Study of Growth and Instability in Raw Silk Production and Marketing in India

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ABSTRACT
Economic potentials of Sericulture and its popularity are reflected by the fact that it is no longer limited to the traditional areas of sericulture. Sericulture provides much needed employment, income and foreign exchange in developing and labour rich countries especially India. Keeping these thing in mind, present study was attempt to highlight the growth and instability in production of different varieties of raw silk and also the variations in raw silk marketing system in different states of India. The results showed that raw silk production has an increasing trend and raw silk exchanges markets have direct impact on averages raw silk prices, therefore states which have good marketing infrastructure yields good prices to the produce. In order to achieve the maximum growth rate of this industry, government should come forward to set up maximum number of raw silk exchanges in different states so that variation in raw silk price among states will reduced in one side and role of middle man (buying in one state and selling in other state) gets eliminated.

INTRODUCTION

The word sericulture has been derived from the Greek word 'sericos' which means 'silk' and the English word "culture" means 'rearing'. Sericulture is the art and science of rearing of silkworms for the production of raw silk and its end product is silk. Silk is referred as "Queen of fabrics" and is well known for its natural colour, purity and unusual lustre. It is natural fabric, animal oriented and produced from silkworm (Hiware 2012). Sericulture refers to conscious mass-scale rearing of silk producing organisms in order to obtain silk from them (Ganga 2006). Sericulture is an important labour intensive, agro-based industry providing gainful employment to unemployed/underemployed in the rural and semi-urban areas and facilitates economic development and improvement in the standard of life of the people. Therefore it has turned out to be a highly remunerative cash crop with minimum investment and high dividends. Sericulture is unique for many reasons such as labour intensive in mulberry cultivation and cocoon production and cottage based industry in raw silk, reeling and then highly industrial at last stage of silk production. Sericulture comprises mulberry cultivation, silkworm rearing, egg production, silk reeling and weaving, and then silk marketing.

Sericulture originated in China and they kept it secret for over 2000 years before it leaked to India, Korea and other nations in Asia and Europe. Silk culture was widely practised in India during medieval period. It had a flourishing period during the Moghal regime when Kashmir shawls and woven silks were admired in the court of Emperor Akbar (Mohanty 2003).

India and China together have monopoly in total silk production in the world. China has a share of 80.06 per cent in the world production of silk, followed by India, which has a share of 17.77 per cent. China produces international grade raw silk and hence has been one of the major stake holders in the international silk exchange market. India is considered to be the second largest producer of silk and largest consumer of silk and its allied products. India has sericulture tradition and has the unique peculiarity of having all the four commercially viable varieties of silk namely Mulberry, Tasar, Eri and Muga (Kumar 2010). But still the domestic demand is not fulfilled within nation. India is dependent on imports of about 7000 MT annually. Out of the annual raw silk production; there exists a huge domestic demand as the consumption rate is highly elastic. This has resulted in creating a larger gap in production and consumption of silk products.

OBJECTIVES OF STUDY

1. To find out the growth and instability of raw silk production in India.
2. To highlight the raw silk marketing system and share of different states in it.
3. To know the system of trading and its international demand

HYPOTHESIS

H_o = there is no significant relationship between raw silk production and time period

MATERIAL AND METHODS

In order to achieve the specific objectives, the time series data on different varieties of raw silk production of India was obtained with the reference period 1980-81 to 2013. This study is based on secondary data analysis which has been obtained from different sources such as central silk board, international silk commission, books, papers and internal etc. The collected data has been analysed through different statistical tools such as compound growth rate, coefficient of variation and regression analysis. The production period has been divided into three periods of 13 years each as shown in below. in order to show the trend of different varieties of raw silk and instability among them.

1. Period I (1980-81 to 1990-91)
2. Period II (1991-92 to 2001-02)
3. Period III (2002-03 to 2012-13)
4. The overall period (1980-81 to 2012-13)

The period wise instability of these varieties of raw silk was measured through coefficient of variation analysis which was calculated as

$$CV = \frac{s}{\bar{x}} \times 100$$

Regression analysis: to study the relationship between raw silk production and time periods by the following equation

$$Y=\alpha+\beta x+u_i$$

RESULT AND DISCUSSION

The growth rate and instability in different varieties of raw silk production during different periods between 1980-81 and 2012-13 in India was studied and the results are shown in table 1.1. It is evident from the table 1.1 that more consistencies were achieved in period II in all the varieties of raw silk production, but at the same time low growth rate as compared with other periods. Tasar silk has higher instability in production and more consistences were achieved in Mulberry and Muga silk in all the three periods. Due to heavy demand of mulberry silk throughout the country for the production of sarees and grey fabrics, the value of coefficient of variation has been decreased from 31.95(period I) to 9.11(period III) as shown in table 1.1. As far as growth rate is concerned mulberry silk shown decreasing trend and other varieties instable. Tasar silk has shown negative growth (-32.11) during period II and then shows increasing trend in III period. The growth rate in Muga silk production showed decreasing trend irrespective of the fact that muga silk is known as "Golden Silk" in the world and at the same time India has monopoly in the production of Muga silk.

Table No. 1.1: Compound Growth Rate and Coefficient of Variation of Different Varieties of Raw Silk Production in India

Periods / Varieties	Period I (1980-81 To 1990-91)	Period II (1991-92 To 2001-02)	Period III (2002-03 To 2012-13)	Overall Period (1980-81 To 2012-13)
Mulberry	31.95* (60.01)	9.77* (32.72)	9.11* (21.89)	32.65* (75.45)
Tasar	24.07* (30.26)	20.96* (-32.12)	75.05* (83.57)	78.77* (84.67)
Eri	48.30* (78.36)	17.57* (39.31)	35.93* (57.76)	68.10* (95.66)
Muga	16.16* (31.42)	16.86* (28.00)	07.03* (14.28)	33.75* (59.66)

All the star figures denotes the Coefficient of Variation of respective periods and variety

Figures in Parentheses denotes the Compound Growth Rates

REGRESSIONMODEL

Raw silk production in India is a function of time period (Y = f(X)) and results are shown in below table

Table 1.2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.975[a]	.950	.949	1119.59721

Predictors: (Constant), Time period

Table no. 1.3: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5495.295	398.825		13.779	.000
	Time Period	498.245	20.468	.975	24.342	.000

Dependent Variable: Raw Silk Production

Y=498.254+.975x+u_i

The analysis of the model summery table states that raw silk production shows an increasing trend with respect to time and also indicates 95% dependence on raw silk production on time. The table no. 1.3 the relationship between raw silk productions is highly significant, so we reject the null hypothesis and concluded that time period has direct impact on raw silk production and about 95% changes are explained by this single variable (time).

RAW SILK MARKETING

"Production may be the door to economic growth of a developing country but marketing is the key that turns the lock" - Drucker.

In order to facilitate marketing system to raw silk producers, Raw Silk Exchanges were set up in different states and regions where the reelers (Raw Silk producers) and the buyers (Traders, Twisters, Weavers, and Co-operative Societies etc.) meet and transact the raw silk. 0.75% market fee is collected from each of the reelers and traders and remitted to Government on the next day. The performance of a Raw Silk Exchange is measured in terms of quantity of raw silk transacted, number of lots arrived to the market and effectiveness of the silk exchange in fetching good prices to the reelers. However before transaction, raw silk is tested and graded according to specification and accepted standards. This is done in special organisations popularly known as Silk Conditioning and Testing Houses. Many such houses were setup in different states under the National Sericulture Project. Tests of raw silk can be done by the following methods:

1. **Visual test:** under this method visual examination is done for the uniformity of colour, lustre and handle (feel).
2. **Mechanical test:** this method is sub divided into different categories such as, Winding test, Size test, Seri plane test, weight test etc. these methods have been used to test the quality of raw silk.
3. **Burning test:** this is very simple, a layman can do. If we burn the silk piece and then remove the burner fire gets automatically extinguish and produces unpleasant smell.

Table 1.4 shows the state wise cocoon and raw silk markets in India and their respective share. States has been categories in traditional and non-traditional silk production. In tradition lists only five states are there such as Karnataka, Tamil Nadu, West Bengal, Andhra Pradesh and J&K, while the rest states are non-traditional states of silk production. Analysis of the

table 1.4 shows that maximum share of raw silk exchange in India has traditional states and among them Karnataka has the maxim share (62.50) and rest four states have less than 40% of market share, same is the case of non traditional states. If we look over the non-traditional states, it can be easily seen Madhya Pradesh have 8 Raw Silk Exchanges, irrespective of the fact that Madhya Pradesh fall under non-traditional and have little contribution of raw silk production in India. Orissa have 98 cocoon Markets but two Raw Silk Exchanges are there.

Therefore variation in raw silk marketing between the states produces variation in raw silk prices. States wise variation of raw silk prices as shown in table 1.5, in Karnataka Rs.1800/Kg of raw silk, where as Andhra Pradesh (Rs. 1063/Kg of raw silk) lower than Karnataka and West Bengal (Rs.1316.16/Kg of raw silk). It is because of the reason that Karnataka has maximum number of Raw Silk Exchanges (10 No.s) than West Bengal (2 No.s) and Andhra Pradesh (1 No.s). Therefore it can be concluded from both these table that raw silk prices have direct relationship with the Raw Silk Exchanges (Raw Silk Markets).

Table 1.4: State Wise Raw Silk Exchanges

S. No	State	Raw Silk Exchanges (No.s)	% Share of Raw Silk Exchanges
	Traditional States		
1	Karnataka	10	62.50
2	Andhra Pradesh	1	06.25
3	Tamil Nadu	1	06.25
4	West Bengal	2	12.50
5	Jammu and Kashmir	2	12.50
	Total	**16**	**100.00**
	Non Traditional States		
6	Bihar	-	-
7	Chattisgrah	4	20
8	Madhya Pradesh	8	40
9	Manipur	3	15
10	Orissa	2	10
11	Utterkhand	1	5
12	Utter Pradesh	1	5
	Others	1	5
	Total	**20**	**100.00**

Source: Central Silk Board, Bangalore

Table 1.5: Averages Raw Silk Prices in Different States of India 2011-12

State	Average Raw Silk Prices (Rs. /Kg)	Raw Silk Exchanges Markets (No.s)
Karnataka	1800	10
West Bengal	1316.66	2
Andhra Pradesh	1063	1

Source: Central Silk Board, Bangalore

In order to reduce the differences in raw silk prices among the states, both Central and State government should come forward to set up maximum number of Raw Silk Exchange so that the rearers and reelers will get maximum from their produce and industry will go without leaps and bounds.

Sericulture industry has been identified by the central government of India as one of thrust areas for investment as the industry have potential to generates more employment opportunities for economically weaker section of society. Currently more than 60 countries are engaged in sericulture and its allied sectors of the industry. China and India are the major producers of raw silk. Indian silk industry caters mainly the domestic demand round the year and around 80% of silk production goes for it. India produces around 21005 MTs of raw silk during 2010-11, while the total consumption per annum is 29000 MTs. The excess demand is met through exports of around 8000 MTs of silk, especially of high quality silk. India's main import items are raw silk, natural silk yarn and silk fabrics, worth Rs 6201.6 million of fabrics during 2010-11. Apart from imports India exports readymade garments, silk carpets, natural silk yarn and silk waste to USA and European countries in large scale.

The demand for silk and its products are increasing day by day, and demand for silk comes from Italy, Japan, USA, Korea, India and France etc. The countries like Italy, France, and other countries are importing raw silk or finished silk because they do not producing silk at all, Japan and Korea are importing silk due to high consumption and low domestic production and India is producing sufficient but still importing as it does not produce good quality to meet the domestic requirement.

The supply of silk is restricted to only few nation of the world, mainly from China, India, Vietnam and Uzbekistan etc. Thus the supply of silk and its allied products is controlled by these nations. However its demand comes from all over the world, which leads to pressuring factor for increasing the prices. Since the demand for raw silk is derived demand from silk products, therefore an increase in demand for finished silk products, leads to increase in raw silk prices and utimatly leads the growth of silk industry.

PROBLEMS

➢ Non-availability of quality yarn is important problem faced by silk reelers
➢ The rearers and reelers are misuse by the middle man and money lenders, as credit facility is not easily available for them.
➢ Lack of marketing information is another bottleneck faced by this industry due to which reelers are not getting remunerative for their produce.
➢ Raw silk exchange markets are located at distant places due to which reelers find it difficult to transport and this leads to increase the cost of transportation. As a result profits are decreasing and industry is not growing.

➢ Availability of Cheap and quality imports from China in Indian markets are other bottleneck.

SUGGESTIONS

➢ Due to limited number of raw silk exchange markets, reelers should adopt clusters for better marketing conditions.
➢ Implement silk mark in a strict manner so that quality silk can be easily recognised and exploitation will be reduced.
➢ India has high potential in silk industry but what is lacking investment in new or innovative technologies. Investment should be made in technologies to make this industry more competitive.
➢ Bi-voltine silk production should be enhanced to meet the domestic requirement and save foreign exchange earnings.
➢ Awareness and motivate the reeling units and weavers to improve the productivity and produce good quality yarn and fabrics.
➢ Streamlining of silk exchange to make them more effective
➢ Restriction should be imposed on import of raw silk and impose tariff on finished products.
➢ Awareness about the prices prevailing in different raw silk exchange markets.
➢ Government should extend the credit facility for rearers and reelers, so that degree of exploitation by the middle man will be reduced.

CONCLUSION

The compound growth rate and instability in production of different varieties of raw silk production in different periods were analyzesed 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.

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