



Income Generation in Agriculture vs. Sericulture: A Farmer-Level Analysis in Anantapur District.

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Abstract

Sericulture is a significant rural and cottage industry in India, offering substantial potential for income generation compared to agriculture. This study provides a comparative analysis, highlighting that sericulture yields higher earnings than other cash crops like cotton and Groundnut. While most agricultural crops are harvested once or twice a year, sericulture allows for 4-5 harvests annually. For example, the combined annual net income from cultivating cotton in monsoon, Groundnut in the autumn season, to Rs.90,900 and Rs.60,000 whereas sericulture generates Rs.9,24,000 per hec under irrigated conditions. Additionally, sericulture provides consistent employment, helping to curb rural-to-urban migration and reduce urban overcrowding and pollution. By creating jobs and improving rural livelihoods, sericulture plays a crucial role in rural development and enhancing the quality of life in villages.

Keywords

Sericulture, Agriculture, Economic Analysis, Cost and returns, Gross return, Net profit.

Introduction

Sericulture, the practice of rearing silkworms to produce silk, has thrived as a cottage industry in countries such as Brazil, China, France, India, Italy, Japan, Korea, and Russia. China and India together account for over 60% of the global silk production. In India, sericulture has significantly advanced, particularly during the 1980s and 1990s, with contributions from the Central Silk Board, universities, and research institutions playing a crucial role. These advancements, along with effective dissemination of research findings, have expanded sericulture into various agro-climatic regions. Over the past two decades, it has grown into a profitable enterprise, providing sustainable employment and helping alleviate poverty among small-scale farmers. The industry supports diverse groups, including farmers, weavers, reelers, twisters, wage earners, and market intermediaries, predominantly in rural and semi-urban areas. According to Jolly (1988), sericulture is a successful rural industry because it provides year-round employment for family labor and delivers consistent income, even on small or medium-sized farms. Similarly, Balasubramanian (1986) noted that even small farmers can earn significant income from sericulture, with an irrigated acre generating a gross income of Rs. 14,000, while two acres of dry land can provide an annual net income of Rs. 3,000. Reddy

(1985) [4] reported that a farmer can earn Rs. 19,997 from one acre of irrigated land. Reddy et al (1986) [5] reported that sericulture as an integrated enterprise with moriculture generates two times more employment than alternate enterprises. Sericulture serves as an excellent supplementary activity for rural individuals involved in the practice. It offers a quick return, often within a month, making it an appealing option for both sericulture and agriculture farmers, who can pursue it alongside their other crops. However, before adopting a multi-farming system, it is important to evaluate the income potential of both agriculture and sericulture. Currently, many sericulture farmers, even in traditional sericulture regions, are hesitant to continue the practice. There have been reports of farmers abandoning mulberry cultivation in favour of other crops. This study aims to assess the current state of sericulture in comparison to other crops, particularly in terms of income generation.

Materials and Methods

Data for the study was gathered through personal interviews with selected cotton farmers and Groundnut farmers and sericulture farmers in the study area. A detailed questionnaire was prepared to collect information from the sample farmers, aligned with the study's objectives and scope. The study was conducted in the Anantapur district of Andhra Pradesh from 2021 to 2022. Data was collected by conducting interviews with 50 respondents from Akuthotapalli Block in Anantapur District using efficient survey. In the present study, efforts were made to evaluate the Impact on the income generation of the farmer beneficiaries. The next step involved selecting respondents from a comprehensive list of farmers from the chosen villages, along with details on their landholdings, with the help of subject matter experts. A complete overview of the selected district divisions, including the status of cotton cultivation areas and production, was prepared. From these divisions, one with a larger area dedicated to cotton and diversified farming was selected. Additionally, all blocks/mandals within the division were listed, and two with the largest cotton and Groundnut cultivation areas were chosen. Using probability proportional to size sampling, 50 farmers were randomly selected.

Results and Discussion

Deals with the analysis and interpretation of collected data, which were collected from the sample of 50 farmer beneficiaries, through the pre-tested structured schedule. Calculations were made through absolute changes in income generation of farmers. In the production process, certain inputs (raw materials) are transformed into outputs. In agriculture, inputs like seeds, manure, fertilizer, water, and plant protection materials are converted into various outputs. In cotton production, the associated costs can be categorized into two main groups: operating costs and overhead costs. Operating costs, also referred to as variable or labour costs, include inputs that fluctuate with production, such as seeds, insecticides, plant protection measures, fertilizers, human labour, machine labour, and bullock labour. Overhead costs, or fixed costs, encompass expenses like equipment and machinery depreciation and rental charges. Additionally, operating costs can be further classified into labour costs, including human, machine, and bullock labour, and material costs, which cover seed, fertilizer, irrigation, and plant chemical expenses. This study aimed to assess the income generation rate across various integrated farming systems. It was conducted in selected villages of the Anantapur district, Andhra pradesh. The findings from different crop systems are presented in the tables below.

Cotton (in monsoon)

For one hectare plantation of cotton Rs.90900.00 is required for the cost of production

During the production process, certain inputs, such as raw materials, are transformed into outputs. In agriculture, inputs like seeds, manure, fertilizers, water, and plant protection agents are converted into various outputs through the cultivation process. The cost of procuring these inputs in the cotton production process can be separated into two categories: operational cost and overhead cost.

Table 1: Cotton in monsoon season

For one hec of land	Cost(rs)
1. Seed	5000.00
2. Land preparation	5000.00
3. Fertilizer and manures	7200.00
4. Insecticides	7100.00
5. Human labour	25,000.00
6. Family labour	2300.00
7. Machine labour	7300.00
8. Over head cost	32,000.00
TOTAL COST	90900.00

Yield and income from cotton cultivation

Cost of cultivation (Rs. /ha)	90900.00
Yield (q /ha)	27
Price (Rs./q)	4500.00
Gross returns (rs./ha)	121500.00
Net returns (rs./ha)	30600.00

Groundnut (in autumn)

For one hec plantation of Groundnut Rs.60000.00 is required for the cost of production

During the production process, certain inputs, such as raw materials, are transformed into outputs. In agriculture, inputs like seeds, manure, fertilizers, water, and plant protection agents are converted into various outputs through the cultivation process. The cost of procuring these inputs in the Groundnut production process can be separated into two categories: operational cost and overhead cost.

Table 2: Groundnut in autumn season

For one hec of land	Cost(Rs)
1 . Seed	7000.00
2. Land preparation	5000.00
3. Fertilizer and manures	10,000.00
4. Insecticides	3,000.00
5. Human labour	15,000.00
6. Family labour	5,000.00
7. Machine labour	7,000.00
8. Over head cost	8,000.00
TOTAL COST	60,000.00

Yield and income from Groundnut cultivation

Cost of cultivation (Rs. /ha)	60,000.00
Yield (q /ha)	17
Price (Rs./q)	5500.00
Gross returns (rs./ha)	93,500.00
Net returns (rs./ha)	33,500.00

Sericulture crop (cocoon)

The present study shows that we get 12 crops in a year in one hec land of irrigated condition. Cocoon yield (kg/acre) @ 55 kg/100 DFIs (Irrigated) (Irri-5 crops / years 400 DFIs / crop)

Table 3: Sericulture in all seasons (cocoon)

For one hec of land	Cost(rs)
1. Saplings	30,000.00
2. Land preparation	10,000.00
3. Fertilizer and manures	30,000.00
4. Insecticides	1000.00
5. Human labour	15,000.00
6. Family labour	5,000.00
7. Machine labour	10,000.00
8. Disinfectants	10,000.00
9. Mountages	10,000.00
10. Transportation	25,000.00
11. Rearing cost (Irri-5 crops / years 400 DFIs / crop)	3,00,000.00
12. Overhead cost	25,000.00
TOTAL COST	4,46,000.00

Yield and income from sericulture crop (cocoon)

Cocoon yield (kg/acre) @ 55 kg/100 DFIs (Irrigated) (Irri- 12 crops / years /hec) (400 DFIs / crop)	2640 kg
Cost of cocoon	350/kg
Gross income	9,24,000.00
Net income	4,78,000.00

Conclusion

Sericulture can be compared to other crops such as cotton,groundnut which is grown twice a year, and which is cultivated once annually, with each crop cycle lasting around 90-180 days. The combined net income from these crops, during both the summer and rainy seasons, and amounts to approximately Rs.90,900 and Rs.60,000. This is still lower than the income from sericulture, which generates Rs.9,24,000 per hec under irrigated conditions. According to Roy et al. [16], sericulture is also a significant employment-generating industry in West Bengal. The current study demonstrates that even cultivating three different crops annually—cotton twice (in the summer and rainy seasons) and Groundnut during the onset of winter—does not yield as much profit as sericulture. This comparison suggests that sericulture has a higher potential for income generation compared to traditional agricultural crops at the farmer level.

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