IMPACT OF SERICULTURE PILOT PROJECT IN KANAKAPURA

AN EVALUATION

By
INSTITUTE OF SOCIAL STUDIES TRUST
10TH CROSS, R.M.V. EXTENSION
BANGALORE - 560 080

For
DEPARTMENT OF SERICULTURE
GOVERNMENT OF KARNATAKA
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DEVAKI JAIN
DIRECTOR

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BACKGROUND

India ranks fourth in terms of global silk production employing about 3.8 million people.[1] Sericulture is a rural-urban based industry which is highly labour intensive. In a country like India where agriculture is the main occupation of the people, improvements in the agricultural production will have direct bearing in shaping the national economy. The annual average growth rate of agriculture between 1966 to 1982 was 2.5 percent. Though this indicates some improvement in agricultural production relatively to the period between 1967-1977 when the growth rate of agriculture was 2.13 percent.

Taking the growth rates of population which was 2.2 percent between 70-71 to 83-84, we are forced to say that the growth rate of agriculture of the order of 2.5 percent may not be sufficient to fetch any benefit to the population which pursues agriculture as the main stay and where disguised unemployment is increasing.

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1. The scope of utilization of silk wastes for providing women with gainful employment: An UNICEF sponsored study - 1983.

So to reduce disguised unemployment and to increase the average productivity of the farmers, some programmes are direly needed. Sericulture can be practised as a cottage industry and this has got a good labour absorbing capacity. Sericulture is practised in about 27,400 villages out of 5,75,700 villages in the country. This indicates 'that' nearly 4.8 percent of villagers are engaged in sericulture.

The prospects for the export of silk goods are bright; hence the production possibility can be increased by improving sericulture. The following statement shows the production of silk in India and its percentage in the total silk production of the world.

PRODUCTION OF SILK IN INDIA

YEAR	POPULATION IN TONNES	PERCENTAGE OF INDIA IN TOTAL PRODUCTION
1965	1634	5.00
1974	2445	5.31
1975	2376	4.87
1976	2812	5.88
1980	3500	7.26

Source: Statistical Biennial, 1978: Central Silk Board

While the national scenario for the production of silk is positive, the production possibilities of silk in Karnataka are still encouraging. The state of Karnataka is one of the major sericulture states in India. The Districts namely Bangalore, Mysore, Kolar, Tumkur and Mandya are well known for the production of silk cocoons.

Realizing the need and significance of improving sericulture in the state, the Government of India had set up Central Silk Board in 1949, and this Board was intended to assist the State Government in the formulation of programmes and policies for sericulture development and advises the Central and State Governments for the development of Silk Industry.

Sericulture in rural areas as economic activity is pursued by all the members of the family, particularly at the stage of silkworm rearing. A great deal of women labour is absorbed into the activity. In a study conducted by the Institute for social and economic change (ISEC) on women labour participation in sericulture, Bangalore; it was specified that the participation rate of hired women in sericulture cultivation in 1983-1984 was 75 percent. The following statement highlights the participation rate of women in sericulture activities in rain fed areas in the years 1981-82 and 1983-84.

YEAR	Hired Female Participation Rate At The Stage Of Cultivation	Hired Female Participation Rate At The Stage Of Rearing Silk Worm
1981-82	90	40.35
1983-84	75	59.38

Source: A seminar paper on Economics of Sericulture in Karnataka - 1985 by ISEC, Bangalore.

In the other study conducted by ISEC, it had been given that the labour absorption ratios of female and male labour for mulberry growing in rain fed areas was 0.25 and in irrigated areas it was 0.44. The corresponding figures for silkworm rearing in rainfed areas was 0.32 and in irrigated areas it was 0.57.

These statistics clearly show that there is considerable female labour participation both at the stage of sericulture cultivation and rearing the silk worms. Keeping in view, the female participation rate, increasing production of silk cocoons and to provide counsellence to the women engaged in sericulture, the Govt. of Karnataka appointed Female Extension Workers in the year 1981 on experimental basis in Kanakapura Taluk of Bangalore District.

THE PILOT PROJECT

The main objective of this pilot project was to provide technical services to women engaged in sericulture. It is the general feeling among the villagers that the women respond well to the female extension workers than to the male demonstrators. Therefore, the Ford Foundation, New Delhi commissioned the Dept. of Sericulture, Govt. of Karnataka to appoint Female Extension Workers in one of the blocks in Karnataka to improve Sericulture by providing technical services through Female Extension Workers. Kanakapura Taluka in Bangalore District was selected for this purpose. There were 8 female extension workers in Kanakapura covering eight chowky rearing centres. The female extension workers were placed in charge of a group of villages covering 100-300 sericulture households. The female extension workers were required to visit each household atleast once in a week providing technical services and training to women.

THE OBJECTIVES

The main objective of the present study is to review the impact of the pilot project in Kanakapura.

METHODOLOGY

For the purpose of the study four villages in Kanakapura Taluk were selected. The total sample consists of 149 households and a detailed questionnaire was canvassed to know the impact of the extension work. Out of the 149 households, 49 were non-pilot households. Comparative study was adopted to find out the impact of extension workers role in assisting the female sericulturists.

The following table shows the villages/households selected in Kanakapura Taluk.

Profile Of The Sample Units Selected

Sl. No.	Name Of The Village	No. of Households Selected
1.	Thamasandra	43
2.	Jogamanahosa Halli	38
3.	Hullibele	19
4.	Nidigallu	49
	TOTAL HOUSEHOLDS	149

SURVEY FINDINGS

Out of 593 acres (237.2 hectares) of land holdings spread over 149 sample households only 89.46 acres (35.8 hectares) were cultivated for Mulberry which was 15 percent of the total land of the sample villages (Table No.3). Among the sample villages selected, 'Thamasandra' village came first in cultivating the land for mulberry with 18.74 percent in the total cultivated land of the sample households.

Another noticeable fact regarding land utilisation for Mulberry was that nearly 58.4 percent of the people were sparing only half and less than half acre of the land for mulberry cultivation. Interestingly the big farmers who happened to have 5 to 10 acres of land are relatively sparing few acres of land than the small scale farmers. This might be due to the farmers pre-occupation with a particular crop-pattern (Table No.4). The households who happened to have the irrigated area between 1 to 5 acres and who cultivated the land for mulberry were only 39 households who constituted 26 percent of the total sample households.

Nearly 71 percent of the surveyed household's lands were situated within a range of one kilometre from the rearing houses. This provides for easy mobility of mulberry leaves from the field to the rearing centres. Among the 149 respondents only 18.79 percent of the households used the services of the chawki rearing centres (C.R.C) and nearly 81.2 percent of the households responded negatively for the question whether they used the C.R.C's services during the previous cycle of the crop (Table-5).

Nearly 59 percent of the Households were rearing the worms at home but away from the cattle shed. Though Chawki Rearing Centres are established with an avowed object of bringing down the mortality of the worms, there is relatively less number of households who used the services rendered by CRC's.

The Distribution of work among the members of the family of 149 households is recorded (Table-6). Excepting the work pertaining to disinfecting the rearing house and equipment, the rate of female participation was not considerable. The participation rate of children (between 10 and 14 years) was significant in harvesting the cocoons and taking care of the mulberry leaves. Marketing the cocoons and money management was completely looked after by the male workers in the family. (Table No-6).

Among the 149 households surveyed nearly 59 percent responded that their harvest of sericulture had not been increased since 1980; only 33 percent of the respondent's harvest had been on increase since 1980; nearly 8 percent of the respondents did not say anything about the prospects of their sericulture harvest since 1980.

Among the 33 percent of the households who responded positively for the growth of crop since 1980, more than 16 percent of the households attributed that the growth in harvest to the quality of stains they used. Among the other causes for the growth of harvest, marketing facilities were least considered as one of the causes for the improvements in harvest since 1980 (only 0.67 percent of the respondents attributed the growth of harvest was due to market facilities). But a great chunk of respondents (nearly 68%) could not give information on this aspect (Table-7).

The stain frequently used was 'multivoltine' type. A comparison between 1980 and 1988 shows that the use of 'multivoltine' came down but the usage of Bivotine type of layings increased. Nearly 76.5 percent of the households were using multivoltine type of layings in 1980, but its percentage came down to 64.4 percent in the year 1988. The corresponding percentages

for Bivoltine type in the years 1980 and 88 were 2.68 and 17.45. This shows that there is a rising trend in the usage of Bivoltine type of laying in the sample villages. Cross breed type of layings too showed an increasing trend. (Table No-8).

Information with regard to cleaning the beds of silkworms was collected with reference to two periods of time (1980 and 1988). The number of households who used to clean the bed of the silk worms once in a day increased from nearly 49 percent in 1980 to 78.3 percent in 1988, representing 29.3 percent growth (Table No-9). Nearly more than 18 percent of the households cleansed the beds once in two days. But the disease free layings need cleaning on an average once in a day. This is a desirable change that can be noted after the appointment of female extension workers.

IMPACT OF FEMALE EXTENSION WORK

Among the 149 households selected 85 percent of the households were illiterate and only 33.5 percent of the households received guidance from the Female Extension Workers and nearly for the rest of the households guidance given by Female Extension Workers was not needed. The percentage of this category of the households constituted more than 66.

A sad but inescapable fact is that among the 50 households who received guidance from the female extension workers only 30 households ie 20.1 percent of the households found the guidance given by the female extension workers useful. Nearly 32 percent of the households received guidance from the male demonstrators also. Among the reasons specified by the respondents, the significant reason was that the guidance given by the female extension workers was not helpful to increase the production of cocoons. This may be due to the prevelence of illetaracy among the households and due to their pre-occupation with a particular pattern of harvesting the crop. (Table No.10)

It can be noted that more than 38 percent of the respondents showed their preference for female extension workers and nearly 60 percent of the respondents expressed that their choice to have guidance from the female extension workers was due to easy

communication facility and accessibility with the female extension workers.

Interestingly, only 18 percent of the households followed immediately the suggestions extended by the female extension workers. A great chunk of the households did not say anything clearly about the extension facilities offered by the female extension workers.

Improvements in the income levels of the respondents were also observed. The following statement shows the improvements in income levels of the respondents in 1980 (i.e before the appointment of FEW's) and in 1988 (after the appointment of FEW's). The percentage growth of income from sericulture in 1988 over that of 1980 was 4.38%.

Improvements In Income Levels

1980	1988	(in Rupees)
Mean Income From Sericulture	Mean Income From Sericulture	Percentage Growth
12670.25	13225.00	4.38

The above income figures in two different time periods

represent the mean income of the 149 households. One can note that there is increase in income levels of the households but the percentage growth in income is not that much significant if we take into consideration the time period of 8 years. To this extent, one may find that the improvements in the income levels of the households are not significant even after the appointment of Female Extension Workers.

The following statement shows the improvements in sericulture - after the appointment of female extension workers - in terms of number of layings and harvests:

	1980	1988	PERCENTAGE GROWTH
Layings	210.18	243.99	16
Crops	141.06	163.75	16

There is a significant increase in the number of layings used and in the number of harvests per year. The increase in number of layings is due to the easy accessibility of the farmers to the sericulture network established in their vicinity.

CONCLUSIONS

The following conclusions can be drawn from the present household survey.

1) Among the households surveyed nearly 85 percent of the households were illiterate and the majority of the women sericulture activists did not respond positively for the extension services rendered by the female extension workers.

2) The Households who did not receive guidance from the Female Extension Workers (66 percent of the Households) felt that the guidance from the extension workers was not helpful for them. This is largely due to the belief of the households that the growth in the crop depends more on the quality of the layings and the mulberry leaves.

3) Another inescapable inference that emerges from the survey is that even though the female extension workers are expected to assist the female sericulturists, the activists of sericulture are largely manned by the man in the house. Thus men are the decision makers. The participation rate of women in sericulture work was considerable in disinfecting rearing house and equipment, feeding worms and cleaning the bed. The observation in the field supported the hypothesis that the participation of women in the works like taking care of mountages and harvesting the cocoons were also significant.

4) The percentage growth of income from sericulture received by the Households was 4.3. The growth in income is marginal if we take 8 years period into consideration (1980 to 1988). This marginal growth may be due to the revealing of incorrect income figures by the respondents, besides this, one should make an allowance for price rise. There is a significant improvement in the number of harvests undertaken. On an average they registered a growth of 16 percent.

5) After the appointment of female extension workers there seems to be a remarkable improvement in rearing practices of the sericulturists, particularly in feeding and cleaning the worms.

TABLE 1

Family Structure of the Sample Villages

Sl. No.	Family Structure	No. of Households	Percentage of Households
1	Joint Family	43	28.9 %
2	Nuclear Family	66	44.3%
3	Extended Family	40	26.8%
	TOTAL	149	100

TABLE 2

Educational Status

Category	Households	Percentage	Households	Percentage
Illiterate	127	85.00	89	59.74
Primary	18	12.10	40	26.84
Secondary	0	00.00	07	4.70
PUC & above	4	2.90	13	8.72
Total	149	100.00	149	100.00

TABLE 3

Percentage of Land Used for Mulberry Cultivation
In The Selected Sample Villages

Name of the Village	No.of House-holds selected	Total land of Respondents (in acres)	Land used for Mulberry (in acres)	Percentage of land used for mulberry
Thammasandra	43	150	28.11	18.74
Jogmanahosalli	38	131.13	22.96	17.51
Hullibele	19	137.33	12.03	8.76
Nilagallu	49	174.54	26.36	15.10
Total	149	593.00	89.46	15.0

TABLE 4

Land Owned and Land Utilised for Mulberry Cultivation - Category-wise

Total Land-holding (in acres)	Households	Percentage	Land used for mulberry (in acres)	House-holds	Percentage
1/2 and less than 1/2 acre	10	6.70	1/2 and less than 1/2 acre	87	58.38
1/2 - 1 acre	12	8.05	1/2 - 1 acre	36	24.16
1 - 5 acre	89	59.70	1 - 5 acres	21	14.10
5 - 10 acre	21	14.00	5 - 10 acres		
10 - 15 acre	10	6.70	10 - 15 acres		
15 + acre	2	1.42	15 + acres		
Not responded	5	3.43	not responded	5	3.36
	149	100.00		149	100.00

TABLE 5

1. Chowki Rearing Centres used during the Last Cycle in 1988

Sl.No		No. of Households	Percentage of Households
1	Yes	28	18.79
2	No	121	81.21

2. Distribution of Households according to Place of Rearing

		No.of Households	Percentage of Households
a.	At home, near the cattle shed	23	15.44
b.	At home, away from cattle shed	88	59.06
c.	Separate rearing house	9	6.04
d.	Someone else's house	1	0.67
e.	Not applicable	28	18.79
	TOTAL	149	100.00

TABLE 6

Distribution of Work Among the Members of the Family

Sl.No	Nature of Work	Male	Female	Children (below 14 years)	Not responded
1	Land Preparation	89	1	58	1
2	Application of Fertilizers	72	1	75	1
3	Leaf picking, transport and storage	18	19	112	–
4	Cutting leaves	29	11	109	–
5	Disinfecting, rearing house and equipment	36	70	43	–
6	Obtaining layings/ brushing	85	5	59	–
7	Feeding worms and cleaning bed	6	17	126	–
8	Monthly care and harvesting cocoons	32	2	115	–
9	Marketing	146	1	2	–

TABLE 7

Increase In Harvest Since 1980			
Sl. No.	Answers	Year 1980	Percentage of Households
1	Yes	49	32.89
2	No	88	59.06
3	Not known	12	8.05

Reasons for growth in the Harvest of Sericulture

Sl.No	Reasons for Increase of Harvest	No.of Households	Percentage of Households
1	Difference in strain/good quality eggs	24	16.11
2	Improved variety of leaves	3	2.01
3	Improved farming methods	6	4.03
4	Increase in mulberry land	7	4.69
5	Use of modern methods in silkworm rearing	6	4.03
6	Enhanced marketing system	1	0.67
7	Others	2	1.34
8	Not specified	100	67.79

TABLE 8

Strain Frequently Used

Egg	1980 (No.of Households)	Percentage	1988 (No.of Households)	Percentage
Bivoltine	4	2.68	26	17.45
Multivoltine	114	76.51	96	64.42
Cross breed	7	4.7	15	10.07
Not known	10	6.71	12	8.06
Not available	14	9.4	-	-
TOTAL	149	100.00	149	100.00

TABLE 9

Information pertaining to Cleaning the Silkworm Beds

		Years			
Sl No	Frequency	1980	% of the Households	1988	% of the Households
1	Once in a day	73	49.0	116	77.8
2	Once in two days	43	28.9	27	18.1
3	Once in three days	16	10.7	4	2.7
4	Not specified	17	11.4	2	1.4
	TOTAL	149	100	149	100

TABLE 10

Guidance by female extension workers to Sericulture Households

Sl.No	Particulars	Household	Percentage
1	Guidance received	50	33.56
2	Not needed guidance	99	66.44
3	Guidance useful	30	20.13
4	Guidance not useful	20	13.42
5	Future guidance needed	32	21.48
6	Future guidance not needed	02	01.34
7	Extension workers preferred		
	Male only	4	02.68
	Female only	92	61.74
	Both	48	32.21
	Not specified	05	03.36

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