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Employment generation of sericulture in traditional and non-traditional areas of Karnataka

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Abstract

A study on employment generation of sericulture in Karnataka, covering traditional districts (Ramanagara, Chikkaballapura) and non-traditional districts (Ballari, Raichur), analysed labour needs based on data from 120 respondents using a multistage random sampling technique. The results showed that traditional regions required 692 mandays per acre annually, while non-traditional regions required 699 mandays, with both regions demonstrating substantial contributions from both men and women. Statistical analysis revealed significant differences, with t-values of -6.82 for mulberry establishment, -26.40 for garden maintenance and 5.74 for silkworm rearing. The negative t-values for mulberry activities suggest higher labour demand in non-traditional areas, while the positive value for silkworm rearing indicates slightly more labour needed in traditional areas. Overall, the study emphasizes the labour-intensive nature of sericulture and the importance of region-specific strategies to optimize labour utilization.

Keywords: Sericulture, Employment generation, Labour utilization, Traditional districts

Introduction

Sericulture is an agro-based rural industry that involves the rearing of silkworms for the production of cocoons, which are then used to produce raw silk. This raw silk is obtained from the cocoons spun by mulberry silkworms. Sericulture plays a vital role in the socio-economic development of rural areas. It is a highly labour-intensive, profitable, and low-input indoor activities that provides frequent and periodic economic returns. Moreover, it is particularly well-suited for women in rural sectors, offering them opportunities for income generation. Sericulture plays a crucial role in enhancing the economic prospects of rural populations. As an agro-based cottage industry, it aligns seamlessly with India's rural structure, where agriculture remains the predominant occupation. The industry offers employment to around 8.7 million individuals in rural and semi-urban areas. From the cultivation of mulberries to the final weaving stages, sericulture provides substantial employment opportunities, with up to 1,000 man-days per acre. This enterprise is highly profitable, requiring minimal capital investment and yielding significant returns compared to other industries. It is also one of the most stable enterprises in tropical regions of India, ensuring a steady income throughout the year. Sericulture is both a cottage industry and a highly labour-intensive sector, blending agricultural and industrial activities. It is practiced in over 60,000 villages across the country (Singh and Kumar, 2023).

Objective: To assess the employment generation in sericulture farming.

Methodology

The study was conducted in traditional sericultural districts namely Ramanagara and Chikkaballapura of Karnataka where most of the farmers practice sericulture and in the non-traditional districts namely Ballari and Raichur of Karnataka. A multistage random sampling technique was used to collect the required information from the 120 sericulture growers. A pre-tested well-structured questionnaire was prepared considering different parameters relating to sericultural activities such as participation in various activities of mulberry cultivation and silkworm rearing. Simple statistical classification is done to count the percentage of female participation in sericultural practices.

Results and Discussion

The data on manpower engaged in sericulture activities presented in table 4.10 which gives detailed comparison of labour distribution between men and women in traditional and non-traditional districts. In both types of regions, sericulture is shown to be a labour-intensive activity that engages both genders, but there are notable distinctions in how tasks are distributed, particularly between men and women, depending on whether the region is a traditional or non-traditional sericulture area.

In traditional districts, men are more involved in physically demanding tasks, such as ploughing and irrigation, where their participation is almost exclusive. For example, in the task of ploughing, men contribute 2 mandays per acre, with no involvement from women. Similarly, in irrigation, men

account for 36 mandays per acre, while women's involvement is minimal. However, women play a significant role in other tasks, particularly those that are labour-intensive but less physically demanding. In activities like planting, weeding and silkworm rearing, women are indispensable. For instance, in the task of planting, women contribute 10 mandays per acre compared to 3 mandays by men. Similarly, for weeding, women's participation is much higher, with 30 mandays compared to 13 from men. When it comes to mulberry garden maintenance, women continue to play an essential role, particularly in activities such as weeding and pruning. In silkworm rearing, women's contribution is particularly prominent. They contribute significantly to shoot harvesting and bed cleaning, with 118 and 65 mandays respectively, making them critical to the success of the silkworm rearing process. Overall, in traditional districts, women contribute 342 mandays per acre, nearly matching the 350 mandays contributed by men, underscoring the vital role women play in this region.

In non-traditional districts, the pattern of labour distribution is slightly different, though the overall contribution of women remains substantial. Men are again more involved in physically intensive tasks like ploughing and irrigation, with

3 and 45 mandays, respectively. However, similar to traditional districts, women play a significant role in tasks such as planting and weeding. For example, in non-traditional districts, women contribute 8 mandays for planting compared to men's 3 mandays and in weeding, they provide 25 mandays compared to men's 11 mandays. In garden maintenance, women's involvement is also substantial, particularly in tasks like weeding and pruning, with 52 and 11 mandays, respectively. This highlights the importance of women in maintaining the health and productivity of mulberry gardens in non-traditional districts. When it comes to silkworm rearing, women in non-traditional districts contribute heavily to labour-intensive tasks. For example, they provide 140 mandays for shoot harvesting, significantly more than the 118 mandays contributed by men and 57 mandays for bed cleaning, compared to 18 from men. This highlights that women are not only involved in more routine tasks but also take on key responsibilities in the most labour-intensive parts of the sericulture process. In total, women in non-traditional districts contribute 334 mandays per acre, close to the 365 mandays contributed by men, again emphasizing their critical role in the sericulture industry even in newer, non-traditional areas.

Table 1: Manpower engaged in sericulture activities (MD/acre/year)

Sl. No.	Particulars	Traditional region			Non-traditional region		
		Men	Women	Total	Men	Women	Total
A.	Establishing mulberry garden						
1	Ploughing	2	0	2	3	0	3
2	Planting	3	10	13	3	8	11
3	Manuring	15	0	15	12	4	16
4	Fertilizer application	6	2	8	3	5	8
5	Hoeing/Weeding	13	30	43	11	25	36
6	Irrigation	36	1	37	45	0	45
	Sub-total (A)	75	43	118	77	42	119
B.	Mulberry garden maintenance						
1	Manuring	24	8	32	22	10	32
2	Fertilizer application	8	5	13	4	5	9
3	Hoeing/Weeding	5	48	53	2	52	54
4	Irrigation	27	0	27	36	0	36
5	Pruning and cleaning	27	16	43	32	11	43
6	Plant protection measures	6	0	6	8	0	8
	Sub-total (B)	97	77	174	104	78	182
	Total (A+B)	172	120	292	181	120	301
C.	Silkworm rearing						
1	Disinfection	13	10	23	15	2	17
2	Shoot harvest	125	118	243	118	140	258
3	Mounting(Plastic/Bamboo)	10	29	39	8	15	23
4	Harvesting & Bed cleaning	22	65	87	18	57	75
5	Marketing &transportation of cocoons	8	0	8	25	0	25
	Sub-total	178	222	400	184	214	398
	Total (A+B+C)	350	342	692	365	334	699

In summary, the data reveals a balanced distribution of labour between men and women in both traditional and non-traditional districts, with women playing a particularly vital role in tasks that require constant attention and care, such as planting, weeding and silkworm rearing. While men are more involved in physically intensive tasks, the overall contribution of women is nearly equal to that of men in both regions. This balance reflects the gender-inclusive nature of sericulture and the sector's capacity to generate employment for women, making it a significant contributor to rural

development and gender equality in employment opportunities. Women's participation in the sericulture industry is therefore not only essential for the success of the sector but also for improving the socio-economic status of women in both traditional and non-traditional regions.

The table 2 compares the manpower engaged in sericulture activities between traditional and non-traditional regions, specifically focusing on establishing mulberry gardens, maintaining these gardens and silkworm rearing.

On average, the traditional region requires slightly less

manpower (117.63 mandays) compared to the non-traditional region (119.75 mandays), with a mean difference of 2.12 mandays. The t-value of -6.82 indicates a significant difference at one per cent, suggesting that establishing mulberry gardens is more labour-efficient in the traditional region. Maintenance of mulberry gardens also demands less manpower in the traditional region (292.40 mandays) compared to the non-traditional region (302.10 mandays), with a mean difference of 9.70 mandays. The t-value of -26.40 shows a highly significant difference at one per cent, implying that garden maintenance is notably more labour-efficient in the traditional region. The traditional region

engages slightly more manpower in silkworm rearing (400.03 mandays) compared to the non-traditional region (397.23 mandays), with a mean difference of -2.80 mandays. The t-value of 5.74 indicates a statistically significant difference at one per cent, suggesting that silkworm rearing requires slightly more labour in the traditional region. Overall, the results show that the traditional region generally requires less manpower for establishing and maintaining mulberry gardens but slightly more for silkworm rearing, reflecting differences in labour utilization across these sericulture activities.

Table 2: Comparison of manpower engaged in sericulture in traditional and non-traditional region per acre

Sl. No	Particulars	Traditional region	Non-traditional region	Mean difference	t- value
1	Establishing Mulberry Garden	117.63	119.75	2.12	-6.82*
2	Mulberry Garden Maintenance	292.40	302.10	9.70	-26.40*
3	Silkworm rearing	400.03	397.23	-2.80	5.74*
	Total	811.00	820.53		

Note:* Indicate significant at 1% level

Conclusion

In the traditional region, the total man-days required for establishing and maintaining the mulberry garden, as well as silkworm rearing, amount to 692 mandays. In the non-traditional region, the total is 699 mandays per acre per year. Both regions show a significant contribution from both men and women, with a slightly higher total in the non-traditional area, indicating the considerable labour effort involved in sericulture. The t-statistic values of -6.82 for mulberry establishment, -26.40 for mulberry garden maintenance and 5.74 indicate statistically significant differences. These values suggest that silkworm rearing demands slightly more labour in traditional regions compared to non-traditional regions.

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