one of the agro-based on cottage industry which requires less investment and simple innovation and get high and continuous income which makes it an ideal creativity and fits well in to the socio-economic fabric of India and a human resource abundant economy.

Cite this article: Elumalai, D., Mohanraj, P., Ramamoorthy, R., Mohan, C., & Poovizhiraja, B. (2020). Value Addition at Different Levels of Silk Industry in Tamil Nadu- An Economic Analysis, *Ind. J. Pure App. Biosci. 8*(3), 428-436. doi: http://dx.doi.org/10.18782/2582-2845.8152

Sericulture industry which includes both farm and non-farm activities provides employment to approximately 8.03 million persons in rural and semi urban areas. In India area under mulberry during 2014-15 is around 2,19,819 Ha (2.19 lakh Ha) producing 159259 metric tons of cocoons with a raw silk productivity of 97.30 Kg/Ha. It is assessed that 164.86 lakh tons of by product in terms of silkworm rearing waste is existing from the present mulberry cultivation area. Whereas pupa which is a key by-product of reeling area is about 1,11,481 tons available for proper value addition (Savithri., et al., 2016). Sericulturists is a farm level can take up these commercial activities and can make supplementary income. Further rural youth can take up different projects of value added products on commercial basis. (Savithri, et al., 2016 & Arindam basu, 2015). The present study workout out value added products, by products generated at Mulberry production, silk worm rearing, silk worm seed production, Reeling stages were considered and scientifically studied. The present following objectives on,

- To estimate the value addition at different levels of silk industry per 100 DFLs
- To estimate the value addition at different levels of silk industry per kg raw silk

MATERIALS AND METHODS

The study investigation out traditional district of Tamil Nadu. Using random sampling techniques followed from collected on sample and analysis of primary data. Primary data collected from Dharmapuri and Krishnagiri district of Tamil Nadu.

Estimation of value addition at different stages of silk industry

The end product was silk and silk fabrics from sericulture. In the present scenario of decreasing cocoon and silk prices, it was necessary to look for economic importance of other products after cocoon production from sericulture for the purpose of value addition. Value added was a term frequently used when discussing the future profitability of sericulture. A broad definition of value addition was to economically add value to a product by changing its current place, time and form characteristics to characteristics more preferred in the market place (Kraybill & Johnson, 1989; Royer, 1995). In all-purpose adding value was the process of changing or transforming a product from its original state to a more valuable state (Kraybill & Johnson, 1989; Royer, 1995; Iyengar, 2009).

The sericulture activities were broadly divided into two divisions *viz.*, pre-cocoon technology and post cocoon technology. The activities of each division were further divided into sub-sectors. The main product of one subsector becomes a raw material for another sector, thus, interlinking each other and changing the value, form and quantity to enhance the preference by the consumers. The degree of value addition was assessed by considering the price difference of the product. The margin was obtained after subtracting the cost from the price difference. The margin thus obtained was divided by the purchase price to arrive at the figure of value addition. This figure was expressed as a percentage of value addition to the product (Fig 2.1).

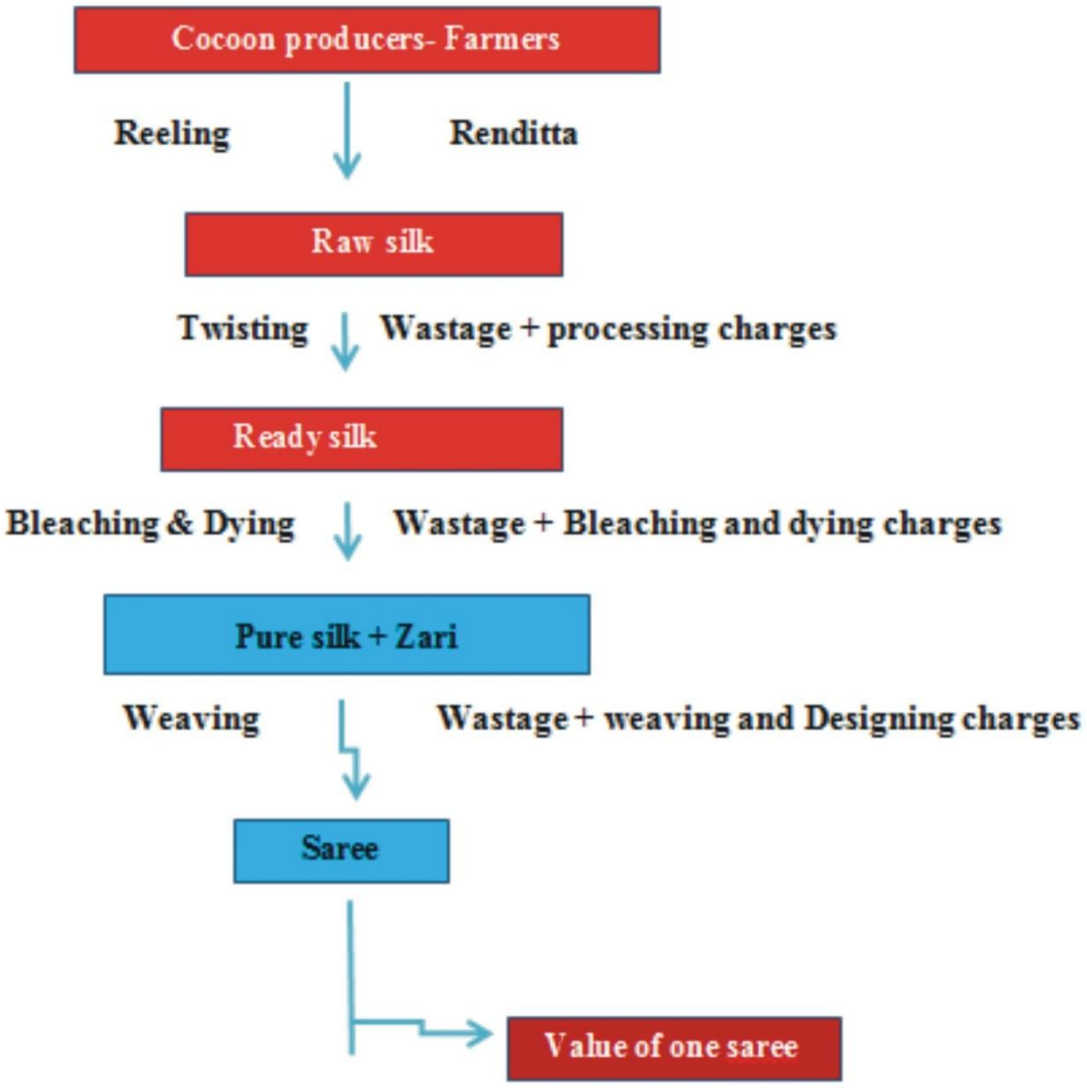


Fig. 2.1. Flow chart of value addition at different stages of silk industry

RESULT AND DISCUSSION

Value addition of sericulture industry

The sericulture activities are broadly divided into two divisions like pre cocoon (mulberry cultivation and silkworm rearing) and post cocoon technology (reeling, twisting, dying and weaving). The activities of each division are further divided into sub-sectors. The main product of one subsector becomes a raw material for another sector, thus, interlinking each other and changing the value, form and quantity to enhance the preference by the consumers. The stakeholders and activity was given in Figure.3.1 & 3.2.

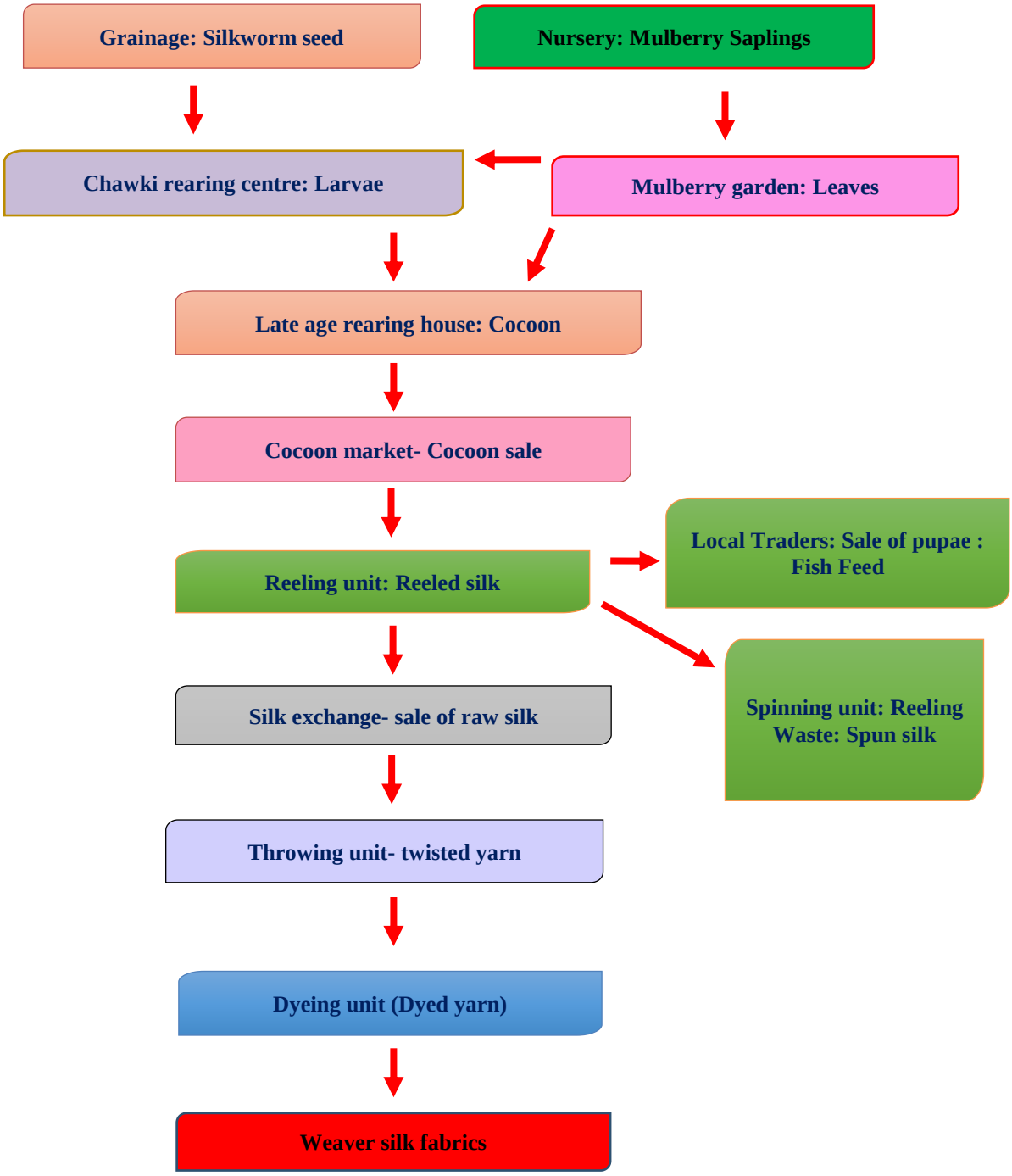
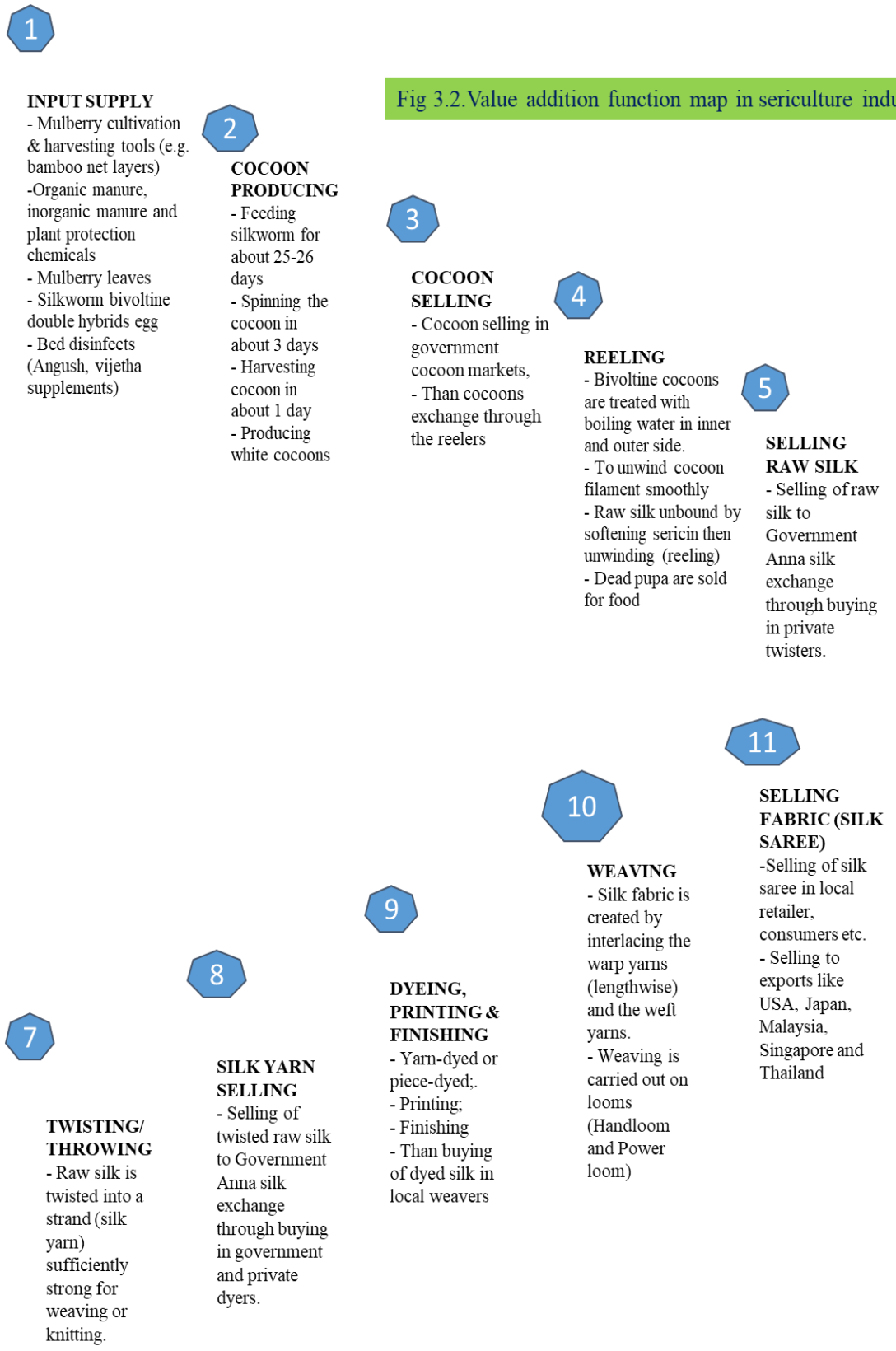


Fig. 3.1. Flow chart of activities in sericulture industry

Fig 3.2.Value addition function map in sericulture industry



3.1. Value addition at different levels of silk industry per 100 DFLs in Rs.

For comparing value addition in silk at different level, cost of production, return and margin of farmers, reelers, twisters, dyers and weavers were calculated for 100 Dfls and for one kilo gram of silks. The purpose of calculating cost and return for 100 Dfls was to find out return and percentage of margin obtained by farmers for 100 Dfls along with their share in final price in the supply chain. It facilitates comparison of stake holders in supply chain since major units followed in sericulture production was 100 Dfls. This study objective is to know the percentage share of cost, return and margin for producing one kilo gram of silk. It was arrived from data for 100 Dfls. Value addition at different levels of sericulture industry per 100 Dfls is presented in Table 3.1. It is inferred from the table 3.1, that total cost of Rs. 105440 was spent for producing 12.30 kg of silk fabrics from 100 Dfls. Gross return from 100 Dfls was Rs. 159125 with gross margin of Rs. 68035.98.

In this process, farmers incurred total cost of Rs. 21531.30/ 100 Dfls for cocoon production and able to get margin of Rs. 9068.70/ 100Dfls which is accounted for 13.3 per cent share of gross margin. Among the total cost, input purchase cost alone accounted for 55.5 percent and 44.5 per cent incurred towards production of cocoon by farmers. For reelers, purchase cost of raw materials accounted for 80.6 per cent and remaining amount to production of raw silk. Twisters and weavers were able spent about more than 95 per cent towards raw material purchase. For them fixed cost for production was more as discussed elsewhere in economics of twisting and dyeing unit.

Weavers were getting highest margin of Rs. 53685/ 100 Dfls. And weavers spent 56.10 per cent for producing final fabrics alone from 100 Dfls with raw materials purchase share of 43.9 per cent. (Fig.3.3 & 3.4)

Table 3.1. Value addition at different levels of silk industry per 100 DFLs in Rs.

Stake holder	Activity	Product	Average Quantity	Purchase cost	Processing cost	Total Cost	Total returns	Margin	%
1	**2**	**3**	**4**	**5**	**6**	**7 (5+6)**	**8 (4 x Price)**	**9 (8-7)**	**10**
Sericulture farmers	Chawki Larvae		100 Dfls	-	2500	2500	-		
	Mulberry leaf			-	9450	9450	-		
	Silkworm rearing	Cocoons	85	11950 (55.5)	9581.30 (44.5)	21531.30 (100)	30600	9068.70	13.3
Reelers	Raw silk reeling	Raw silk	13 kg	30600 (80.6)	7371.06 (19.4)	37971.06 (100)	40950	2978.94	4.4
Twisters	Silk twisting	Twisted silk	12.75 kg	40950 (97.4)	1096.66 (2.6)	42046.66 (100)	43350	1303.34	1.9
Dyers	Silk dying	Dyed silk	12.50 kg	43350 (95.8)	1900.00 (4.2)	45250.00 (100)	46250	1000.00	1.5
Weavers	Fabric weaving	Fabric (saree)	12.30 kg	46250 (43.9)	59190 (56.1)	105440 (100)	159125	53685	78.9
Total								**68035.98**	**100**
Consumers	Purchase		19 saree	Rs. 159125 Zari mixed saree					

(Figures in parenthesis indicates percentage to total)

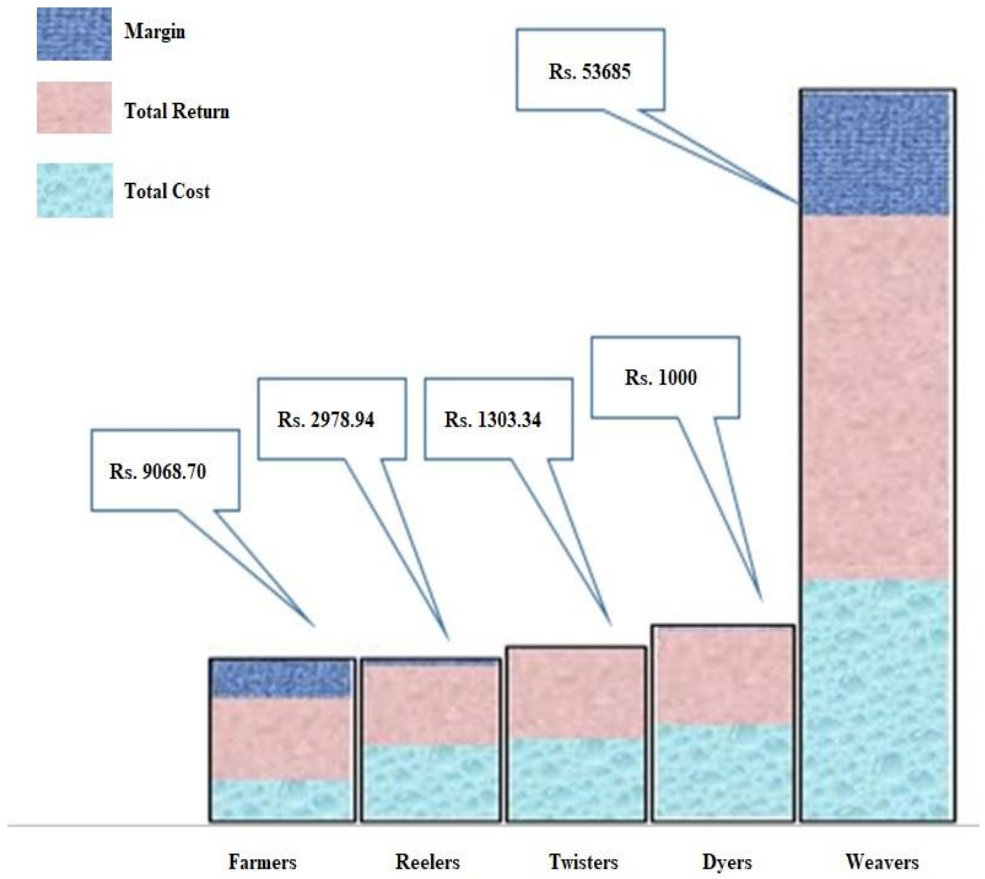


Fig. 3.3..Value addition at different levels of silk industry per 100 DFLs in Rs.

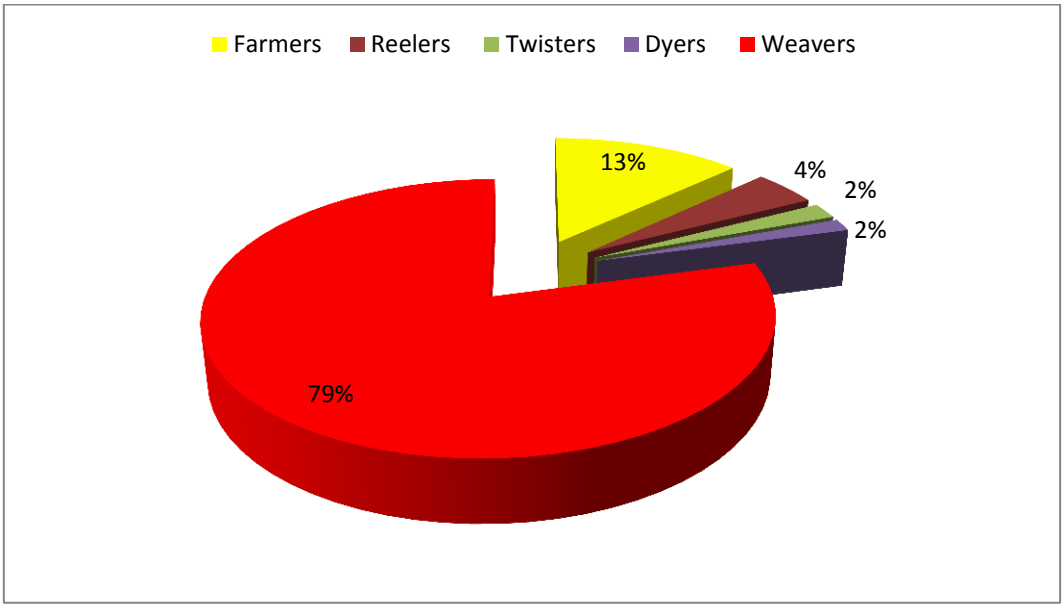


Fig. 3.4.. Value addition at different levels of silk industry per 100 DFLs in percentage

Table 3.2. Value addition at different levels of silk industry Rs. / 1 kg of silk

Stake holder	Activity	Product	Quant-ity	Purchase cost	Processing cost	Total Cost	Total returns	Margin	%
1	**2**	**3**	**4**	**5**	**6**	**7 (5+6)**	**8 (4 x Price)**	**9 (8-7)**	**10**
Sericulture farmers	Mulberry leaf production	Mulberry leaf	160.58	-	769.16	769.16			
	Silkworm rearing	Cocoons	6.94	769.16	989.19	1758.35	2498.40	740.05	12.7
Reelers	Raw silk reeling	Raw silk	1.06	2498.40	593.45	3091.85	3339.00	247.15	4.3
Twisters	Silk twisting	Twisted silk	1.04	3339.00	156.64	3495.64	3604.00	108.36	1.9
Dyers	Silk dying	Dyed silk	1.02	3604.00	233.20	3837.20	3922.00	84.80	1.4
Weavers	Fabric weaving	Fabric (saree)	1.00	3922.00	5164.69	9086.69	13713.11	4626.42	79.7
					Total			**5806.78**	**100**
Consumer	Purchase	Zari mixed	1 saree	Rs. 8375					

(Figures in parenthesis indicates percentage to total)

3.2.Value addition at different levels of silk industry Rs. / 1 kg of silk

Value addition at different levels of sericulture industry per one kg of raw silk is presented in Table 3.2. The estimate is made on the basis of one kilogram of silk produced, i.e. inputs to produce one kg of silk yarn and this amount is used to make final barcode type of silk saree. The produce one kilogram of silk, it requires total expenditure Rs.1758.35 for buying silkworm eggs, mulberry leaf, bed disinfects (Vijetha and Angush) and raising tools. From these inputs, 6.94 kg of cocoons are produced and can be sold at Rs. 2498.40. Farmers can make Rs. 740.05 as value addition in the rearing process. As for reelers, from the above amount of cocoons (6.94kg, purchased at Rs. 2490.40), they can make 1.06 kg of raw silk that can be sold at a value of Rs. 3339.00.

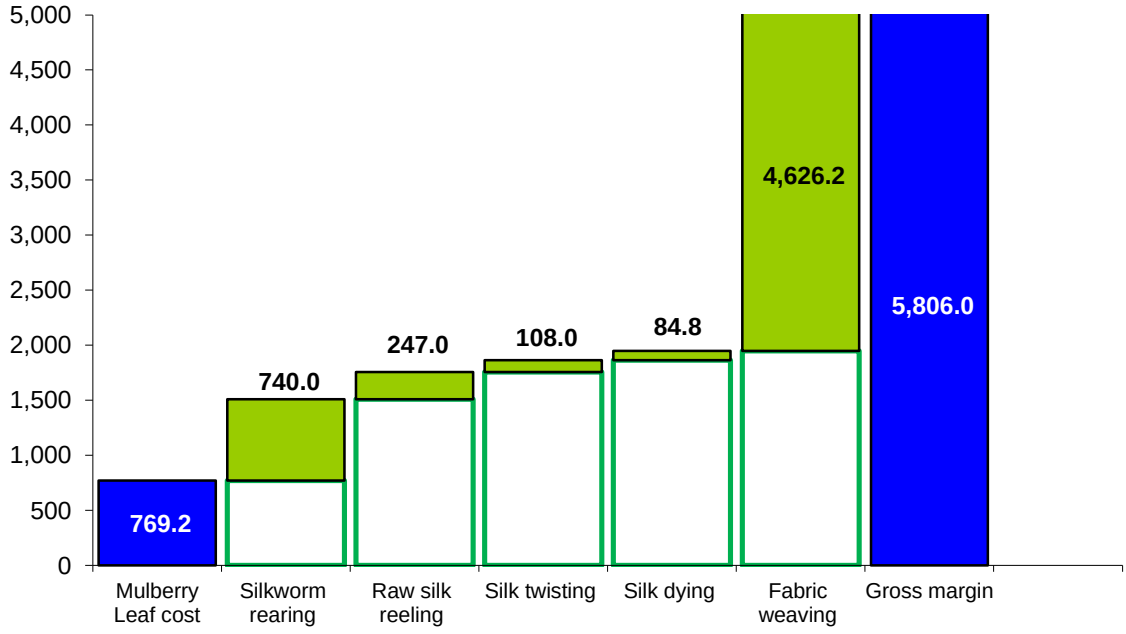


Fig. 3.5. Value addition of different levels of silk industry Rs./1kg of silk

Thus, reelers make a profit of Rs. 247.15, but the value addition with regard to silk production is Rs.247.14 As for twisters, from 1.04 kg raw silk as input (Rs. 3339), they make one kg of twisted silk. Twisted silk can be sold Rs. 3604.00 per kg, which leads to an Rs.108.36 as value addition. Twisted silk is used by weavers to produce final products such as sarees. As for dyers, from the above cost of twisted silk Rs.3604. they can make 1.02 kg of dyed silk can be sold at a value of Rs.3922. Dyers can make Rs.84.80 as value addition in the dying process. Dyed silk is used by weavers to produce final products such as sarees. From 1 kg of dyed silk Rs.3922, weavers can make one sarees and sell at Rs.13713.11. Total value addition in this process was Rs.4626.42 (Fig. 3.5 & 3.6).

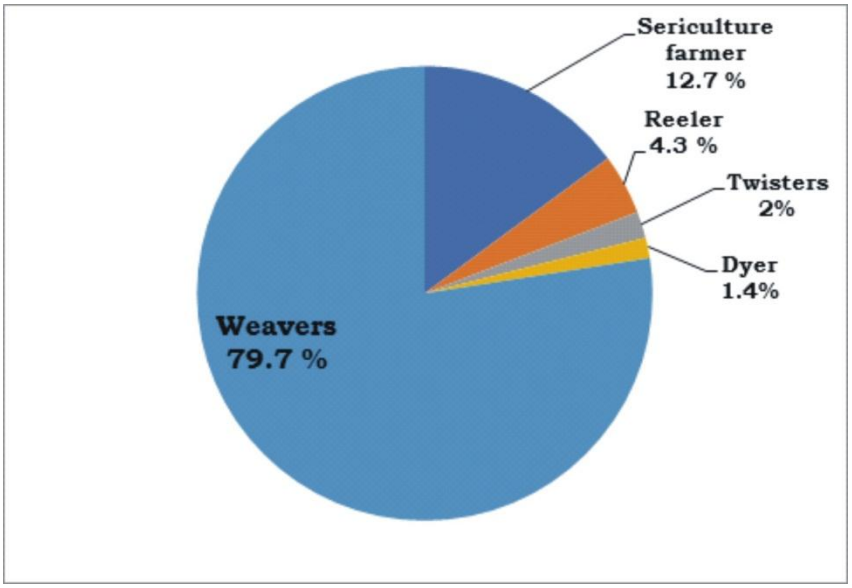


Fig. 3.6. Margin percentage for Value addition at different levels of silk industry

Summary

Silk industry value addition hopefully should play a crucial role in the coming years to make the sericulture an economically viable proposition enabling it to withstand competition from other cash crops. It is concluded from the result that value addition was found to be more at farmers and weavers level. Reelers, Twisters and dyers were involved in process of converting raw materials from cocoon to raw silk to twisted silk to dyed silks. They were not able to get price according to the quality of product that they were making. Especially in reeling, multi end reelers were able to produce good quality raw silks as compared to other type of reelers but got same price for all type of raw silks irrespective of quality. Hence their margin found to be low.

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