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COCOON E- MARKETING IN KARNATAKA

SATISH G

Research Scholar

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Dr. H. M. CHANDRASHEKAR

Director

Institute of Development Studies

University of Mysore, Mysore, Karnataka

Abstract

Over the generations Sericulture has become a mainstay of reliable economic dependency and Sustainable Rural Livelihood. Rural employment generation and inclusive development is readily addressed by Sericulture and is a significant Rural Transformation Sector. The farm and non-farm activity creates 60 to 70 lakh employments every year mostly in rural India. Sericulture offers scope to transfer wealth from high end urban customers to poor artisan classes. Sericulture which was considered as a subsidiary occupation in the past is gaining importance as major activity. The state has the entire necessary infrastructure for accelerated sericulture development in the state. An Attempt were made to analyse the Cocoon e- Marketing in Karnataka in this study.

Keywords: Cocoon, e-marketing, marginal farmer

INTRODUCTION

Sericulture is an important agro based cottage industry involving both on farm and off farm avocation. It is also agro-based, labour intensive, export oriented commercial activity. In several southern districts of the State the sericulture is mainstay and livelihood of small marginal farmers and weaker section of the society and a Traditional source of livelihood. About 13 to 14 lakh families in the state are directly dependent on sericulture in the form of mulberry cultivation, cocoon rearing and raw silk reeling, twisting, weaving etc. It is estimated that one hectare of Mulberry provides year long continuous job for 13 persons. Factors like urbanisation,

depleting water table and rural distress have also adversely affected sericulture. Karnataka with its ideal climatic and Soil conditions is the pioneering Mulberry Silk producing state in the Indian Union. Karnataka contributes 11952 Metric Tonnes, nearly 50 per cent of total annual national Mulberry Silk production 25344 Metric Tonnes. Central Silk Board (CSB) is the apex national institution that could meaningfully contribute for the development of Sericulture.

Infrastructure for Sericulture Development

Commencing from 1970s Karnataka has implemented several projects to usher in scientific and sustainable Sericulture development by

establishing infrastructure and resorting to systematic capacity building both in mulberry cultivation, silkworm rearing practices and cocoon reeling. During later part of 1970s under the GOI sponsored Integrated Sericulture Development project (ISDP) emphasis was laid on Extension for technology transfer and promotion of chawki rearing centres (CRC). During 1980s under World Bank aided Karnataka Sericulture Projects I & II from 1980 to 1988 (KSP) approach has been for area expansion under mulberry to bring in new farmers and Sericulture Infrastructures like the grainages, Technical Service Centres (TSC) and Seed Farms. The Cocoon markets were also established in major reeling centres. During this period the Karnataka State Sericulture Research and Development Institution (KSSRDI) was established to undertake operational research and technology development and also Mulberry and Silkworm race improvement. Simultaneously the Dutch assisted on farm development programme was also implemented with focus on rearing houses, reeling sheds and the model chawki rearing centers (MCRC). During 2000 to 2005 the Swiss Development Corporation assisted Seri 2000 project was implemented with focus on expansion of sericulture in non traditional districts of the state. Sericulture developmental Trainings were imparted to the farmers and Reelers in new areas with emphasis on Bivoltine Silk production. Under the Seri 2000 about 600 Quality Clubs (QCs) have been established and the quality clubs were provided with Rs 10,000 one time seed money grants for each. During 1998 to 2007 for nearly a decade the Japan International Cooperation Agency (JICA) assisted project was implemented in two phases to promote Bivoltine (BV) Sericulture. Emphasis has been on BV Silkworm Racial improvement, development of Mulberry Varieties and Technology transfer to improve quality

Bivoltine production. Concerted efforts were undertaken to transfer BV technology and capacity building including BV reeling. Simultaneously the GOI sponsored Catalytic Development Project (CDP) has been implemented from 1997 through this decade with main focus on Bivoltine Sericulture and Reeling Development through the Cluster approach.

Karnataka has well established Multivoltine and Bivoltine Seed areas. They cater to the demand of parental seed cocoons required for the production of Cross Breed (CB) and Bivoltine (BV) hybrid disease free layings (DFLs). The above efforts have boosted the raw silk production to 9236 MTs during 1997-98 and currently it is around 11500 MTs. The productivity has increased despite area reduction under Mulberry. The state has the necessary infrastructure for accelerated sericulture development in the state. Sericulture offers very good potential to contribute towards Doubling Farmer Income and combat Rural Agricultural Distress.

Cocoon production, Marketing Reeling and Agribusiness

a. Cocoon Production

Depending on the mulberry growing season, large numbers of farmers bring about 100 -165 metric tonnes of Cocoons to market for sale every day. The Sericulture Department, Government of Karnataka, has established the Government Cocoon Markets to handle Cocoon sale transactions. Of the total 35 Cocoon Markets established in different Silk producing areas of the state 10 are major markets. These 10 markets handle almost 90 per cent of the Cocoon Sales. The cocoons being highly perishable have to be transacted preferably the same day the farmers bring the cocoons to the market. The Cocoon market sale transaction takes place round the year all 365 days except on the Independence Day and the Republic Day.

b. Silkworm Seed Supply and Chawki centres

The state has a very vibrant scientific seed supply mechanism catering to uninterrupted round the year supply. The state has organised both Pure Mysore and Bivoltine seed areas to produce parental seed cocoons on scientific lines. Both DOSK and CSB are coordinating the efforts. Separate seed cocoon markets are established to help seed farmers. Private Registered Seed Producers are having a major share in Silkworm Seed Supply. The Department facilitates the efforts through the Seed Officers. The network Registered Seed Producers (RSPs) and Chawki Centres offer uninterrupted Silkworm disease free layings (DFLs) for quality Cocoon Production.

Government Cocoon Markets

Of the total 35 Cocoon Markets established, in different Silk producing areas of the state, by the Sericulture Department Government of Karnataka, 10 are major markets. These 10 markets handle almost 90 per cent of the Cocoon Sales. Depending on the mulberry growing season, every day large numbers of farmers bring about 100 -165 metric tonnes of Cocoons for sale. Large numbers of Reelers, nearly 3500, reelers buy Cocoons daily for further processing to take out the raw silk. Cocoon transaction takes place in markets over a short span of 20 to 45 minutes of bidding window. Annually cocoons worth INR 15000 to 16000 millions are transacted. Traditionally cocoons were transacted in manual auction ever since the Government Cocoon Markets were established during 1980s. The manual auction involved shouting the bid price. Highest knocked down bidder stand to buy the Cocoons. The manual bidding in cocoon market used to be very chaotic noisy and no transparency. Several malpractices were attributed. Market officials could knock down cocoon sales to dominant reelers arbitrarily. There was

no scope for a fair cocoon price discovery. The farmers were never convinced of the price the cocoons fetched and their marketing satisfaction was very low. The perishable nature of Cocoons made the farmers vulnerable to accept the sales. As far as the reelers a free market access was a major issue. Most occasions the dominant reelers subtly intimidated other reelers from participating in bidding. Both farmers and reelers remain very restive during transactions. Under the circumstances especially the farmers desired a transparent transaction process. The bidding transparency has a direct bearing on economic as well as psychological satisfaction of both the farmers and also the reelers. Keeping this in view cocoon e auctioning is rolled out from 16 Feb 2015 in Kollegal Cocoon Market and subsequently extended to all the major Cocoon Markets in Karnataka. Recently during Jan 2021 e weighing and online payment is rolled out in Shidlghatta Cocoon Market on pilot basis.

Cocoon Reeling

Karnataka has a tradition of reeling, the state has all different types of Reeling devices namely Charaka, Cottage Basin, Multi End Reeling and also Automatic Reeling Machines. 90 per cent of the state Raw silk production comes from Charaka and Cottage Basins which engage highly skilled reelers. They are traditional manual units producing varying quality standards solely dependent on the skill of the reeler. Charaka silk although not gradable is having its own niche market mainly in weaving centres of southern India. Cottage Basins produce finer to coarser Raw Silk ranging from 14/16 to 35/40 denier, catering to handloom sector mainly in weaving units of Northern India and both are used as Weft. Whereas Multi End Units are improved version of Cottage Basin and produce Bivoltine Gradable Raw Silk used for both Weft and Warp. The Automatic Reeling

Machines are highly Sophisticated and 400 End units can handle 700 Kgs of Bivoltine Cocoons daily with production capacity of 110 to 115 Kgs raw Silk per day. The State is Promoting ARM and MERM units to create additional Bivoltine reeling capability. The ARM Silk is of International Grade and can substitute imports. Thus it is an economic activity of significance to both farmers and reelers. Reelers add further value, in the form of raw silk, of another INR 20000 millions.

Cocoon and Raw Silk Price Stabilisation

The Cocoon market price fluctuation and raw silk price fluctuations have often adversely affected the systematic sericulture progress. Frequent cocoon price crashes always generated farmer unrest. During 2015-16, coinciding with customs duty reduction from 15 to 10%, the sericulture market situation remained unfavourable leading to Farmer and Reeler unrest. The farmers and reelers expectation has been that the market operations should cover the production costs. In the background to examine "The cocoon, raw silk Production prices and marketing strategies" a technical committee headed by Dr H Basavraj Prof. Agriculture Economics, UAS Dharwad, was constituted. The technical committee has gone into various aspects of sericulture and submitted the report. Technical committee has examined issues of production cost visa-visa remunerative prices. The committee report is a land mark reference for Sericulture policy formulations in Karnataka, which is also worth emulating by other states.

Successive Governments have taken measures to assure the farmers and the reelers by resorting to measures like production incentives both for Cocoon and the Raw Silk. Government Cocoon Markets and Silk exchanges have been established to regulate and control marketing practices to help the farmers

and reelers. In order to provide institutional support to Silk marketing the state has established the Karnataka Silk Marketing Board (KSMB) and about 10 Silk Exchanges for Raw Silk transaction. The state has also constituted the Price stabilisation Fund (PSF) to provide market and price stabilisation support. The market cess of about Rs 25 crores contributed by the reelers in the Cocoon Markets form the source of the Price Stabilisation fund. Previously the Price stabilisation Fund Authority (PSFA) was also established during 1980s to 2000, which is now not functional.

More recently based on Basavaraja Committee Report the state Government has sanctioned Price protection Scheme for ensuring remunerative price for cocoons in case the Market prices are below the production cost. Similarly the PSF is revived. To avoid distress sales the Cocoon Bank programme initiated.

Subsidiary Agribusiness out of Sericulture

The agribusiness opportunities in mulberry and Silkworm rearing inputs and disease pest control applications are abundant. Similarly pupal waste utilisation and processing also safe disposal of reeling waste and cut coon value addition and artefacts are few possibilities.

I. Importance of the Study

The state has the entire necessary infrastructure for accelerated sericulture development in the state. However the sericulture industry, in the state, is often suffering setback due to the unfavourable market forces. The expectation is that the marketing mechanisms have to be streamlined so as to provide a favourable atmosphere for the promotion of sustainable sericulture.

In order to effectively address this impediment and meet the expectations of the Sericulture Famers the Sericulture Department Government of Karnataka developed and deployed Silk Cocoon

auction automation application “e-Haraju”. This was rolled out on 16 Feb 2015 in kollegal Cocoon Market and extended to other major Cocoon Markets in phases. It is a technology driven real time dynamic bidding platform enabling market transactions. Considerable volumes of valuable Cocoons are transacted over a short span of 30 to 45 minutes. The buyers using android or ios devices offer e-bids for the Cocoon lots of choice. The Cocoon lots receive several bids. The system provides for a real time dynamically interactive transparent bidding process amongst the participating buyer bidder Reelers. It is designed to handle enormous simultaneous transactions. The system is so designed to capture effectively the instinctive emotions and competitive buyer spirit in a peaceful atmosphere. The e-Haraju is a Market specific local application. Every bid received is displayed on panels in the markets for the Farmers to view. Cocoon lots are sold to the highest bidder with due process of Farmer acceptance electronically. The e-auction has eliminated the Cocoon Market malpractices leading to fair cocoon price discovery. It opened the free market access providing equal opportunity irrespective of social and economic hierarchies of the reeler bidders. The e-Haraju received the Karnataka state e-governance award 2016-17 under “Citizen Centric Services Delivery” for outstanding performance. Recently during Jan 2021 e weighing and online payment is piloted in Shidlghatta Cocoon Markets.

Cocoon e Auctioning “e Haraju”

Traditionally the Cocoon transactions in the Government Cocoon Markets took place manually which often lacked transparent bidding and several malpractices were attributed. Highest knocked down bidder stand to buy the Cocoons. The manual bidding process also very cumbersome and lot of confusion prevailed in the Cocoon

Markets during the sale process. The inherent defective arbitrary nature of manual bidding process with human element deprived the Farmers of a fair price discovery. Market accessibility was a major issue for innocent Coon Reeler buyers. Most occasions the strong Reelers used to intimidate other Reelers from participating in the manual bidding. Both the Farmers and the innocent Reelers were in a disadvantageous position. The market satisfaction level was very negative both on Cocoon selling Farmer and Cocoon buying Reeler. In the above background there was a constant endeavour to come out with a system which removes the disadvantages to improve the marketing efficiency. The technology driven e-automation has been the outcome of the shared felt need of the Farmers and the Sericulture Department.

The cocoon e-auction automation process flow

Farmer and Reeler Registration

- Basic information for database

- Bank Account

Registration

- Assigning Reeler user ID
- Download and Installation

of e-Bid App

- Cocoon Arrival and

Inwarding

- Assigning e-lot number
- Issue of e-bid slip
- e-sale List generation
- e-Bid
- Reeler User ID Activation

by Password

- Login Screen on the

Andriod IoS Devices

- On Devise Selection of e-lots for bidding by Reelers

- Offering e-Bids for the selected lots

- Green and Red Font

Display

- Refresh to know current higher e-Bid value

- Continued e-Bid offers

○ Bid Value Display in the Market

○ Flash indicating e-bid closure remaining 5 minutes

○ E-bid closure

○ Cocoon Lot wise Highest

Bid Value Display

○ Farmer Acceptance

• After e-bid Farmer acceptance

○ Cocoon lot Sale

confirmation

○ Cocoon weighment

○ Bill generation

○ Bidder Wise Aggregated

Sale value Receipt

○ Sold Cocoon Lot Exit in favour of highest bidder

The sericulture department developed the Cocoon e-auction user manuals to educate the Farmers, the Reelers and also the Cocoon Market officials.

Government Cocoon Market e-bid Modules

The e-Haraju comprises of 3 primary modules namely; the Application, Interphase and Access layer.

Application Layer

Hosts e-Haraju core engine to facilitate real-time bidding and exposes API for applications and admin interface to manage whole cocoon auction process. This module consists of procedures listed below;

• Core bidding engine integrates with application and database Layers

• API Functions to facilitate with mobile APP for data request

• Facilitates functionality of admin module interface with various functionalities of server

Interphase layer

The bidder reeler The constantly changing “Green” and “Red” font bid value displayed on their bidding devices convey to the bidders the status of bids offered by them. System is designed to handle enormous transactions simultaneously. The system is so

designed to capture effectively the instinctive emotions, buying mood and competitive spirit of the Cocoon buyer in a peaceful atmosphere.

Objectives of the study

Objectives of the research topic are as follows

1. To study the trend in Mulberry, Cocoon Production and Productivity in Karnataka

2. Examine the institutional marketing mechanisms to promote viable Cocoon production in Karnataka

3. To study the adoption of cocoon e-marketing in Ramanagaram and Sidlaghatta Government Cocoon Markets.

4. To examine the Cocoon price fluctuations in Ramanagaram and Sidlaghatta Government Cocoon Markets.

5. To assess the Bidding process and the Price discovery effectiveness and diagnose problems in cocoon e-marketing process in the study area.

6. To suggest the efficient service delivery system with no major structural reorganization of existing Cocoon Markets system.

Research Methodology

Data collection and Research Methods

This study is based on both primary and secondary data. The primary data will be collected from mulberry growers and cocoon reelers buyers and hierarchical Cocoon Market officials by administering the questionnaire. For the study 500 farmers from and 200 reelers and 20 cross sectional hierarchy of Cocoon market Officials in the two Cocoon Markets of Ramanagara and Sidlaghatta has been interviewed. Selection of the farmers and villages was based on the Cocoon lot size upto 40 Kgs, 40 to 60 Kgs 60 to 80 Kgs and 80 to 100 kgs and above 100 kgs of Cocoons transacted by the farmers during a year in the Cocoon markets so that the small medium and big sericulture farmers covered.

The time series of secondary data on the area, production and productivity of mulberry were obtained mainly from the sericulture Department, Directorate of Economics and Statistics, Bangalore and The Central Silk Board that are engaged in production, marketing and export of cocoon products in the state in particular and for all India level in general. In addition, the secondary data from the published books, journals, research papers, seminar volumes, leading newspapers and authorized websites will have been collected.

Statistical Tools and Techniques

The systematic statistical tools and techniques has adopted to draw definite and precise conclusions on the study. The Growth Equation Model will be adopted to determine the growth trends of the cocoons in the study area. The sample frequency and percentage analysis were adopted to facilitate the descriptive account and interpretation of the survey data, from the farmers interviewed and the SPSS v.22 used to draw the Frequency and percentage to assess the trends and associations of the data variables. In addition to this, the tables, graphs and charts were generated from the analysis of both the primary and secondary data collected to draw appropriate inferences. The SPSS v.22 were utilized to assess the Compound Growth Rate, Correlation Analysis, Markov Chain Analysis, Benefit Cost Ratios (BCR), and ARIMA technique were adopted in the study.

Scope and Limitations of the Study

The study is confined to Ramanagaram and Shidlghatta Cocoon Markets in Karnataka. The inferences will be based on primary and secondary data.

Gregory (2006), has explained the analysis that brings out the differential levels of manifestation of socio-economic mobility among different sections of rural people who have adopted or are associated with

sericulture. The impact of sericulture, with a high degree of change in living conditions, has been highly evident among progressive sericulturists, who mostly, but not always, belong to the medium land-holder category. The marginal and small land-holding categories, too, experience the impact of sericulture and have been on the path of socio-economic mobility by improving their labour status and stabilising their economic life. Appropriate interventions and strategic approaches would go a long way in converting this strategy as one of the sustainable forces of rural development in India.

Geetha and Indira (2011), have explained Women's involvement in sericulture activities is centuries old. Rural women prefer sericulture because it fits easily into their daily routine, Silkworm Rearing by Rural Women in Karnataka enabling them to alternate between household work, childcare, etc., and provides an economic activity that requires year round work with a regular income. It bestows on them the status of self employment and an opportunity to build social networks and access to SHGs, which is their only source of credit. Considering the volume of women's involvement, the sericulture industry needs to look at them as active partners and not just as economic participants for the enhancement of production. Thoughtful and systematic assistance would greatly alleviate the poverty of these hard-working and capable women.

Orhan et al (2011), have explained sericulture in Turkey. Sericulture which gave the name The Silk Road to the old world's trade routes between east and west has an important role at financial activities for centuries. Sericulture production was begun in Anatolia which is Asian part of Turkey in A.D. 552 during Byzantium Emperor of Justinianus. The city of Bursa became a textile city which was famous for silk and

silk trade centre. Sericulture has begun at the same period in Amasya that is one of the Ottoman cities. Sericulture and cocoon cultivating were made in Mugla the city has eligible climate condition to cultivate mulberry. In Turkey the silk was woven by using simple bench as a family work.

Eswarappa (2013), have explained a sociological understanding of the sericulture development, as studied by the scholars of the different disciplines across the states of India, has been provided. Sericulture is best suited to a country like India, where manpower and land resources are in surplus. It generates direct and indirect employment in various ways. More and more farmers in India have taken up sericulture activity and this activity, which was once confined to only five states, has spread to almost all states of India. Though this finding cannot be generalized across societies and places, the success story of Udaylakshmi and other women in the study area needs to be replicated in other areas as examples of the outstanding role of women in triggering community development.

Chandan et al (2014), has explored several dimensions of its growth pattern during the planning periods of West Bengal. A field level survey in the major silk producing district of West Bengal has exposed few factors like household size and male hired labourers which are positively raising the level of average employment in the sericulture farms, while education level acts as a significant reducing factor, along with mandays involved with the activities. In the absence of institutional apathy and well-linked credit system in the remote rural areas coupled with financial illiteracy of the rural artisans, the objective of development of artisanal silk industry in West Bengal seems to be far away.

Ahmad and Choure (2014), have explained the compound growth rate and instability in production of

different varieties of raw silk production in different periods were analysed and it was found that Tasar silk has higher instability in production and growth rate, while as more consistence's were achieved in Mulberry and Muga silk production in all the three periods because of the fact increased demand of mulberry silk throughout the country for the production of sarees and grey fabrics. It was also found that variations in raw silk marketing system in different states of have direct impact on averages raw silk prices, therefore states which have good marketing infrastructure yields good averages prices for the produce. So it is imperative for the government to maintain stability raw silk prices among states by increasing the number of raw silk exchange markets in the different states of nation.

Basavaraja et al (2015), the Technical committee constituted by the Government of Karnataka to analyse the various issues connected to "Cocoon, Raw Silk Production, Price and Marketing System a Comprehensive Study", the Technical Committee Report Submitted to Government of Karnataka with scenario analysis of Sericulture in Karnataka and gave recommendations to the Government on various aspects of Sericulture after in depth analysis of Cocoon Production, Silk reeling and Marketing. For the first time the Committee recommended for expected minimum Cocoon Market Price to cover the Cocoon production cost.

Banerjee (2016), have explained mulberry cocoon production is higher as compared to production of other cocoons. However, maximum number of beneficiaries or labourers engaged in the production of tussar cocoons so it is much popular all over Chhattisgarh and gained more profit. Production of natural tussar cocoon is progressively increasing while eri cocoon production is rapidly decreasing in last three years.

Sudhakar et al (2019), have explained with the above results the study can be concluded that the improvement indicates the success of CPP programme during XI & XII- five year plan at Hindupur during 2009-19 is nothing but intensive adoption of integrated technology in cluster approach is one of the remedy for attaining sustainability of sericulture. Further, it is essential to continue the intensive bivoltine promotion programmes of this kind in future in the new clusters established under CPP so as to make our country self sufficient and self reliable in quality bivoltine silk production thereby projecting India as one of the potential bivoltine silk producers at international market.

Srinivasa Reddy et al (2019), have explained help to know the knowledge level of sericulture farmers and critical practices like optimum dose of fertilizers, ideal moisture content for leaf preservation in mulberry, recommended size of nylon mesh for bed cleaning and hormone for uniform maturity of silkworm were found to be less adopted. In this line technical advisory service from extension agency would be very much required in motivating the sericulture farmers to realize importance of these improved practices to increase yield levels in sericulture. Hence, it is required to organize massive training programmes by the sericulture department to educate farmers on improved practices in mulberry cultivation and silk worm rearing in order to increase production, the cocoon yield, cocoon quality, stable market prices and income level among sericulturists and helps for overall sustainable development of farmers. The reviews of the published work also reveal the fact that no work of worth consideration on the topic of the present study has been undertaken by the researchers in the past. Hence, there is need for present study to fill the research

gap that exists at present. In order to cover this gap, the present research was undertaken.

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