



सत्यमेव जयते

Ministry of Textiles
Govt. of India



Central Silk Board
Bengaluru



Seri-States of India

- A Profile

2019

Seri-States of India 2019

– A Profile



CENTRAL SILK BOARD

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Foreword

Sericulture practice is an ancient avocation in India, traces of which are available from the historical evidences unearthed from the Harappan civilization and the references in the country's ancient religious scriptures. However, the industry could emerge as a credible employment generator only after the Second World War, which is also synonymous with the India's growth since independence. This all happened with the acceptance of a study report submitted by the "Silk Panel "and the resultant institution of an exclusive national organization christened as "Central Silk Board" by an Act of Parliament during 1948. This was followed by initiating a series of policy actions and establishing a slew of facilities at Central and State level which heralded a new dimension in accelerating the pace of developmental initiatives.

Silk industry currently provides employment to 8.5 Million rural people of the country, which is expected to reach 10 Million by 2022. It is an ideal occupation for employment generation and poverty alleviation and aligns with most of the objectives of the Sustainable Development Goal (SDG) set by the United Nations. The annual turnover of the industry is about Rs.10,956 Cr. and has the potential to become a major foreign exchange earner. The outlook of the industry is estimated to be positive propelled by strong domestic demand and consumption, which is expected to continue in the coming years.

Since sericulture is placed under the concurrent list, the departments of Union and State governments could compliment in initiating developmental activities for filling gaps in critical areas. Central Silk Board with its major mandates of policy initiatives, R&D and leadership role in seed production, extension and promotion could significantly enhance the production, productivity and quality of silk in the country. These efforts have culminated in achieving the target of self-sufficiency of producing internationally graded silks by the year 2022.

The State Sericulture Departments have also played a critical role in this amazing growth of silk industry. Most of the developmental activities in the field have been taken up by the State Governments, primarily suiting to the needs and requirements of the region. There are good number of success stories for the sector which have effectively become models for replication among the stakeholders, across the States.

The industry also faces few challenges arising due to urbanization, industrialization, climate change, depleting soil conditions and water sources, threat from manmade fibres, etc. However, we have already conceived and put in place a series of activities to circumvent these issues through appropriate policy actions and suitable R&D interventions. Central Silk Board is also in the process of exploring the enormous scope of using silk in frontier areas like pharmaceutical, industrial, nutraceutical, and nutritional sectors.

We, at the Central Silk Board felt the need to chronicle the developmental activities initiated both by central and state governments. The Compendium details profiles the efforts of different agencies like the departments of Union and State Governments, private agencies and other stakeholders. I believe that this Compendium would certainly serve as a useful reference manual for all those who are interested to learn about the progress of Indian Silk Industry and participate in the remarkable journey of silk, the mystic fibre of unparalleled grandeur.

Rajit Ranjan Okhandiar

Member Secretary

Central Silk Board, Ministry of Textiles

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Government of India
New Delhi



Sushma Swaraj
Minister of External Affairs

MESSAGE

I am pleased to note that the Central Silk Board, Ministry of Textiles, Government of India is bringing out a publication entitled "Compendium on Seri-States 2019: A profile".

The Compendium provides comprehensive information on the development of sericulture and silk industry in the country, the role and contribution of various sericulture states, their inherent strength and potentiality to forge ahead, through a slew of schemes and programmes launched by the Government. The publication is sure to prove useful to the policy makers, academicians and the stakeholders to understand the pace of progress, the sector has achieved in the recent years.

I wish the Compendium and the Central Silk Board, all success.

(Sushma Swaraj)



सत्यमेव जयते

Government of India
New Delhi



Smriti Zubin Irani
Minister of Textiles

MESSAGE

It gives me immense pleasure to note that Central Silk Board is bringing out a publication entitled "Compendium on Seri-States 2019: A Profile". In recent years, significant development in improving production and productivity, creation of skilled manpower and sustainable livelihood opportunities especially for the weaker sections of the society, has been achieved with the implementation of Silk Samagra - the Integrated Scheme for Development of Sericulture Industry, an ambitious programme of Government of India and North East Region Textile Promotion Scheme (NERTPS) for the North-eastern states of the country. Apart from highlighting the growth achieved by the states and their speciality in production of ethnic silks, the Compendium highlights success stories of some of the stakeholders across the silk value chain.

I am sure the Compendium will provide further momentum to the implementation of plans and programmes launched by the Government of India.

I convey my best wishes to the Central Silk Board for bringing out this unique publication.

(Smriti Zubin Irani)



भारत सरकार
नई दिल्ली



अजय टम्टा
वस्त्र राज्य मंत्री

संदेश

मुझे यह जानकर हर्ष है कि केन्द्रीय रेशम बोर्ड, वस्त्र मंत्रालय, भारत सरकार ' भारतीय रेशम उत्पादक राज्य 2019: समग्र परिचय ' संकलन का प्रकाशन कर रहा है, जिसमें भारत सरकार की विकासात्मक योजनाओं और कार्यक्रमों द्वारा समर्थित विभिन्न रेशम उत्पादक राज्यों के माध्यम से देश में रेशम उत्पादन की प्रगति पर व्यापक और अद्यतन जानकारी दी गई है। यह प्रकाशन भारत में रेशम उत्पादन के विकास पर प्रथम सूचक होगा।

मैं प्रकाशन के सफलता की कामना करता हूँ।

(अजय टम्टा)



Government of India
New Delhi



Raghvendra Singh
Secretary (Textiles)

MESSAGE

It is a matter of great pleasure that the Central Silk Board, Ministry of Textiles, Government of India is bringing out "Compendium on Seri-States of India 2019: A Profile". The publication presenting complete and update information on the sericulture development in the country through plans and programmes of the Government of India, gives an insight into the meticulous planning and vision for sustained development across different segments of the industry. I am sure that this Compendium will be an effective tool for the states to understand closely each other in sericulture sector and their strength in different segments of silk industry.

I wish the "Compendium on Seri-states of India 2019: A Profile", all success.

(Raghvendra Singh)



Central Silk Board
Ministry of Textiles
Govt. of India
Bengaluru-560 068



K.M. Hanumantharayappa
Chairman, Central Silk Board &
Silk Mark Organisation of India

MESSAGE

It is a great pleasure to learn that Central Silk Board is bringing out a compendium on "Seri States in India 2019: A Profile" which includes, national as well as state-wise information on multi-pronged efforts of the Union and State Governments in the development of Indian sericulture industry. In recent years, sericulture and silk industry has achieved impressive growth both in quality and quantity resulting in, higher production and economic sustenance of millions of families dependent on sericulture both in mulberry and vanya sectors.

The recent implementation of Silk Samagra (ISDSI) and NERTPS Schemes helped a great deal in realizing the vision of Government of India to become self sufficient in raw silk production by 2030. I hope the Compendium will be highly useful to the silk men across the country for furthering the growth pace of the Indian silk industry.

I congratulate all those involved in bringing out this Compendium.

(K.M. Hanumantharayappa)



Indian Silk Industry

Prolegomena

The word *Silk* spells luxury and class. Even today, no other fabric can match silk in lustre and elegance. The touch of silk evokes the very thread of history, a shimmering fabric of unparalleled grandeur. Over the centuries, it has reigned undisputed as the queen of textiles. Mankind always love silk. It is the yarn of life, extruded by that unassuming caterpillar in a continuous filament as long as about one and half kilometres. Silk is a way of life in India. Over thousands of years, and with turn of centuries, it became an inseparable part of Indian culture and tradition. No ritual is complete without silk being used as a wear in some or the other form.

Sericulture in India has proved to be an ideal avocation for inclusive development of rural populace especially the weaker sections of the society addressing equity distribution from urban rich to rural poor. With its eco-friendly production process and high potentialities became an ideal tool for biotechnological development, and a way for women and tribal empowerment. Sericulture stands for livelihood opportunity for millions owing to its high employment potential, low capital requirement and remunerative nature. India being the second largest silk producing country in the world, next to China, provides employment to over 8.5 million people in the entire silk production value chain from *farm to fabric*.

Silk production has achieved remarkable growth during recent times. Silk production increased from 23,060 MT in 2011-12 to 31,906 MT in 2017-18 at a compound growth rate of 5.1% per annum. Country's raw silk production is expected to reach 38,500 MT by 2019-20 and become self-reliant by 2022.





Central Silk Board

Indian sericulture is an ancient industry dating back to several centuries. Severe competition from Chinese and Japanese silk during 1931-32 affected the Indian silk industry and there was no effort by the then Imperial Government. The Laffroy Committee (1914-15) recommended the need for an organization backed by the Government to look after development need of sericulture Industry in India as the industry serves for overall development of weaker sections of the society. The Second World War provided specific attention for silk industry with the stoppage of supplies of raw silk from China and Japan. The industry received first time financial assistance from the Government for expansion of the industry and the raw silk production increased to 1242 MT in 1949 from the level of 691 MT in 1938.

Considering the need for development of silk industry, the Government of India had set up a Silk Panel on 8th March, 1945 to examine the development of silk industry and suggest suitable measures. The Panel, while drawing up a 5-year Plan as a part of a prospective Plan of 15 years, suggested, setting up of the Central Silk Board for ensuring coordinated development of the industry under Central Government Control. The Government of India accepted the recommendations of the *Silk Panel* and enacted the CSB Act 1948. Accordingly, the Central

Silk Board was setup under an Act of Parliament (LXI) of 1948 for shaping the sericulture industry on 9th April 1949 with its head quarters in Delhi under the Chairmanship of Shri Syama Prasad Mukherji, Minister for Industry and Supply, Government of India. As a part of Centralization effort, the Central Sericulture Research Station, Berhampore (West Bengal) was established by the Imperial Government of India in 1943 under Council of Scientific and Industrial Research (CSIR) and the Central Sericulture Research Station at Mysore under Mysore Province, were brought under the control of Central Silk Board, Government of India for overall growth of the industry. In 1958, CSB established Central Silkworm Seed Station in J&K and in 1961, the Board took over Parental Seed Station, Coonoor from Madras Government. In 1964, Board established Central Tasar Research and Training Institute at Ranchi and 3 Regional Offices at Delhi, Kolkata and Bangalore. During 1970 the Board established Regional Sericulture Research Stations and Research Extension Centres based on the recommendations of All India Sericulture Coordination Committee headed by eminent Scientists like Dr. M.S. Swaminathan and Dr. V.L. Chopra, the then DG, Indian Council of Agricultural Research (ICAR). Subsequently, Central Silk Technological Research Institute, Bangalore, Central Eri and Muga Research Station, Jorhat with





a network of Research Extension Centres were established with the approval of the Government of India as a part of Central Sector Scheme. During 1980, the Central Silk Board organized Silkworm Seed Organizations for mulberry, tasar, eri and muga. Under the World Bank-assisted-National Sericulture Project, CSB established specialized research institutes viz., Central Sericultural Germ Plasm Resource Centre, Silkworm Seed Technological Laboratory and Seri-Biotech Laboratory during 1990.

Progress of Indian raw silk production from I to VII Plan

During the I Plan period, silk production rose from 1,211 MT in 1950 to 1,421 MT in 1955-56 registering an increase of 17%. Further rise of 5% in the production was witnessed during the II Plan. The output by the end of II Plan (1960-61) stood at 1,499 MT. During the III Plan (1965-66), the silk production was 2,152 MT at this time, India ranked fourth among the silk producing countries of the world. The rise in the production was 44% over the II Plan. The same trend continued up to V Plan taking the raw silk production to 3,711 MT with an increase of 28% over the IV Plan. Raw silk production in the country began making significant progress during the VI Plan and by the end of VI Plan period (1984-85) the production reached 7,673 MT with an outstanding increase of 107% over the V Plan. Similarly, the raw silk production reached 12,016 MT by the end of VII Plan (1989-90) with an increase of 57% over the VI Plan period.



Progress of Indian raw silk production from VIII to XII Plan (2016-17)

Country's raw silk production has grown from 23,060 MT during 2011-12 (end of XI Plan) to 30,348 MT in 2016-17 (end of XII Plan) at a Compound Annual Growth Rate (CAGR) of 5.1% per annum. The bivoltine silk (import-substitute) production recorded a compound growth of 25.6% per annum. Similarly, the non-mulberry silks, collectively called as vanya silk, have achieved a compound growth rate of 13.6% during the same period. The import of raw silk has consistently reduced from 5,683 MT during 2011-12 to 3,795 MT during 2016-17 due to increase in import-substitute bivoltine raw silk production in the country.

Progress of Indian raw silk production from 2017-18

The country has produced a record level of 31,906 MT of raw silk during 2017-18. During the same year, import substitute (bivoltine) raw silk production has recorded 11.5% growth over the previous year (2016-17) -indicating the intense interest of farmers in producing bivoltine rather cross breed cocoons, through good performance of the industry.

A significant increase of 8.4% in vanya silk production during 2017-18 was witnessed over the previous year (2016-17) due to the implementation of North-East Region Textile Promotion Scheme (NERTPS), a focused umbrella scheme for NE States. Raw silk production trends in the country over different Plan periods are depicted below:





Trend analysis of raw silk production in India over Plan periods

Plan Period	Mulberry plantation (ha)	Mulberry raw silk (MT)		Vanya raw silk (MT)				Grand total (MT)
		BV	Total	Tasar	Eri	Muga	Vanya Total	
VIII Plan (1992-97)	280651	387	12954	235	864	73	1172	14126
CAGR	-3.9	-9.7	-0.1	-9.3	3.5	4	0.1	-0.1
IX Plan (1997-02)	232076	840	15842	249	1160	100	1509	17351
CAGR	-3.8	15.1	2.4	-4.4	7.3	10	4.9	2.6
X Plan (2002-07)	191893	1089	16525	350	1485	115	1950	18475
CAGR	-0.3	9.7	2.5	4.3	2.4	2.4	2.8	2.5
XI Plan (2007-12)								
2007-08	184928	1175	16245	428	1530	117	2075	18320
2008-09	177943	1250	15610	603	2038	119	2760	18370
2009-10	183773	1200	16322	803	2460	105	3368	19690
2010-11	170314	1400	16360	1166	2760	124	4050	20410
2011-12	181089	1685	18272	1590	3072	126	4788	23060
CAGR	-0.4	7.5	2.4	30.0	15.0	1.5	18.2	4.7
XII Plan (2012-17)								
2012-13	186015	1984	18715	1729	3116	119	4964	23679
2013-14	203023	2559	19476	2619	4237	148	7004	26480
2014-15	219819	3870	21390	2434	4726	158	7318	28708
2015-16	208947	4613	20478	2819	5060	166	8045	28523
2016-17	216810	5266	21273	3268	5637	170	9075	30348
CAGR	3.1	21.6	2.6	13.6	12.6	7.4	12.8	5.1
2017-18	223926	5874	22066	2988	6661	192	9840	31906

Indian silk industry with about 1.2 million sericulturist families and 8.5 million people, involved in a host of activities accounting for over 20% share of textile sector has maintained its momentum in growth and sustainability,

in spite of rapid industrialization and increasing pressure on arable land. It is interesting to note that sericulture and allied activity sector is the largest employer in the country, next to agriculture.





India

Growth of silk production with R&D efforts

Mulberry sericulture in the country initially practised multivoltine pure breeds for commercial silk production which had lower silk content (10-12% of cocoon weight), limited productivity (15.88 kg of raw silk per hectare) and low silk production (1,437 MT) during 1950s. The implementation of Centrally sponsored Catalytic Development Programme and Central Sector Scheme "Silk Samagra" led to further improvement in productivity (100kg/ha) and helped in enhancing the bivoltine silk production to 5,266 MT by 2016-17. Breeding programmes undertaken by CSB institutions have resulted in the development of new silkworm hybrids for commercial exploitation and new breeds with higher silk content (22%). The raw silk production has increased considerably all through the period from 1,421 MT in 1955-56 to 14,126 MT in 1996-97, 23,060 MT by end of XI Plan and 30,348 MT, 31,906 MT by 2016-17 & 2017-18. Impact of R&D on silk production is graphically presented below:



India traditionally had sericulture activity over decades with low productivity. From 1992 onwards, the country is producing 2A grade silk in Multi-end Reeling Machine (MERM). Since 2008, production of silk quality of 3A & 4A has started with introduction of Automatic Reeling Machine (ARM).

Vanya silkworms comprising tasar, muga and eri are wild insect based, which cannot be easily domesticated. R&D efforts of CSB have resulted in development of a few



improved races in addition to the better rearing and post-cocoon technology packages suitable to the industry. The genetic improvement in muga silkworms has resulted in production increase from 35 to 60 cocoons per dfl. Tasar silkworm breeds have increased the production from 25 to 55 cocoons per dfl. Eri production has improved with development of races having higher productivity (from 2kg/100 dfls to 12 kg/100 dfls).

The National Silkworm Seed Organization (NSSO) over the years has earned the good will, credibility and preference from the farmers for quality bivoltine silkworm seed





(dfIs), even though, the state departments also produce commercial seed. Basic Tasar Silkworm Seed Organization (BTSSO), Muga Silkworm Seed Organization (MSSO) and Eri Silkworm Seed Production Centres (ESSPC) cater to the needs of maintenance and production of nucleus and basic silkworm seeds and limited quantity of commercial seeds. The cocoon yield increase over a period of years is depicted in the graph elsewhere in the paper:

Projects for the development of silk industry

The Government of India's development plans have persistently emphasized not only expansion of

agricultural and in particular, food grain production but also, alleviation of rural unemployment and poverty and have therefore included investments for labor-intensive sub-sectors such as sericulture. Based on past favourable experiences and because of its potential for employment generation and improving rural income, both Government of India and the other State Governments have been planning measures to expand silk production. The table below gives the historical background of developmental schemes and projects implemented in the country from 1980, which have catalysed the growth of silk industry in India:

Sericulture developmental projects implemented in the country

Project period	Name of the Project	States covered
1980-1985	Karnataka Sericulture Project (KSP)	Karnataka
1987-1996	Indo-Swiss Mulberry Project	Andhra Pradesh & Tamil Nadu
1990-1996	National Sericulture Project (NSP)	All the States of India
1991-1997	Bivoltine Sericulture Technology Development – (BSTD-JICA)	Karnataka, Andhra Pradesh & Tamil Nadu
1997-2016	Catalytic Development Programme	All the states of India
1997-2004	Seri-2000	Karnataka, Andhra Pradesh, Tamil Nadu & West Bengal
1997-2002	Promotion & Popularizing the Practical Bivoltine Sericulture Technology (PPPBST-JICA)	Karnataka, Andhra Pradesh & Tamil Nadu
2002-2007	Project for Strengthening Extension System for Bivoltine Sericulture (PEBS-JICA)	Karnataka, Andhra Pradesh & Tamil Nadu
1999-2003	UNDP assisted Sub-programme on development of Vanya Silks: Tropical tasar, oak tasar, muga and eri silk	Andhra Pradesh, Odisha, Bihar, Jharkhand, West Bengal, Assam, Meghalaya, Nagaland, Uttarakhand & Chhattisgarh
1998-2008	JBIC Developmental projects	Manipur & Chhattisgarh
2002- 2014	Special SGSY projects for development of mulberry, tasar, muga and eri culture	Assam, Arunachal Pradesh, Mizoram, Nagaland, Madhya Pradesh, Bihar and Jharkhand & Uttarakhand
2009-2016	NABARD- Tribal Development Fund Projects	Bihar & Jharkhand
2014-2018	Mahila Kisan Sashaktikaran Pariyojana (MKSP)	Jharkhand, Chhattisgarh, Odisha, West Bengal, Maharashtra, Andhra Pradesh, Bihar & Telangana
2013-2017	Bivoltine Cluster Promotion Programme (BCPP)	All the Indian states except Gujarat, Rajasthan, Chhattisgarh & Jharkhand
2015-2017	Vanya Cluster Promotion Programme (VCP)	Jharkhand, Chhattisgarh, Odisha, West Bengal, Maharashtra, Andhra Pradesh, Telangana, Madhya Pradesh & Uttar Pradesh
2014-2020	North East Region Textile Promotion Scheme (NERTPS)	All North-eastern states
2017-2020	Integrated Scheme for Development of Silk Industry - ISDSI (Silk Samagra)	All silk producing states





India

Sector-wise uniqueness of states

#	Name of State	Sector				Uniqueness of the State
		Mulberry	Tasar	Eri	Muga	
1	Andhra Pradesh	√	√			Leading rice-growing state in the country. Second largest in silk production
2	Arunachal Pradesh	√	√	√	√	Enriching array of unique & appealing handloom designs. State with least density of population
3	Assam	√		√	√	3 rd largest producer of silk in the country and famous for golden muga silk. Highest in eri and muga silk production. State with highest number of handlooms and weavers in the country
4	Bihar	√	√	√		Important Buddhist pilgrimage
5	Chhattisgarh	√	√			The Rice Bowl of India
6	Goa	-	-	-	-	Famous for its splendid beaches
7	Gujarat	-	-	-	-	Rich cultural heritage, especially dance & food
8	Haryana	√				The home of Gods
9	Himachal Pradesh	√	√			Popular hill stations among tourists attractions
10	Jammu & Kashmir	√				Jammu is famous for Temples and Kashmir for lakes and gardens
11	Jharkhand	√	√			Famous for its rich mineral resources.
12	Karnataka	√				Famous for Pure Mysore silk and coffee & paddy fields. 1 st in silk production
13	Kerala	√				One of the most popular tourist destinations in the world
14	Madhya Pradesh	√	√			Famous for the exquisite sculptures of Khajuraho
15	Maharashtra	√	√			Third-most urbanized state of India.
16	Manipur	√	√	√	√	Highest producer of Oak Tasar silk in the country.
17	Meghalaya	√	-	√	√	Tourist destination in NE. 2 nd position in eri and muga silk production
18	Mizoram	√	√	√	√	Land of hill people.
19	Nagaland	√	√	√	√	Cultural heritage of different tribes
20	Odisha	√	√	√		Famous for temples
21	Punjab	√				Known for tourist destination
22	Rajasthan	-	-	-	-	Great Indian Desert
23	Sikkim	√		√	√	First organic-state in the country
24	Tamil Nadu	√				Long coastline and the fabulous hill stations
25	Telangana	√	√			Newly formed state in India.
26	Tripura	√				Produces only Mulberry silk compared to other NE states
27	Uttarakhand	√	√			Devabhumi literally «Land of the Gods» due to a large number of Hindu temples and pilgrimage centres
28	Uttar Pradesh	√	√	√		Known for its rich culture and tradition
29	West Bengal	√	√	√	√	Famous for its terracotta temples and palace with popular tourist attraction





Vision

On 21.3.2018, the Cabinet Committee on Economic Affairs (CCEA), Chaired by Hon'ble Prime Minister of India, has approved an Integrated Scheme for Development of Silk Industry (ISDSI) titled as "Silk Samagra" for implementation during 3 years from 2017-18 to 2019-20.

Total outlay for the scheme is Rs.2161.68 crore. The scheme details have been circulated among all sericulture producing states. The scheme has four major components viz., (1) R&D, ToT, Training & IT initiatives (2) Seed Organizations (3) Coordination and Market Development and (4) Quality Certification System.

The main focus of the scheme is to,

- i. Increase in silk production from 30,348 MT to 38,500 MT.
- ii. Production of import substitute bivoltine silk to reach 8,500 MT and attain self-sufficiency by 2022.
- iii. Help in productive employment from 85 lakhs to 100 lakhs (additional 15 lakhs).
- iv. Increase in raw silk productivity from 100 kg to 111 kg. per hectare.
- v. Improvement in renditta from 6.8 to 6.2 kg for production of 1 kg of raw silk.
- vi. Focus on improving highest grade quality silk from 15% to 25% by 2020.



In India sericulture practices in different states are traditional and unique. There are 29 States in the country which have inherent strength, of which, 26 States are important in sericulture either for mulberry, eri, muga & tasar or in combination of these sectors. Table in the previous page gives the details of Indian states and the states where different varieties of sericulture is practiced and silk is produced:




As could be seen that, major states in the country practices mulberry and second position is held by tasar states in terms of number of states, third is eri and fourth is muga. Of the states, which are shown under tasar sector, Himachal Pradesh, Manipur, Mizoram, Nagaland & Uttarakhand produce oak tasar, which is also called temperate tasar, other states produce tropical tasar. In terms of production of silk, mulberry stands first, eri 2nd, tasar 3rd and muga 4th in the country. This book-let contains sericulture profile of the above states with detailed information of various silk produced, strength/potential of the state, which will be handy and a reference book. This book contains the data for the updated period up to 2017-18. The profile of states in the following pages are given in alphabetical order.

R& D Impact-Improvement in Cocoon yield/100 DFLs





ANDHRA PRADESH

 275,045 sq. km
  84,580,777
  67.02%
 (United Andhra Pradesh, 2011 census)

Introduction

Andhra Pradesh is reorganized into Andhra Pradesh and Telangana on 2nd June 2014. Andhra Pradesh is one of the 29 states of India, situated on the country's South-eastern coast. Bordered by Telangana in the North-west, Chhattisgarh in the North, Odisha in the North-east, Karnataka in the West, Tamil Nadu in the South and the Bay of Bengal in the East.

The state has second longest coastline of 972 km in India, next to Gujarat. There are two regions in the state namely Coastal Andhra and Rayalaseema, both put together generally referred as Seemandhra. There are 13 districts in the state, 9 in Coastal Andhra and 4 in Rayalaseema. The state is the largest producer of rice in India and hence it is praised as "*The Rice Bowl of India*". The climate of Andhra Pradesh varies considerably, depending on the geographical region.

Dharmavaram



Dharmavaram cluster produces a unique handloom pattu and paavadas. Sarees woven on handlooms with mulberry silk and zari.

Monsoons play a major role in determining the climate of the state. Summers last from March to June. In the coastal plain, the summer temperatures are generally higher than the rest of the State, with temperature ranging 20-42 °C. July to September is the season for tropical rains in Andhra Pradesh. The state receives heavy rainfall from the Southwest Monsoon during these months. Economy of the state is mainly based on *Agriculture* and *Livestock*. Many agricultural products exported through coastal districts. 60% of population is engaged in agriculture and related activities like Fisheries, Horticulture, Sericulture etc. Sericulture plays an important role in providing subsidiary income. The climatic condition is conducive for commercial exploitation of mulberry and tasar silks. The rain fall in Rayalaseema districts is very low when compared to the state average rain fall and thus, Rayalaseema districts are drought prone districts in the state. Therefore, unlike coastal districts, horticulture crops and sericulture are predominant in Rayalaseema districts.

Status of silk industry

Andhra Pradesh is traditional state and second largest mulberry silk producing state in the country and is well known for International Grade Quality Bivoltine Silk. Sericulture is an important sector of the state economy as it has very strong and traditional weaving base with weaving pockets like Dharmavaram, Patur, Peddapuram, Mangalagiri, Rayadurg and Poddutur etc. Sericulture Development Department headed by Commissioner of Sericulture with head quarters at Guntur, Andhra Pradesh. The goal of the department is production of International 2A and above grade bivoltine silk production duly sanctioning of ARMs in the state under private sector. Out of the total population, 0.14% of families are involved in sericulture industry.

No. of sericulture villages	4217
No. of sericulture farmers	67750
No. of reelers	319
No. of weavers	106792





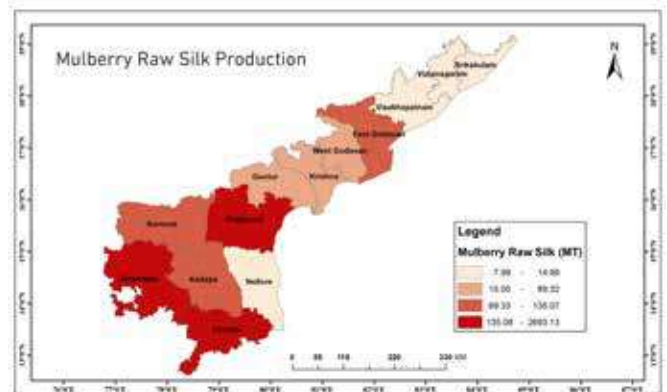
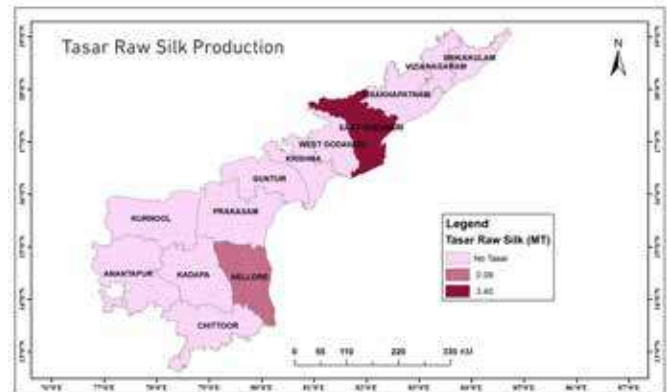
The state has also got strong industrial base besides traditional silk handloom pockets like Dharmavaram, Peddapuram, Uppada, Venkatagiri etc., which are nationally renowned silk handloom weaving centers, encouraging the growth of sericulture industry in the state.

Silk production trends

#	Variety	2013-14	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	45647	45726	29829	33156	36638
II	Mulberry raw silk (MT)					
	Bivoltine	380	495	708	1056.46	1216
	Cross Breed	6531	5990	4378	4913.82	5559
	Total	6911	6485	5086	5970	6775
III	Vanya silk (MT)					
	Tasar	0.46	-	-	1	3
	Grand Total	6911	6485	5086	5971	6778

District-wise status of sericulture during 2017-18

#	District	Mulberry area (ha)	Mulberry cocoon production (MT)			Mulberry raw silk production (MT)		
			BV	CB	Total	BV	CB	Total
1	Anantapur	15285	3089	18298	21387	494	2524	3018
2	Chittoor	14535	2812	16669	19481	450	2299	2749
3	Kadapa	885	170	755	925	27	104	131
4	Kurnool	1260	322	1137	1459	51	157	208
5	Srikakulam	247	48	137	185	8	19	27
6	Vijayanagaram	283	50	164	214	8	23	31
7	Visakhapatnam	260	50	151	201	8	21	29
8	East Godavari	759	381	650	1031	61	90	151
9	West Godavari	740	141	545	686	23	75	98
10	Krishna	399	79	239	318	13	33	46
11	Guntur	457	84	279	363	13	38	51
12	Prakasham	1211	314	1083.9	1398	50	150	200
13	Nellore	318	60	192	252	10	26	36
	Total	36638	7600	40300	47900	1216	5559	6775



Schemes of Government of India

Government of India is providing continued support to Andhra Pradesh State for intensive development of sericulture in all its spheres for maximization of benefits from existing capacity as a part of consolidation efforts and for creating new infrastructure at farmers' level, common facility centres for farm mechanization, reeling, spinning and silk weaving activities, besides infrastructure for seed production for State Governments. These interventions are expected to transform the state from the present level of silk production to *Silk hub of India* in coming years by providing self employment opportunities in the hinterland, protect the heritage with ultimate aim of "Make in India" in an eco-friendly atmosphere. Government of India has supported Andhra Pradesh for implementation of CDP, a centrally sponsored scheme from IX Plan to XII Plan. The CDP envisaged development of host plantations,



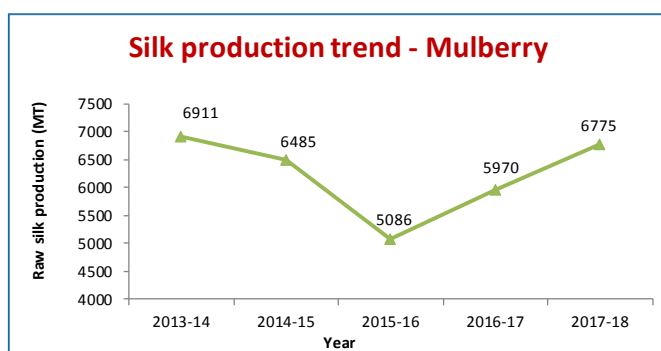


Andhra Pradesh

post-cocoon infrastructure, extension, upgradation of silk reeling and processing facilities, capacity building, publicity, enterprise development etc. Fund released by Central Silk Board to Andhra Pradesh for implementation of the CDP from IX Plan to XII plan are as under:

(Rs. in crore)

IX Plan (1997-2002)	X Plan (2002-07)	XI Plan (2007-12)	XII Plan (2012-17)	Total funds released
30.37	65.61	70.48	62.61	229.07



Silk Samagra

Silk Samagra is a comprehensive central sector scheme of Central Silk Board under implementation from 2017-18 to 2019-20, for overall development of sericulture industry in the country, implemented directly as well as through state governments. Central Silk Board has been supporting states towards implementation of various beneficiary oriented components under mulberry, vanya and post-cocoon sectors. These interventions are important tools for transfer and adoption of improved technology packages developed by the research institutes of Central Silk Board. The programme catalyzes the efforts of state governments to improve the quality, productivity and production of raw silk besides, generating employment opportunities particularly, in the rural areas. The interventions cover the major areas viz., (a) Development and expansion of host plant, (b) Strengthening and creation of silkworm seed multiplication infrastructure, (c) Development of farm and post-cocoon infrastructure, (d) Up-gradation of reeling and processing technologies in silk, and (e) Capacity building through skill development/

Enterprise development programme. The details of assistance are as below:

(Rs. in crore)

2015-16	2016-17	2017-18	2018-19
CSS		SILK SAMAGRA	
4.8768	11.71	8.5720	4.123

State plan schemes

State has created a separate department for development of sericulture which looks after all issues relating to sericulture. Besides, the state has given matching share for implementation of the schemes/programmes under state as well as "Silk Samagra".

The state has manpower for implementation of centrally sponsored schemes, convergence and state specific sericulture programmes (the state having 1745 nos. of manpower). Financial assistance provided by the state for maintenance of infrastructure and related activities under sericulture sector is as under:

(Rs. in crore)

During XII State Plan (2012-17)	2017-18	2018-19
200.59	25.60	74.976

Convergence programme

While funding for the future development programmes could be with convergence from Ministry of Textiles, Agriculture and Rural Development etc., in the state to consider sericulture as an important sector and provide matching state share besides, creating a full-fledged sericulture department in the years to come. The table below gives details of assistance availed by the state under convergence:

(Rs. in crore)

Year	RKVY	MGNREGA	Others	Total
XII Plan (2012-17)	13.5147	26.88	-	40.3947
2017-18	8.27	13.0166	-	21.2866





Infrastructure under State and CSB for sericulture development

Central Silk Board has also established following Institutes/Units to supplement the efforts of State Government in Andhra Pradesh for the development of sericulture:

A. Mulberry sector		
1.	RSRS, Anantapur	
2.	REC, Eluru	
3.	REC, Rayachoty	
4.	REC-Sub Unit, Atmakur	
5.	REC,V. Kota	
B. Post-cocoon sector		
1.	STSC, Dharmavaram	
C. Seed sector		
1.	SSPCs, Hindupur	
2.	SSPC, Madanapalli	
3.	SSC, Vijayawada	
4.	P2 BSF, Parigi	
5.	P2 BSF, Madakasira	
6.	P2 BSF, Horseley Hills	
D. Non-mulberry sector		
1.	BSMTC, Rampachodavaram	
#	Particulars	No.
1	Basic Seed Farm (BSF)	2
2	Grainage	7
3	Incubation/CRC	48
4	Cold storage (Hibernating house)	1
5	Departmental Nurseries Nos. Area	36 70
6	Cocoon market	8
7	Pvt. reeling units	240
8	Silk handloom	106792
9	Silk twisting spindles	52980
10	Silk power loom	5200
11	Silk exchange	2
12	Sericulture farmers	67750
13	Sericulture district	13
14	Sericulture village	4217

Marketing

Andhra Pradesh has its own strength of producing about 45,000 MT of both bivoltine hybrid and improved cross breed reeling cocoons. Presently, only about 2,500 reeling basins both under private and government sector are functioning against the actual requirement of 15,600 basins. The present basin in the state hardly can consume around 6,250 MT of reeling cocoons out of average reeling cocoon production of 45,000 MT leaving a quantity of 38,750 MT cocoons which are being drained out to neighboring states. The state cocoons are transacted in the government cocoon markets through open auction (e-marketing) under the supervision of a Sericulture Officer, Dept. of Sericulture and no markets are existing in the state under private sector for cocoon marketing and the silk commodities *i.e.*, raw silk, twisted silk, silk waste and silk fabrics.

Way forward

- Though, state has potential to grow all four popular varieties namely mulberry, tasar, eri and muga, only mulberry and tasar are practiced on commercial scale.
- The climatic condition prevail in the State is conducive for commercial exploitation of mulberry and tasar silks.
- Department is emphasizing more on bivoltine raw silk production with implementation of various schemes started by Central Silk Board and due to which on-farm & non-farm sectors are gaining momentum in the state.
- With the gained experience of the department, on-farm sector in the sericulture industry has been developed to reasonable heights. The Non-farm activities particularly, reeling sector has to be supported with the existing marketing system.
- Development of sericulture in the aspirational districts *viz.*, Vishakhapatnam, Vijayanagaram and YSR Kadapa in the form of soil to silk project.





Success story



Shri M. Kannappa

Village: Kanamanayanapalli
Andhra Pradesh

Shri M. Kannappa, son of Shri Metteppa, resident of Kanamanayanapalli village. Their family used to cultivate vegetables for the last 9 years experiences loss in crops and financial loss. He has borrowed money from other farmers and drilled 3 bore wells but failed to get water. Finally, he started the sericulture with 1 acre. He has 2.5 acres of V-1 mulberry plantation with drip irrigation (3'x3' spacing). He applies fertilizers based on the recommendations of soil test reports. He controls pest like tukra and leaf roller by using integrated pest management practices. Further, with the assistance under RKVY, he has constructed a rearing house with rearing capacity of 300 dfls per crop and also received an assistance of Rs.37,500/- from department.

Cocoon yield and income details

#	Particulars	2015-16	2016-17
1	Mulberry acreage for rearing	1.5	2.5
2	No. of crops/year - Bivoltine hybrids	10	10
3	No. of dfls brushed (year)	1750	2500
4	Cocoon production (kg/year)	1140	1875
5	Yield/100 dfls (kg)	65	75
6	Average Cocoon Rate Rs./kg including incentive	425	475
7	Gross income	4,84,500	8,90,625
8	Cost of production (Rs.)	2,00,000	2,50,000
9	Net income	2,84,500	6,40,625

He always uses chawki worms reared in private CRCs mainly from Shri Lakshmi Narasimha and Shri Venkateswara Bivoltine CRC, V. Kota. He uses Decol, Chlorin-dioxide, Asthra for disinfection of rearing house and bed disinfectants like Vijetha, Ankush green regularly and Capton+lime during winter for protecting the silkworm crops from diseases. He also adopts integrated method for management of uzi fly infestation by using anti-chamber, nylon nets, uzi trap and pouches of *Nesolynx thymus*. Due to adaptation of improved methods of cocoon yield increased to 75-80 kg per 100 dfls which in turn increased his net income source.

“With Sericulture, I’ m able to lead comfortable life by getting good crops and returns”.





ARUNACHAL PRADESH

 83,743 sq. km
  13,83,727
  65.38 %

Introduction

Arunachal Pradesh, the “**Land of Rising Sun**”, is located at the farthest point of North-eastern part of India and major portion is covered under forest. It is the home to some of the most magical lures, including Tawang, Bomdila, Ziro, Itanagar and Pasighat which have rich cultures and traditions.

Arunachal Pradesh is bounded by Assam and Nagaland to the South and shares international borders with Bhutan in the West, Myanmar in the East and is separated from China in the North. The state consists of 22 administrative districts viz., Tawang, West Kameng, East Kameng, Papumpare, Kradaddi, Kurung Kumey, Lower Subansiri, Upper Subansiri, West Siang, East Siang, Upper Siang, Lower Siang, Siang, Lower Dibang Valley, Upper Dibang Valley, Lohit, Anjaw, Namsai, Changlang, Tirap, Kamle & Longding.

The state is famous for creating intricate designs in handlooms with 27,286 numbers of handlooms and 33,041 handloom weavers. The state has rich tradition of Cane and Bamboo handicrafts.

Status of silk industry

Arunachal Pradesh is the biggest state in North-East having vast potential for development of all the 4 varieties of silk viz., mulberry, eri, muga and oak-tasar. Eri and muga rearing are mostly practiced in foot hill areas, mulberry in the middle altitude areas and oak-tasar in higher altitude areas. People of the state are traditionally skilled in weaving which is a household activity. Presently, about 140 hectares of land is covered under mulberry

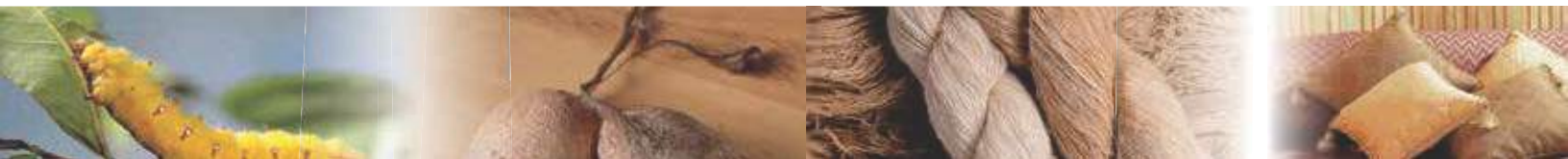
food plantation in the state involving around 8736 families from 542 villages.

Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	342	341	100	140
II	Mulberry raw silk (MT)				
	Bivoltine	1.2	3	2	2
	Crossbreed				0.30
	Mulberry total (I)	1	3	2	2.3
III	Vanya silk (MT)				
	Eri	10	32	42	50
	Muga	0.90	2	1	2
	Vanya total (II)	11	34	43	52
	Grand total (I+II)	12	37	45	54

District-wise status of sericulture (2017-18)

#	District	Raw silk production (MT)		
		Mulberry	Eri	Muga
1	West Kameng	-	1.00	-
2	East Kameng	-	2.00	-
3	Papumpare	0.35	6.00	0.15
4	Tirap	0.06	-	-
5	Kurung Kumey	-	-	0.33
6	Lower Subansiri	0.06	3.00	-
7	Upper Subansiri	-	2.00	-
8	West Siang	0.24	6.00	0.10
9	Upper Siang	-	2.50	-
10	East Siang	1.00	8.00	0.40
11	Siang	0.23	2.00	-
12	Lower Dibang Valley	-	3.50	0.30
13	Dibang Valley	0.17		-
14	Lohit	-	2.00	0.06
15	Namsai	0.19	6.00	0.08
16	Changlang	-	6.00	0.10
	Total	2.30	50.00	1.50





Arunachal Pradesh

The 16 districts of Arunachal Pradesh practise sericulture, mulberry, eri or muga and in certain cases more than one variety.

Schemes of Government of India

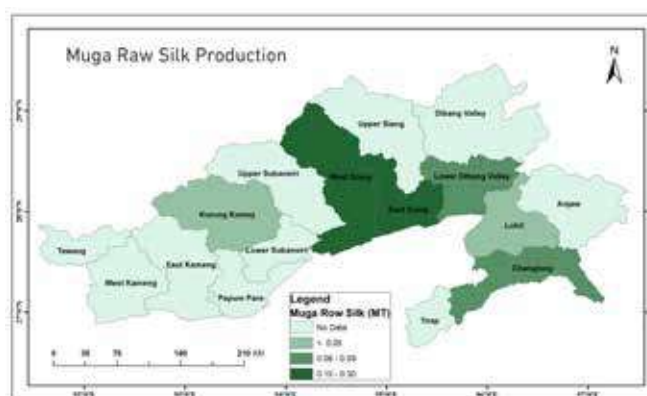
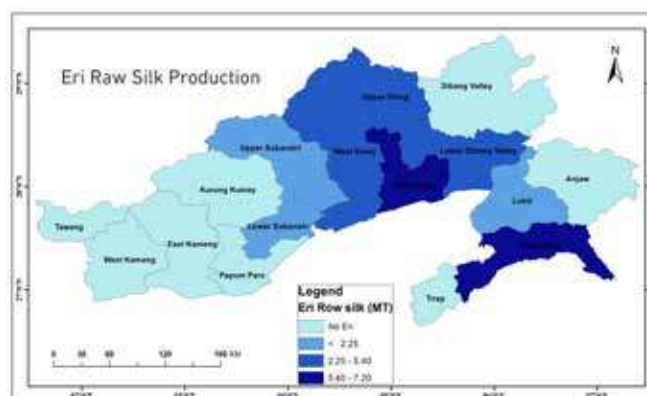
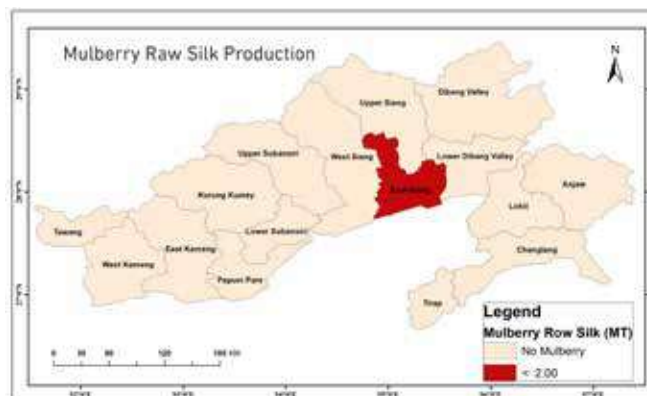
Government of India is providing continued support to Arunachal Pradesh for intensive development of sericulture in all its spheres for maximization of benefits from existing capacity as a part of consolidation efforts and for creating new infrastructure at farmers' level. Common facility centres for farm mechanization, reeling, spinning and silk weaving activities, besides, infrastructure for seed production for state governments.

Government of India has supported Arunachal Pradesh for implementation of Catalytic Development Programme (CDP), a centrally sponsored scheme from IX Plan to first 3 years of XII Plan. The CDP envisaged development of host plantation and post-cocoon infrastructure, up-gradation of silk reeling and processing facilities, enterprise development, capacity building, extension and publicity etc. Funds released by Central Silk Board to Arunachal Pradesh for implementation of the CDP from IX Plan to XI Plan and first 3 years of XII plan are as under:

(Rs. in crore)

IX Plan (1997-2002)	X Plan (2002-07)	XI Plan (2007-12)	XII Plan (2012-13 to 2014-15)	Total funds released
0.28	2.56	11.01	9.06	22.91

With a view to restructure centrally sponsored scheme, the Government of India discontinued the CDP during 2015-16 and introduced Silk Samagra (ISDSI).





North-East Region Textile Promotion Scheme (NERTPS)

Keeping in view the prospects and potential for sericulture development in Arunachal Pradesh and in the backdrop of CDP implemented from IX Plan to XII Plan. Government of India, under the umbrella scheme "North-East Region Textile Promotion Scheme" has given focus for sericulture development in Arunachal Pradesh under Integrated Sericulture Development Project (ISDP) and

Intensive Bivoltine Sericulture Development Project (IBSDP). The broad objective of the NERTPS under sericulture is to develop and modernize the sericulture sector in the state by providing the required government support in terms of raw material, seed banks, machinery, Common Facility Centres (CFC), skill development, design & marketing support, etc. Two sericulture projects under Integrated Sericulture Development Project (ISDP) and Intensive Bivoltine Sericulture Development Project (IBSDP) are under implementation. The details of the projects are as below:

Particulars	Project cost (Rs. in cr.)	Gol share (Rs. in cr.)	Project in	Project output	
				Beneficiary (Nos.)	Raw silk (MT)
ISDP (eri & muga) (2014-18)	18.42	18.42	8 districts & 24 blocks	1,805	79 MT during the project & 35 MT per annum thereafter.
IBSDP (mulberry) (2015-18)	29.47	26.20	3 districts & 5 blocks	1,144	20 MT during the project & 16 MT per annum thereafter.

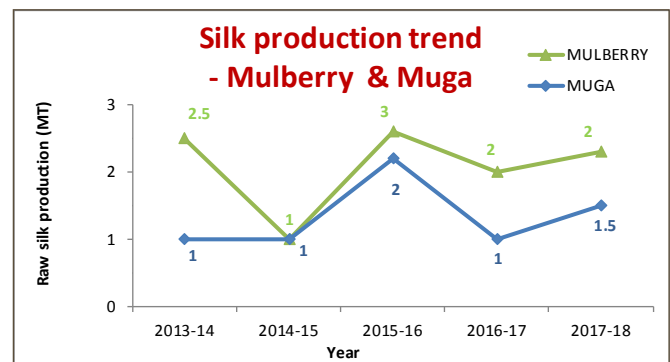
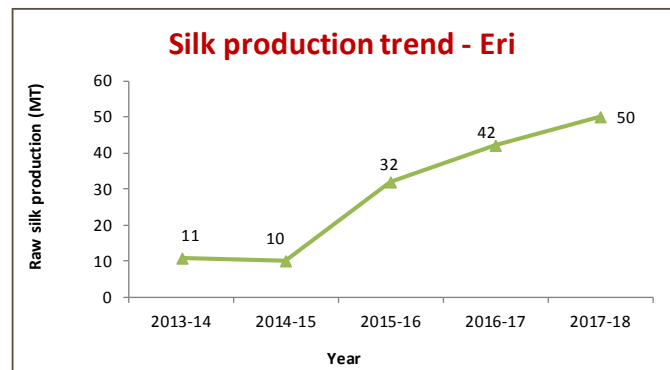
During 2017-18, assistance was provided to Arunachal Pradesh under NERTPS and hence, assistance was not sought under Silk Samagra.

Convergence programme

Future development programmes of sericulture in the state could be with convergence of schemes from Ministry of Textiles, Agriculture and Rural Development etc. Table below gives details of assistance availed by the state under convergence:

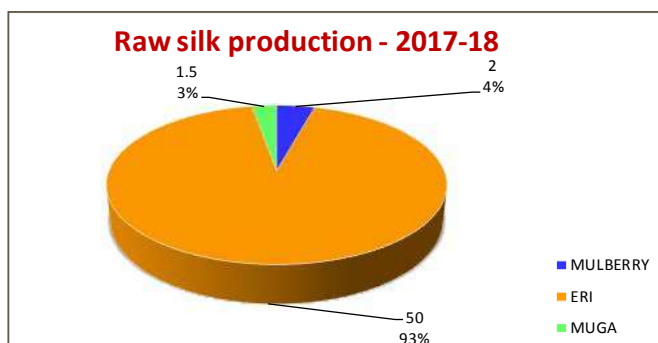
(Rs. in crore)				
Year	RKVY	MGNERGS	Others	Total
2014-15	0.4			0.4
2015-16	0.75			0.75
2016-17	1.23	-	--	1.23
2017-18	0.78	-	-	0.78
2018-19	5.25*	-	-	5.25*

*Sanction not received.





Arunachal Pradesh



Sericulture being high labour intensive sector, maintenance of farm throughout the year manually is difficult. So, the assistance provided under RKVY scheme, Ministry of Agriculture is utilized for mechanisation of farms.

State plan schemes

The state has given matching share for implementation of the schemes/programmes under "NERTPS". In addition to the support from Government of India, state has also state-specific plans for maintenance of infrastructure created over various plan periods and for implementation of specific components, which are not covered under any of the central sector and centrally sponsored schemes. The state has 521 manpower for implementation of centrally sponsored schemes, convergence and state specific sericulture programmes.

The details of financial assistance provided by the state for maintenance of infrastructure and related activities under sericulture sector are as under.

(Rs. in crore)

Year	2014-15	2015-16	2016-17	2017-18	2018-19
Amount	0.95	1.00	1.00	1.00	1.50

The funds from the state plan programmes were in respect of activities like plantation, silkworm rearing and infrastructure development at beneficiary and state level, besides maintenance of infrastructure available in the state created over a period of time.

Infrastructure under State and CSB for sericulture development

To support development of sericulture in all its spheres, the following infrastructure has been created in Arunachal Pradesh under State and Central Silk Board over different Plan periods. Also, Central Silk Board has established one Research Extension Centre at Sille.

Sector	Infrastructure	Under state
Muga	Muga seed farm	01
	Muga reeling centre	10
	Muga grainage	01
Eri	Eri production centre	21
	Ambar charkha unit	03
	Spinning centre	02
	Eri grainage	01
Mulberry	Commercial grainage	01
	Multiplication centres	28
	Extension centres	28
	Cottage basin reeling units	05
	Multi-end reeling unit	01
Oak Tasar	Seed production units	01
	Reeling unit	01
Others	CFC	03
	Centre of excellence	01

Post-cocoon sector

The following infrastructure at state and beneficiary level are available to support value addition of cocoons produced within the state:

Infrastructure	No.
Cottage basin reeling units	1
Twisting units	1
Vanya reeling/spinning units	1





Marketing

There is no organized marketing system in Arunachal Pradesh. However, the state government facilitates the farmers to market the cocoons produced by them at identified locations in the state and invite reelers and other consumers to participate in open auction. This marketing system is not on a daily basis due to the reason that the sericulture activity in Arunachal Pradesh is seasonal.

Way forward

- There is much attention required for value addition of the cocoons produced within North-East.
- Development of sericulture in the aspirational district of Namsai.
- To establish a separate department of sericulture.
- The state has also tremendous scope for development of eri Industry.
- Wild sanctuary for muga has been taken up to protect the species.

Arunachal Pradesh is being an important state in the Sericulture Map of India, a project on large scale eri farming has been approved to cover 1000 acres of plantation in the Blocks of Papumpare, Siang, East Siang, West Siang and East Kameng districts covering 1270 beneficiaries.

Success story



Smt. Bomchak Taipodia,
W/o. Shri Mikar Taipodia,
Village: Bali,
District: West Siang,
Arunachal Pradesh - 791 101.

Smt. Bomchak Taipodia (34 years) has been involved in muga culture since 2008, after undergoing skill training in muga silkworm rearing and quality cocoon production under CDP from Central Silk Board. She raised Som plantation in 3 acre plot and achieved an average yield of 1 lakh cocoons from 3000 dfls from 2 crops of muga cocoons (Jerua & Kotia). She also constructed a muga spinning/ rearing house in 2010. She earns an annual income of Rs.1 lakh.

“We have a large family of 10 members and I am thankful to sericulture that improved economic conditions of our family and we lead a decent life. Now, I am able to send my children to high school for quality education.”





ASSAM

 78,438 sq. km.
  3,12,05,576
  72.19%

Introduction

Assam, with rich biodiversity is the most spectacular looking state in the country and known as the Gateway to the North-East India. The endless expanses of tea plantation, stretching all over the state, look majestic and it is blessed with some incredible gems. Assam is situated in South of the eastern Himalayas along the Brahmaputra and Barak River valleys. The state is bordered by Bhutan and Arunachal Pradesh to the North, Nagaland and Manipur to the East, Meghalaya, Tripura, Mizoram and Bangladesh to the South, and West Bengal to the West.

Assam is known for Assam-tea and Assam-silk. The state has conserved the one-horned Indian rhinoceros from near extinction, along with the wild water buffalo, pygmy hog, tiger and various species of Asiatic birds and provides one of the last wild habitats for the elephant. The Bodoland Territorial Council (BTC) in Assam has jurisdictions in the bodoland territorial area districts. It is an autonomous administrative council constituted under the Sixth Schedule of the Constitution of India covering an area of about 8795 sq. km. Assam is famous for creating intricate designs in handlooms and holds 1st position in the country with 11,11,577 number of handlooms and has 16,43,453 handloom weavers.

Status of silk industry

Assam endowed with numerous flora and fauna which include varieties of sericigenous insect and their food plants. Agriculture is the primary occupation of the rural populace of Assam. Besides, agriculture and horticulture, sericulture plays an important role in providing subsidiary income. Silk from Brahmaputra valley was marketed to

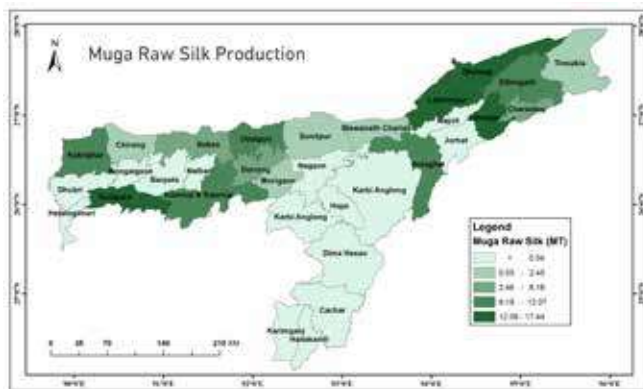
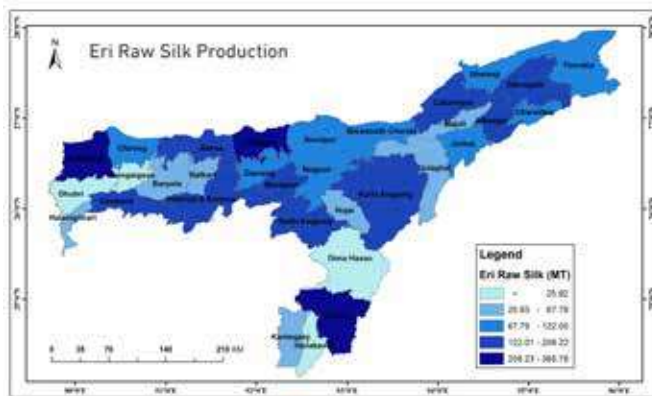
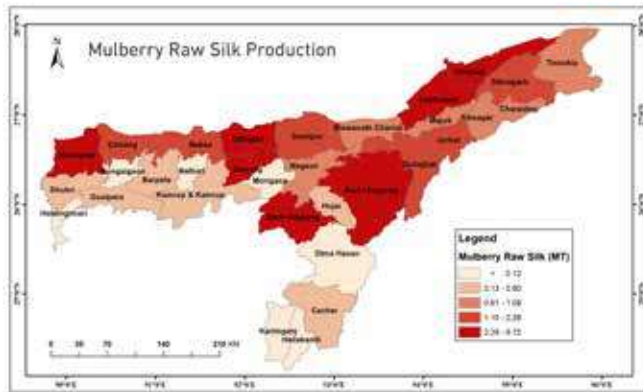
Magadh, Aung, Mithila and Brahmadesh during 1340 BC. Sualkuchi, in Kamrup district has large number of cottage industries engaged in handloom, for which it is also known as the "Manchester of Assam". The art of silkworm rearing and silk weaving have been closely associated with the culture and tradition amongst the women folk of Assam. The climatic condition prevails in the state is conducive for commercial exploitation of muga, eri, mulberry and oak tasar silk. The state consists of 35 districts including BTC. Sericulture is concentrated in Kamrup & Kamrup, Morigaon, Nagaon, Hojai, Golaghat, Jorhat, Majuli, Sibsagar, Charaideo, Dibrugarh, Tinsukia, Dhemaji, Lakhimpur, Sonitpur, Biswanath Chariali, Darrang, Nalbari, Barpeta, Bongaigaon, Dhubri, Hatsingimari, Goalapara, Cachar, Karimganj, Hailakandi, Dima Hasao, Karbi Anglong in Assam and Kokrajhar, Chirang, Baksa, Udalguri in Bodoland.

Presently, 33,920 hectares of land is covered under silkworm food plantation in the state by involving around 3,53,000 families from 20, 333 villages and 17,916 reelers. Assam is the third largest silk producing state in India. The state produces around 85% of global muga silk and 62% of country's Eri Silk production. Assam is the highest producer of eri and muga silk in India. BTC contributes more than 30% of Eri silk production in the state. More than 40% concentration of Handlooms, out of the total handlooms in NE is present in Assam.

Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	7356	7765	7898	8594
II	Mulberry raw silk (MT)				
	Bivoltine	29	33	52	59
	Cross Breed	2	7		
	Total (I)	31	40	52	59
III	Vanya silk (MT)				
	Eri	3055	3143	3619	4645
	Muga	136	142	139	157
	Vanya Total (II)	3191	3285	3759	4802
	Grand Total (I+II)	3222	3325	3811	4861





The strength of the state is eri silk production followed by mulberry and muga. There has been incremental increase in production of all varieties of silk.

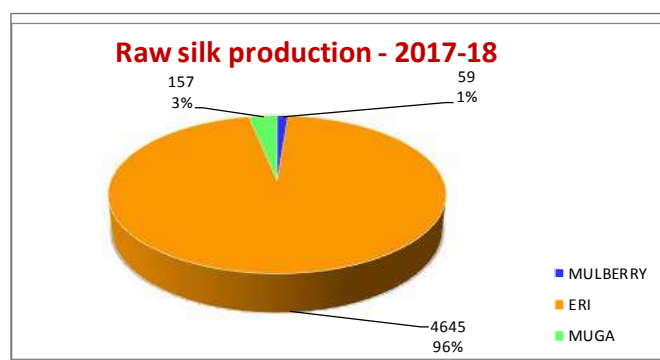
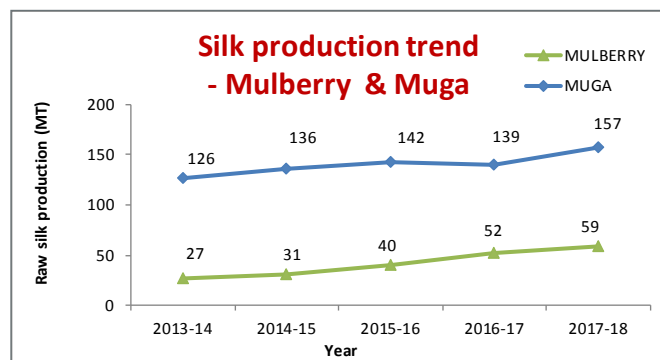
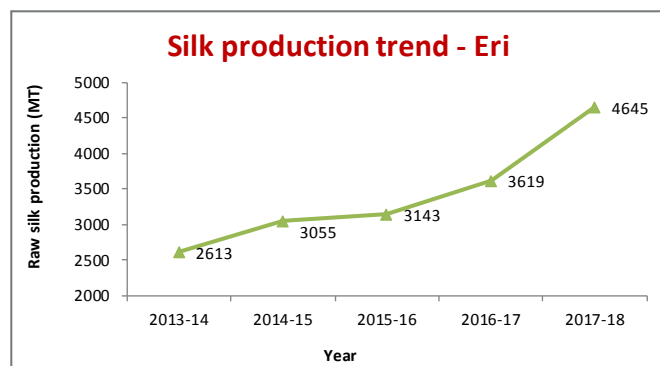
District-wise status of sericulture (2017-18)

#	District	Raw Silk Production (MT)		
		Mulberry	Eri	Muga
1	Kamrup & Kamrup (Metro)	0.52	144.54	13.07
2	Morigaon	0.76	133.37	1.58
3	Nagaon	0.83	214.91	0.14
4	Hojai	0.29	2	
5	Golaghat	2.17	160.98	8.52
6	Jorhat	2.41	171.89	0.29
7	Majuli	0.1	2	-
8	Sivasagar	1.03	1169.12	16.74
9	Dibrugarh	1.59	138.5	10.55
10	Tinsukia	1.26	111.16	1.82
11	Dhemaji	2.84	133.37	16.47
12	Lakhimpur	7.76	91.72	27.31
13	Sonitpur	2.09	178.46	0.87
14	Biswanath Chariali	-	1	0.2
15	Darrang	9.7	80.26	6.18
16	Nalbari	0.35	51.76	0
17	Barpeta	0.7	126.55	0.54
18	Bongaigaon	0.48	29.81	0.3
19	Dhubri	0.38	97.94	-
20	Hatsingimari	0.1	1	
21	Goalpara	0.87	143.39	15.58
22	Cachar	0.38	57.91	1
23	Karimganj	0.51	41.12	-
24	Hailakandi	0.38	27.77	-
25	DimaHasao	0.65	87.27	-
26	Karbi Anglong	3.88	157.32	0.04
27	Kokrajhar	4.25	250.7	9.3
28	Chirang	2.55	152.6	6.4
29	Baksa	4.25	250.7	8.6
30	Udalguri	5.95	436	11.5
	Total	59.03	4645.12	157





Assam



Schemes of Government of India

Government of India is providing continued support to Assam for intensive development of sericulture in all its spheres for maximization of benefits from existing capacity as a part of consolidation efforts and for creating new infrastructure at farmers' level, common facility centres for farm mechanization, reeling, spinning and silk weaving activities, besides seed infrastructure for

state government. These interventions are expected to transform the state from the present level of silk production to silk hub of India in coming years by providing self employment opportunities in the hinterland and protect the heritage with ultimate aim of *Make in India* in an eco- friendly atmosphere.

Government of India has supported Assam for implementation of Catalytic Development Programme (CDP), a centrally sponsored scheme from IX Plan to first 3 years of XII Plan. The CDP envisaged development of host plantations, post-cocoon infrastructure, up-gradation of silk reeling and processing facilities, extension, capacity building, enterprise development, and publicity etc. Implementation of CDP was instrumental in raising the status of Assam in sericulture sector. Funds released by Central Silk Board to Assam for implementation of the CDP from IX Plan to 3 years of XII Plan are as under:

(Rs. in crore)

	IX Plan (1997-2002)	X Plan (2002-07)	XI Plan (2007-12)	XII Plan (2012-13 to 2014-15)	Total funds released
Assam	4.88	20.96	79.01	68.86	173.71
BTC	-	3.12	24.18	27.71	55.01

With a view to restructure centrally sponsored scheme, the Government of India discontinued the CDP during 2015-16, and introduced Silk Samagra (ISDSI).

Silk Samagra

Silk Samagra is a comprehensive central sector scheme of Central Silk Board under implementation from 2017-18 to 2019-20, for overall development of sericulture industry in the country, implemented directly as well as through state governments. Central Silk Board has been supporting states towards implementation of various beneficiary-oriented components under mulberry, vanya and post-cocoon sectors. The programme catalyzes the efforts of state governments to improve the quality, productivity and production of raw silk besides, generating employment opportunities particularly in the rural areas. An amount of Rs.0.21 crore has been released during 2018-19.



North East Region Textile Promotion Scheme (NERTPS)

Keeping in view the prospects and potential for sericulture development in Assam and in the backdrop of Catalytic Development Programme implemented from IX Plan to XII Plan, Government of India, under the umbrella scheme "North East Region Textile Promotion Scheme" has given

focus for Sericulture development in Assam under Integrated Sericulture Development Project (ISDP) and Intensive Bivoltine Sericulture Development Program (IBSDP). The broad objective of the NERTPS under Sericulture is to develop and modernize the sericulture sector in the state by providing the required Government support in terms of raw material, seed banks, machinery, common facility centres, skill development, design & marketing support, etc.

Assam

Particulars	Project cost (Rs. in cr.)	Gol share (Rs. in cr.)	Project in	Project Output	
				Benef.(No.)	Raw silk (MT)
ISDP (eri&muga) (2014-18)	66.67	47.42	8 districts & 18 blocks	5,965	196 MT during the project & 93.64 MT p.a thereafter
IBSDP (mulberry) (2015-18)	29.55	26.28	1 district & 2 blocks	1,144	29 MT during the project & 17.2 MT p.a thereafter

BTC

Particulars	Project cost (Rs. in cr.)	Gol Share (Rs. in cr.)	Project Area	Project Output	
				Benef. (No.)	Raw Silk (MT)
ISDP (eri & muga) (2014-18)	34.92	24.68	4 districts & 10 blocks	3,356	171 MT during the project & 7.5 MT per annum thereafter
IESDP (eri) (2015-18)	11.41	10.61	1 district & 2 blocks	654	60 MT during the project & 25 MT per annum thereafter
Soil to silk (eri) (2016-19)	55.36	53.12	1 district & 4 blocks	3,526	245 MT during the project & 100 MT per annum thereafter
IBSDP (mulberry) (2015-18)	30.06	26.75	2 district & 3 blocks	1,188	26 MT during the project & 15 MT per annum thereafter

Convergence programme

Future development programmes of sericulture in the state could be with convergence of schemes from Ministry of Textiles, Agriculture and Rural Development etc. The Table below gives details of assistance availed by the state under convergence.

(Rs. in crore)

Year	RKVY		MGNREGA		Others	
	Assam	BTC	Assam	BTC	Assam	BTC
2014-15	-	-	-	-	0.69	-
2015-16	0.50	-	-	-	5.96	-
2016-17	-	-	-	-	9.15	-
2017-18	-	-	-	-	9.38	-
2018-19	-	-	-	-	82.00	-





Assam

Schemes of the State

State has created a separate department for development of sericulture. Besides, the state has given matching share for implementation of the schemes/programmes under NERTPS. In addition to the support from Govt. of India, State has also state-specific plans for maintenance of infrastructure created over various plan periods and for implementation of specific components, which are not covered under any of the central sector and centrally sponsored schemes. The state has 2635 manpower for implementation of centrally sponsored schemes, convergence and state specific sericulture programmes. The details of financial assistance provided by the State for maintenance of infrastructure and related activities under sericulture sector are as under:

(Rs. in crore)

State	2014-15	2015-16	2016-17	2017-18	2018-19
Assam	79.95	74.87	82.84	204.07	126.30
BTC	3.05	3.05	3.85	3.85	4.65

Note: Figures includes Plan & Non-Plan

The funds from the State Plan programmes were in respect of activities like plantation, silkworm rearing, and infrastructure development at beneficiary and state level, besides maintenance of infrastructure available in the state created over a period.

Infrastructure under State and CSB

To support development of sericulture in all its spheres, the following infrastructure has been created under State and Central Silk Board over different Plan periods.

Sector	Infrastructure (Assam)	Under state	Under CSB
MUGA	RO, Guwahati	-	1
	Field Lab, Titabar	-	1
	CMER& TI, Lahdoigarh	--	1
	RMRS, Boko	--	1
	REC, Lakhimpur	--	1
	MSSO, Guwahati	--	1
	P3 unit, Narayanpur, Hahim & Paliapool	--	3
	SSPC, Kaliabari	--	1
	RSTRS, Guwahati	--	1
	Village Grazing Reserves (VGR)	67	--
	Farm cum Seed Multiplication Centre	12	--
	Research sub station	1	--
	Reeling unit	14	--
	ESSPC, Azara	--	1
	Production Centre (ESG)	26	--
Mulberry	Concentration Centre (ECC)	94	--
	Nursery	1	--
	Spinning centre	25	--
	Ambar charkha unit	5	--
	BSF, Topatali		1
	RSRS, Jorhat	--	1
	REC, Mongaldoi	--	1
	SSPC, Jorhat		1
	P3-farm	2	--
	P2-farm	2	--
	P1-farm cum grainage	8	--
	Cold storage	1	--
	Collective Mulberry Garden(CMG)	109	--
	Chawki rearing centres	6	--
	Reeling Unit	26	--
Multi-end Reeling units	3	--	
Cottage Basin	21	--	
Twisting Plant	3	--	





Sector	Infrastructure (Assam)	Under state	Under CSB
OAK-TASAR	Tasar production centre	5	--
Muga	Basic Muga Seed Farm	2	-
	Village Grazing Reserves (VGR)	2	-
	P-3 Basic Seed Station, Kowabil, Kokrajhar	-	1
Eri	Eri Seed Grainage (ESG)	4	-
	Eri Concentration Centres (ECC)	22	-
	Eri Spinning Training Centre (ESTC)	5	-
	Eri Nursery	1	-
	Cocoon Bank	1	-
	Indiluo Eri Spun Mill, Kokrajhar	-	-
Mulberry	Collective Mulberry Garden (CMG)	15	-

Post-cocoon sector

The following infrastructure at State level and beneficiary level are available to support value addition of cocoons produced within the state.

Infrastructure	Assam	BTC
No. of multi-end reeling units	1	2
No. of twisting units	-	3

Marketing

There is no organised marketing system in the state of Assam. However, the state government facilitates the farmers to market the cocoons produced by them at

identified locations in the state and invite reelers and other consumers to participate in open auctions. This marketing system is not on a daily basis due to the reason that the sericulture activity in Assam is seasonal. The state has established cocoon banks at Boko (Kamrup), Golaghat and Lakhimpur.

Way forward

- Strength of BTC in ericulture should be fully explored for improving productivity in eri silk sector
- It is proposed to establish Women Technology Park in silk sector
- There is much attention required for value addition for the cocoons produced within NE in the backdrop of inherent strength of this region in weaving.
- Development of sericulture in the Aspirational Districts-Goalpara, Barpeta, Darrang, Baksa, Udalguri and Hailkandi.
- Wild sanctuary for muga has been taken up to protect the species.

Keeping in view of the huge potential for eri production and the demand for high quality spun yarn for industries, Ministry has approved to establish a new eri spun silk mill at Biswanath in Assam and Baksa in BTC to produce of high quality eri spun silk yarn.





Assam

Success story



Smt. Pratibha Nath

W/o. Shri Jagannath Nath

Village: Hengalpara

Taluk: Hengalpara

District: Darrang

Assam: 784145

Mobile: 8011466238

Smt. Pratibha Nath (50 years) has been involved in mulberry sericulture since 2012-13. With assistance under CDP, she could construct CRC building and purchased chawki rearing equipment. Besides taking up chawki rearing centre, she grabbed the opportunity of supplying saplings by raising kisan nursery. She gained the required technical expertise through Beneficiary Empowerment Programme. She started with production of 65000 saplings during 2012-13, which she increased to 1 lakh during 2013-14 and 1.4 lakh during 2014-15. She raises S-1635 mulberry saplings in two batches a year in her 2 acre plot that fetches her with an annual income of Rs.3.25 lakh.

“Sericulture has improved my life from below poverty line (BPL) family to above poverty line (APL) family besides, improving my life style and health & education of my children. Regular income from sericulture helped me to construct own house.”



BIHAR

 94,163 sq. km.
  10,40,99,452
  61.8%

Introduction

Bihar is basically an agricultural state, situated about 173 ft. above the mean sea level. The plain is divided into two unequal halves by the river *Ganga* which flows through the middle from West to East.

Soil in Bihar is alluvial and partly sandy loam rejuvenated every year by constant deposition of silt, clay and sand, brought by different streams. There are three major types of soil in Bihar. Piedmont swamp soil found in north western part of west Champaran district, Terai soil found in northern part along with the border of Nepal and the plain of Bihar is covered by Gangetic alluvium soil.

The state enjoys tropical to sub-tropical climate with moderately hot summer (March to May) and winter (December to February). Maximum temperature in the state ranges from 38-42°C and minimum temperature from 8 to 12°C. Rainfall is spread over 4-5 months during the year and on an average the state receives around 1200-1700 mm of rainfall annually with south-western monsoon during June to September. Relative humidity ranges from 65 to 95%. The main agricultural crops of Bihar are cereals, sugarcane, pluses and jute.

Status of silk industry

In Bihar, sericulture industry is in practice since pre-historic period. Rearing of Tasar silkworm is ancestral and deep rooted among *Adivasis* (Tribal). The agro-climatic conditions prevailing in the state are suitable for tasar, eri and mulberry sericulture. Biharis left with tasar growing areas in some of south Bihar district viz., Banka, Jamui, Munger, Nawada and Kaimur. Of late, efforts were made to increase tasar activities through special SGSY projects in the district of Banka and Jamui. Mulberry sericulture is

confined to Kishanganj, Purnea, Araria, Supal, Saharsa and Madhepura district of North Bihar. Eri culture is practiced to some extent in the state and activities are restricted to Bakhtiarpur, Begusarai and Samastipur district. There are 26,394 sericulturists in 541 villages and 7645 looms engaged in the silk weaving. Trends in silk production as on March 2018 are depicted in Table below.

Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	693	743	421	557
II	Mulberry raw silk (MT)	12	19	23	17
III	Vanya silk (MT)				
	Tasar	33	41	44	36
	Eri	8	8	10	10
	Total	41	48	53	46
	Grand Total (Mulberry +Vanya)	53	67	77	63

District-wise production during 2017-18

#	District	Mulberry plantation (ha)	Raw silk production (MT)		
			Mulberry	Tasar	Eri
1	Kishanganj	85.00	5.307		
2	Supaul	95.34	5.151		
3	Purnea	117.58	3.484		
4	Araria	50.48	1.103		
5	Saharsa	50.32			
6	Banka	8.55	0.65		
7	Vaishali	8.38			
8	Katihar	68.70	0.846		
9	Madhepura	58.80	0.628		
10	Banka	10.50		24.05	
11	Munger			1.73	
12	Nawada			1.38	
13	Pradan			8.88	
14	Muzaffarpur	3.54	0.005		9.68
	TOTAL	557	17	36	10





Bihar

Schemes of Government of India

Government of India is providing support to Bihar for intensive development of sericulture for maximization of benefits from existing capacity as a part of consolidation efforts and for creating new infrastructure at farmers level, Common Facility Centre for farm mechanization, reeling, spinning and silk weaving activities, besides infrastructure for seed production for State Governments. These interventions are expected to transform the state from the present level of silk production to *silk hub* of India in coming years by providing self employment opportunities in the hinterland, protect the heritage with ultimate aim of "Make in India" in an eco- friendly atmosphere.

Central Silk Board has supported Bihar for implementation of Catalytic Development Programme (CDP), a centrally sponsored scheme from XI to XII plan. The CDP envisaged development of host plantations, post-cocoon infrastructure, extension, upgradation of silk reeling and processing facilities, capacity building, enterprise development, etc. Fund released by Central Silk Board for Bihar for implementation of CDP from XI Plan to XII plan is as under:

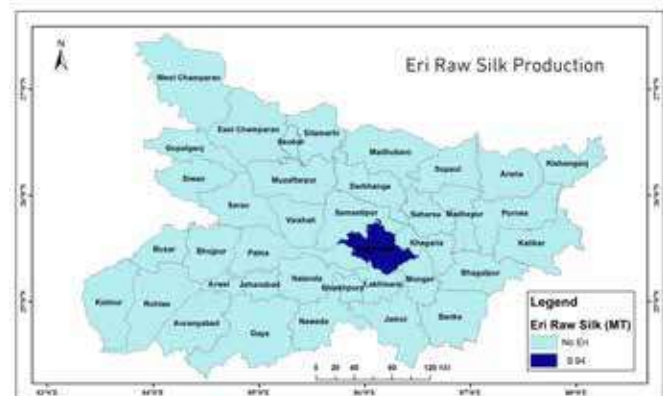
(Rs. in lakh)

XI Plan (2007-12)	XII Plan (2012-17)	Total funds released
544.585	760.465	1305.05

Apart from this, Central Silk Board has released a sum of Rs. 89.38 Lakh under TSP and Rs. 103.89 Lakh under SCSP. Based on the decision of Government of India to restructure Centrally Sponsored Schemes, the CDP was discontinued during 2015-16.

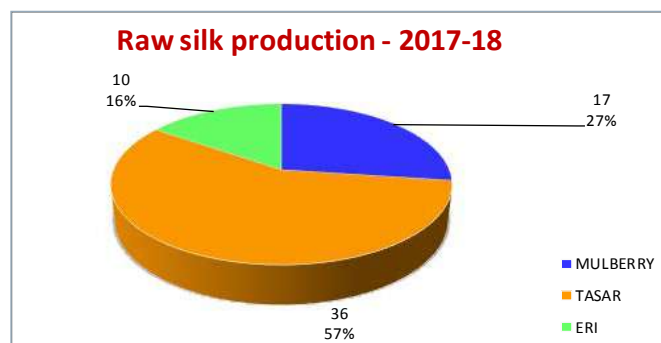
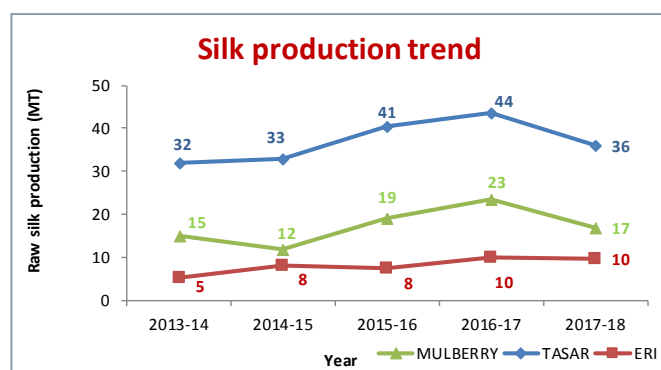
Silk Samagra

This is a comprehensive Central Sector Scheme of Central Silk Board (CSB) under implementation from 2017-18 to 2019-20, for overall development of sericulture industry in the country, implemented directly as well as through state Governments. Central Silk Board has been supporting





state towards implementation of various beneficiary oriented components under mulberry, *Vanya* and post-cocoon sectors. These interventions are important tools for transfer and adoption of improved technology packages developed by the Research Institutes of Central Silk Board. The programme catalyzes the efforts of State Government to improve the quality, productivity and production of raw silk besides, generating employment opportunities particularly in the rural areas. The interventions cover the major areas viz., (a) Development and expansion of host plant, (b) Strengthening and creation of silkworm seed multiplication infrastructure, (c) Development of farm and post-cocoon infrastructure, (d) Upgradation of reeling and processing technologies in silk and (e) Capacity building through skill development / Enterprise Development Programme. Department of Sericulture, Bihar has submitted a project proposal of Rs.103.79 lakh for the year 2018-19 under this project.



State Plan schemes

Year	Sanctioned (lakh Rs.)
2014-15	1278.72
2015-16	3050.14
2016-17	3934.50
2017-18	1199.16
2018-19	23.50

Convergence programmes

Under this programme, two mega projects are running in the state, namely, *Mukhyamantri Tasar Vikas Pariyojna* & *Mukhyamantri Mulberry Koshi Vikas Pariyojna* during XII year plan with convergence from state plan, RKVY, MNREGA.

Mukhyamantri Tasar Vikas Pariyojana

# District	Year-wise plantation (ha)				Productive plantation (ha)
	2012-13	2013-14	2014-15	2015-16	
Private land					
1 Banka	271	643	753	1189	918
2 Munger	25	172	25	275	0
3 Nawada	1	-	-	-25	0
4 Kaimur	5	-	-	-	5
Total	302	815	778	1489	923

# District	Year-wise Plantation (ha)				TOTAL
	2012-13	2013-14	2014-15	2015-16	
Forest land					
1 Banka	-	-	3020	933	3953
2 Kaimur	-	-	250	240	490
3 Nawada	-	-	200	260	460
4 Darbhanga	-	-	-	8	8
5 Rohtas	-	-	200	-	200
6 W. Champaran	-	-	-	9.6	9.6
7 Jamui	-	-	500	500	1000
Total			4170	1950.6	6120.6



Bihar

Mukhyamantri Koshi Mulberry Pariyojana

#	District	Target	Year-wise plantation (acre)					Total
			2014-15	2015-16	2016-17	2017-18	2018-19	
1	Saharsa	500	28.5	30	114	46.5	35.5	754.5
2	Purnea	500	-	27	90	80	395.5	1092.5
3	Araria	500	-	145	18.5	86	77	826.5
4	Kishanganj	500	-	-	111	153.5	109	873.5
5	Katihar	500	-	22.5	-	-	-	522.5
6	Madhepura	500	-	50.5	60.5	32	115	758
7	Supaul	500	35.5	70	214	42.5	93	955
Total		3500	64	345	608	440.5	825	5782.5

Infrastructure under State and Central Silk Board

Central Tasar Research & Training Institute (CTR&TI) at Ranchi meets research extension and training needs of tasar producing states including Bihar. Apart from the above, Central Silk Board has also established one P₃ farm for mulberry at Purnea and cluster development centre at Kishanganj and Saharsha for promotion of mulberry & ericulture in North Bihar.

The CSTRI, with its Textile Technology Laboratory and Demonstration cum Technical Service Centre (DCTSC) at Bhagalpur provides the required support in post-cocoon areas of reeling spinning and weaving to the entrepreneurs of Bihar as well as adjoining states of Jharkhand. Similarly, the Weavers Service Centre (WSC) of Ministry of Textiles, Government of India at Bhagalpur renders necessary services to weavers of the state. Details of Central Silk Board infrastructure in the state are given below:

Name of the Unit	Location	Activities/ Mandates
Regional Office	Patna	Liaison office for necessary co-ordination with the state for the overall development of sericulture.
P2 Farm	Purnea	Production & supply of P3 & P2 mulberry basic seed.
Testing Textile Laboratory /DCTSC	Bhagalpur	Testing quality of silk of new technologies in cooking, reeling, weaving & dyeing.

The state has a separate Directorate of Handloom & Sericulture under the Department of Industries headed by the Director (Handloom & Sericulture). An officer of Indian Administrative Service, Joint Director (Tech) and Deputy Director of Industries (Sericulture) lead the sericulture wing with the help of Assistant Director of Industries (Sericulture). At the district/ field level, all the activities of the Department of Handloom & sericulture are implemented through four Assistant Directors of Industries (Sericulture) and in the few districts through the General Manager of District Industries Centre. There are 36 Centers/ Office established in the different districts of the state for the development of sericulture in the state. Detailed sector-wise infrastructure available with the state is summarized on the next page.





Name of the Unit/ Sector	No.
Mulberry Extension cum Training Centre	8
Mulberry Farm	1
Mulberry Extension Sub-centre	4
Pilot Project Centre	5
Eri Silk Farm	1
Mulberry Reeling Training Centre	2
Tasar Marketing Organization	1
Bihar Institute of Silk & Textiles	1
Office of Assistant Director of Industries (Seri.)	4

Post-cocoon Sector

Reeling Clusters

Bhagalpur (Mulberry), Nathnagar, Raghunathpur, Puraini, Sugampur and Kotoria (Tasar).

Weaving Clusters

Bhagalpur, Gaya, Kadirganj, Biharsharif, Rohtas, Bhaburia, Madhubani, Saharsa, W. Champaran.

Marketing of Tasar cocoons

There is no organized marketing system for tasar products specially seed cocoons, commercial cocoons, silk yarns, etc., in the state. In order to ensure remunerative prices for tasar cocoons & silk yarn and also arrest exploitation of tasar cocoons, producers by middlemen, Central Silk Board has established a sub-depot of Raw Material Bank for Tasar at Bhagalpur. This unit of RMB is playing vital role in checking marketing price of *Vanya* silk

commodities. The sub-depot purchases cocoons directly from the rearers in different weekly hats of Bihar and also extends market support to KVIC, NGOs, private, reelers and weavers. In addition, *PRADAN* an NGO working in the state also purchases cocoons directly from producers. During last few years the prevailing market price of tasar cocoons remained higher than the minimum support price fixed by RMB.

Way forward

- Integration of interventions under Mukhyamantri Tasar Vikas Pariyojana like plantations with seed multiplication infrastructure under special projects implemented by Central Silk Board through PRADAN and initiatives for value addition.
- Involvement of Jeevika with clear cut action plan and involvement of resource agencies/ personnel in field and headquarters.
- Seed multiplication initiatives on scientific lines in mulberry by utilizing seed rearers nurtured by Central Silk Board unit at Kishanganj besides integrating with interventions under Mukhyamantri Koshi Mulberry Pariyojana and CDP/CSS.
- Establishment of functional marketing system through cocoon market in mulberry and cocoon banks/yarn banks in tasar.
- Focus on Post-cocoon and processing sector in view of skilled manpower and established cluster in Bhagalpur.





Bihar

Success Story



Smt. Aasiya Bibi

W/o. Shri Salimuddin

Village: Maida

P.O.: Singhia

District: Kishanganj

Bihar - 855 107

Mobile: 9851116416



Smt. Aasiya Bibi (55 years) took up mulberry silkworm rearing in 1990. She harvests more than 230 kg of cocoon per year from her half-an-acre mulberry plantation (S1 & S-1635) with a productivity of around 37 kg/100 dfls. During 2013-14, she earned a net income of Rs.29,860/- from the activity. Due to adoption of improved package of practices, her productivity has shown significant improvement over the years.

“Sericulture has changed my life for better. I am earning an additional annual income of Rs.20,000/- to 25,000/- by raising saplings and supplying to other farmers. Income from sericulture has helped me in getting my five daughters married and providing education to my son. Besides, I have been able to construct a house from my income.”





CHHATTISGARH

 1,35,191 sq. km
  2,55,45,198
  70.28%

Introduction

The new state Chhattisgarh in India is divided into 16 revenue districts. Geographically, the state is divided into three agro-climatic zones such as Chhattisgarh plains, Bastar plateau and North hilly region. The state Government has decided to diversify the agricultural activities and sericulture has been included in the diversification list of crops. The Strength, Weakness, Opportunity and Threat (SWOT) analysis was conducted in assessing the status, potential, economic viability and the technological intervention need planning for the further growth and expansion of the industry.

Status of silk industry

No. of sericulture villages	1647
No. of sericulture farmers	57151
No. of reelers	1119

Chhattisgarh is the second largest producer of tasar silk in the country. Tasar sericulture is a traditional occupation of many tribal communities. The agro-climatic conditions in the state are also suitable for the development of mulberry sericulture and eri-culture. During 2017-18, the state has achieved production of 532 MT against the target of 405 MT.

Silk production trends

Variety	2014-15	2015-16	2016-17	2017-18
Mulberry plantation (ha)	744	771	322	261
Mulberry raw silk production (MT)				
Bivoltine	0.54	0.35	0.32	0.3
Crossbreed	8	8	7	8
Total	8	9	8	9
Vanya raw silk production (MT)				
Tasar	225	254	353	523
Grand Total (Mulberry + Vanya)	233	263	361	532

District-wise raw silk production during 2016-17

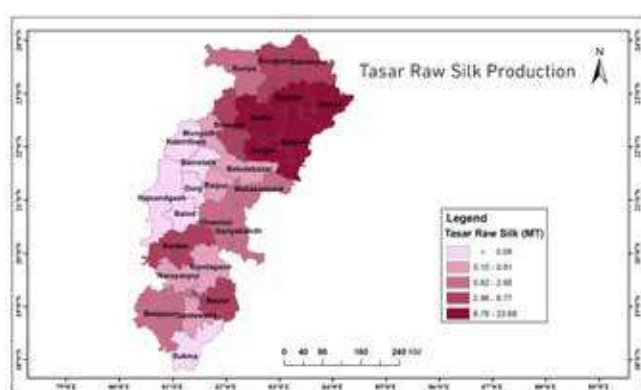
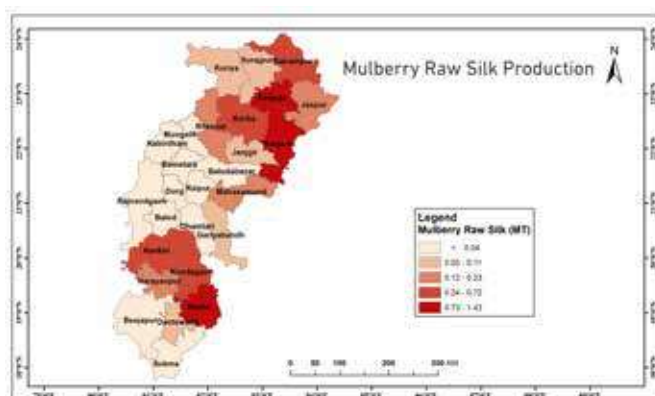
#	District	Raw silk production (MT)	
		Mulberry	Tasar
1	Janjgir	0.1	7.08
2	Bilaspur	0.18	6.13
3	Mungelli		0.51
4	Korba	0.5	23.68
5	Sarguja	1.43	7.82
6	Seed Amb.	0.26	3.03
7	Surajpur	0.07	3.13
8	Balrampur		3.53
9	Balrampur Seed	0.72	
10	Koriya	0.11	2.95
11	Raigarh	1.12	22.54
12	Seed	0.28	1.04
13	Jaspur	0.22	12.87
14	Raipur	0	0.61
15	Gariyabandh	0.06	0.8
16	Baludabazar		0.13
17	Mahasamund	0.16	2.9
18	Dhamtari		0.81
19	Rajnandgaon		0.09
20	Bametara		0.08





Chhattisgarh

#	District	Raw silk production (MT)	
		Mulberry	Tasar
21	Kabirdham	0.04	0.04
22	Bastar	0.95	5.09
23	Narayanpur	0.23	0.3
24	Kondagaon	0.52	0.36
25	Dantewada	0.1	0.22
26	Sukma		0.05
27	Beejapur		2.38
28	Kanker	0.58	6.77
29	Natural grown		238.19
	Total	7.62	353.13



Schemes of Government of India

Government of India is providing continued support to Chhattisgarh State for intensive development of sericulture in all its spheres for maximization of benefits from existing capacity as a part of consolidation efforts and for creating new infrastructure at farmers' level, Common Facility Centres for farm mechanization, reeling, spinning and silk weaving activities, besides infrastructure for seed production for State Governments. These interventions are expected to transform the state from the present level of silk production to silk hub of India in coming years by providing self employment opportunities in the hinterland, protect the heritage with ultimate aim of "Make in India" in an environmental-friendly atmosphere.

Government of India has supported Chhattisgarh State for implementation of Catalytic Development Programme (CDP), a Centrally Sponsored Scheme from IX Plan to XII Plan. The CDP envisaged development of host plantations, post cocoon infrastructure, extension, upgradation of silk reeling and processing facilities, capacity building, publicity, enterprise development, etc.

Fund released by Central Silk Board to Chhattisgarh State for implementation of the Catalytic Development Programme (CDP) from IX Plan to XII plan are as under.

(Rs. in lakh)

IX Plan (1997-02)	X Plan (2002-07)	XI Plan (2007-12)	XII Plan (2012-17)	Total funds released
-	576.95	1703.16	1086.01	3366.12

Silk Samagra

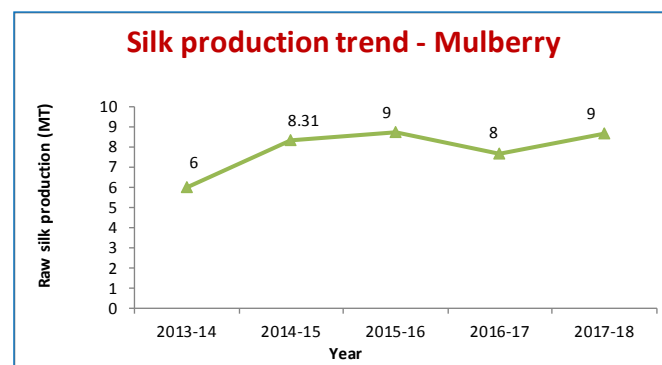
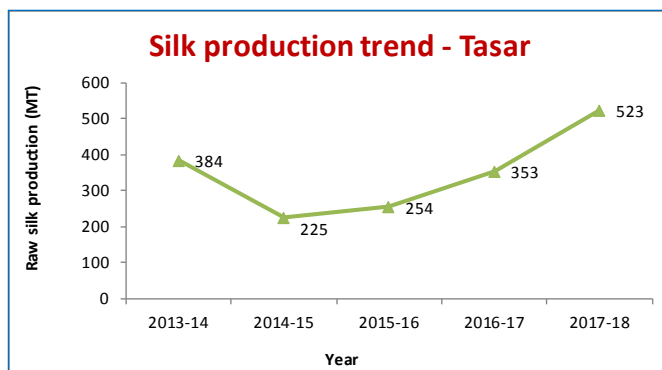
This is a comprehensive Central Sector Scheme of Central Silk Board under implementation from 2017-18 to 2019-20, for overall development of sericulture industry in the country, implemented directly as well as through State Governments. Central Silk Board has been supporting states towards implementation of various beneficiary oriented components under mulberry, vanya and post-cocoon sectors. These interventions are important tools for transfer and adoption of improved technology



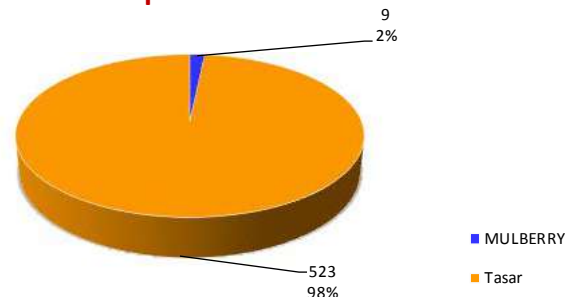


packages developed by the Research Institutes of Central Silk Board. The programme catalyzes the efforts of State Governments to improve the quality, productivity and production of raw silk besides, generating employment opportunities particularly in the rural areas. The interventions cover the major areas viz., (a) Development and expansion of host plant, (b) Strengthening and creation of silkworm seed multiplication infrastructure, (c) Development of farm and post-cocoon infrastructure, (d) Up-gradation of reeling and processing technologies in silk and (e) Capacity building through skill development / Enterprise Development Programme. The details of assistance are as below:

(Rs.in lakh)			
2015-16	2016-17	2017-18	2018-19
ISDSI		Silk Samagra	
224.09	186.53	1119.69	4.73



Raw silk production - 2017-18



State plan schemes

State has created a separate department for development of sericulture which looks after all issues relating to sericulture. Besides, the state has given matching share for implementation of the schemes/programmes under "NERTPS" as well as "Silk Samagra". In addition to the support from Government of India, State has also state-specific plans for maintenance of infrastructure created over various plan periods and for implementation of specific components, which are not covered under any of the Central Sector and Centrally Sponsored schemes. The details of financial assistance provided by the state for maintenance of infrastructure and related activities under sericulture sector are as under:

(Rs. in lakh)	
During XII plan (2012-17)	2017-18
195.656	268.5135

The funds from the State Plan programmes were in respect of activities like plantation, silkworm rearing and infrastructure development at beneficiary and state level, besides maintenance of infrastructure available in the state created over a period of time.

Convergence programme

While funding for the future development programmes could be with convergence from Ministry of Textiles, Agriculture and Rural Development etc., in the State to consider sericulture as an important sector and provide





Chhattisgarh

matching state share besides creating a full-fledged Sericulture Department in the years to come. Table below gives details of assistance availed by the state under convergence:

(Rs. in lakh)

Year	MGNREGA	Total
XII Plan (2012-17)	1837.00	1837.00
2017-18	1562.00	1562.00

Infrastructure under State and Central Silk Board for sericulture development

To support development of sericulture in all its spheres, the following infrastructure has been created in the state under State and Central Silk Board over different plan periods:

Infrastructure under State (as on March 2017)

#	Name of the State Units	No.
1	Chawki Rearing Centres	3
2	Licensed Silkworm Seed Production Centre (Government + Central Silk Board + Private)	86
3	Registered Seed Farmers (P1)	118
4	Technical Service Centre	312
5	Cocoon Banks	13
6	Number of Tasar reeling machines	903
7	Number of Spinning machines	482
8	Number of spun silk mill	1

Infrastructure under Central Silk Board (As on March 2017)

#	Name of the CSB Unit	No.
1	Research Extension Centres	1

#	Name of the CSB Unit	No.
2	Regional Tasar Research Station	1
3	Basic Seed Farm (P4)	1
4	Basic Seed Multiplication and Training Centre	5
5	Basic Tasar Silkworm Seed Organization	1
6	Central Tasar Silkworm Seed Station	1
7	Zonal Office	1
8	Raw material Bank	1

Post-cocoon sector

The following infrastructure at state level and beneficiary level are available to support value addition of cocoons produced within the state:

Unit	No.
No. of Spun Silk Mill	1
No. of Vanya reeling / spinning units	1385

Marketing

There is an organized marketing system in the state of Chhattisgarh. However, the State Government facilitates the farmers to market the cocoons produced by them at identified locations in the state. Marketing of cocoons have been taken care of by Khadi Gramoudyog Board. At present 6 cocoon banks and 4 yarn banks exist in the state. Cocoons are purchased by cocoon Banks at support prices fixed by the Department of Sericulture as per the cocoon quality and then sell it to reelers on selling price fixed by the department. Chhattisgarh is very famous for its tasar fabric, famously known as Kosa. Weaving sector is dominated by handlooms of private un-organized weavers. The small handlooms with 1-2 looms are now being upgraded with better looms. Dyeing is done mostly by the weavers themselves.





Way forward

- Focus on integrated farming system to increase the income of stakeholders.
- Focus on Post-cocoon sector-setting of improved Vanya reeling machines, like Wet Reeling Machines, Solar Operated spinning machines, Tasar Reeling Machinery package under “Make in India” Programme.
- Promotion and development of sericulture & silk industry which is a priority industry because of its being an environment friendly, an effective socio economic tool for employment generation in rural areas.
- Infrastructural and technical support for production of saplings of silkworm food plant and its plantation and silkworm seed.
- Promotion of appropriate & latest technology of sapling raising and plantation of silkworm food plants, silkworm seed, silkworm rearing, silk spinning and reeling.
- Facilitate marketing of sericulture produces at the optimum market price.

Success Story



Shri Jai Lal Rathia

S/o. Shri Daulat Ram
Village & Post: Kartala
Taluk: Kartala
District: Korba
Chhattisgarh

Shri Jai Lal Rathia (30 years) has been practicing tasar culture since long time. His intake of tasar dfls has been in the range of 550 to 1250 dfls during last three years. By rearing 1250 dfls during last year, he could harvest 93,300 cocoons that fetched him the highest income of Rs.92,550/-. He has received assistance for seed rearing and plantation besides undergoing training.

“Adoption of tasar culture brought in significant change in our life style. Now, I am able to provide good education to my children and health care of the family. Tasar silkworm rearing helped me to renovate my house, purchase essential household goods and supported in clearing old debts. Well, I could organize my brother’s marriage nicely.”





HARYANA



44,212 sq. km.



2,53,51,462



75.55%

Introduction

Haryana came into existence on November 1, 1966 and was carved out from the state of Punjab on the basis of language. It was the home of the legendary *Bharata* dynasty, which gave India its name, *Bharat*. The state also witnessed the epic battle between the *Kauravas* and *Pandavas*, which later became the great Indian epic text, the *Mahabharata*, at Kurukshetra. It is an agrarian state and nearly 70% of the people here are involved in agriculture. The major crops produced are wheat and rice. It is also known for maximum milk production. The state capital is Chandigarh with 22 districts.

Sericulture status

Sericulture is gaining popularity over the years as a household remunerative activity in rural areas. The by-products like mulberry wood, fruits, waste leaves, silkworm litter, silk waste and pupae, etc., also supplement the income on regular basis. Promotion of sericulture would be attractive in the context of use of locally available resources and equitable development through adoption of sericulture. Further, the state Government has put sericulture in the priority area in its industrial policy due to its eco-friendly nature. In Haryana, two crops (autumn and spring) schedule is being practiced with spring crop contributing about 70% of the total production of cocoons.

There is potential for horizontal and vertical expansion of sericulture industry in the state. Popularization of bivoltine cocoon production is also a thrust area of the state. The scheme is being implemented in three districts of Haryana i.e., Panchkula, Ambala and Y. Nagar. Sericulture

activities in the state were closed down by Department of Horticulture, Haryana since 1997-98. Infrastructure / buildings created under NSP were handed over to state Government to continue the sericulture activities in the state. The state has three sericultural districts with 22 sericulture villages and 50 sericulture farmers. Presently, about 50 acres of land is covered under mulberry.

Silk production trends

Variety	2014-15	2015-16	2016-17	2017-18
Mulberry plantation (ha)	136	171	183	94
Mulberry raw silk (MT)				
Bivoltine	0.3	0.60	0.68	0.7
Mulberry total (MT)	0.3	1	1	1

District-wise raw silk production during 2016-17

#	District	Mulberry raw silk production (MT)
1	Panchkula	0.30
2	Ambala	0.15
3	Yamunagar	0.23
Total		0.68

Schemes of Government of India

Central Silk Board is providing continued support to the state for intensive development of sericulture for maximization of benefits from existing capacity as a part of consolidated efforts and for creating new infrastructure, common facility centres, farm mechanization, reeling, spinning and silk weaving activities, besides infrastructure for seed production.

Central Silk Board has supported Haryana for implementation of Catalytic Development Programme (CDP) a centrally sponsored scheme from IX Plan to XII Plan. The CDP envisaged development of host plantations, post-cocoon infrastructure, extension, up-gradation of silk reeling and processing facilities, capacity building, publicity, enterprise development, etc.

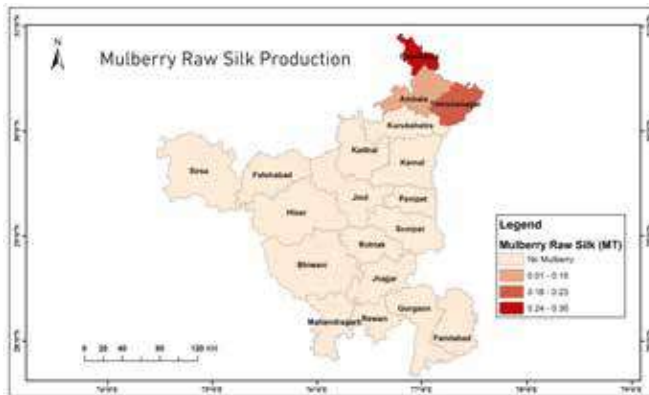




The details of funds released by Central Silk Board to the state for implementation of the Catalytic Development Programme (CDP) from IX Plan to XII plan are as under:

(Rs. in lakh)

XI Plan (2007-12)	XII Plan (2012-17)	Total funds released
50.68	13.14	63.82



State plan schemes

There is no separate department for development of sericulture and Department of Horticulture looks after all the issues related to sericulture. Department of Horticulture, Haryana is not availing any assistance under central sector scheme of Government of India. Sericulture development is continuing from the support from the state plan programme.

The details of financial assistance provided by the state for maintenance of infrastructure and related activities under sericulture sector are as under:

(Rs. in lakh)

During XII Plan (2012-17)	2017-18	2018-19
40.88	18.82	-

Convergence programme

While funding for the future development programmes could be with convergence from Ministry of Textiles,

Agriculture and Rural Development, etc., in the state to consider sericulture as an important sector and provide matching. Table below gives the details of assistance availed by the state under convergence:

(Rs.in lakh)

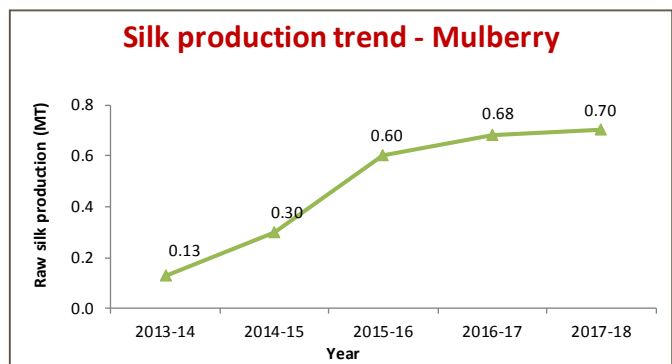
Year	RKVY	MGNREGS	Others	Total
XII Plan (2012-17)	40.68	-	--	40.68
2017-18	-	-	-	-
2018-19	-	-	-	-

State infrastructure

#	Particulars	No. / Area
1	Sericultural District	3
2	No. of sericulture villages	70
3	Sericulture Farmers	140
4	Government Sericulture Farms Area under farms (acre)	3 8.50
5	Chawki Rearing Centres	1
6	Hot Air Dryers	1

Infrastructure under Central Silk Board

#	Particular	No. / Area
1	Sub-Research Extension Centre (Mulberry), Panchkula	1





Haryana

Marketing

There exists no organized marketing system in the state. However, the State Government facilitates the farmers to market their cocoons, as the sericulture activity in the state is seasonal.

Way forward

- The climatic conditions prevailing in the state are conducive for commercial exploitation of mulberry silks.
- Emphasis has been laid for horizontal expansion of silk industry mostly by utilizing waste / degraded land for viable and sustainable sericulture activities in the state.
- Provide need-based infrastructure support to silk industry so as to ensure regular support of raw material to the industries.
- Strengthening of post-cocoon infrastructures and establish a marketing system.

Success Story



Shri Ajmer Singh

S/o. Shri Daya Ram
Village: Katcha Kila
New Toli Sadhaura,
P.O.: Sadhaura
District: Yamuna Nagar
Haryana – 133 204
Mobile: 94662261267

Shri Ajmer Singh took sericulture from the year 2011-12. Under the guidance of Department of Horticulture, he planted 300 S146 variety mulberry plants on the boundary of his 2 acres of land with an objective of utilizing the land resources for mulberry silkworm rearing and cocoon production in off-seasons. Since then, he is undertaking rearing of 100 dfls in off-season and is able to achieve productivity of 54 kg/100 dfls. He has undergone training in sericulture from Regional Sericultural Research Station, Sahaspur of Central Silk Board.

“I am happy to make additional income from same piece of land by utilizing it for sericulture activities. I am planning to increase this activity further so that there would be significant enhancement in my income from sericulture.”





HIMACHAL PRADESH

 55,673 sq. km.
  68,64,602
  82.8%

Introduction

Himachal Pradesh lies in the lap of Himalayas and is located in the Northern region of India, bordered by Jammu & Kashmir on North, Punjab on West and South-West, Haryana on South, Uttarakhand on South-East and China on the East. The state offers diverse climatic conditions and has been divided into five climatic zones viz., wet sub-temperate zone, humid sub-temperate zone, dry temperate alpine high lands, humid sub-tropical zone and sub-humid tropical zone. Agriculture, horticulture and allied sector continue to be the mainstay of the people of the state as almost 70% population depends for their livelihood. With fast growing economy, the state has emerged as leader in the hill area development by depending on tourism, fruit orchard etc. Sericulture also plays important role in providing supplementary remunerative income to the people of Himachal Pradesh.

Sericulture information

Sericulture in Himachal Pradesh is a land-based activity with good potential for generating productive rural employment. The hilly topography, agro-climatic conditions and abundant availability of natural resources & mulberry wealth and socio-economic conditions of the people are favourable factors for development of sericulture in the state. Sericulture provides a fairly remunerative occupation to about 10250 farmers in 1672 villages and its major base is in Bilaspur, Kangra, Mandi, Hamirpur, Una & Sirmour districts. Oak tasar culture is practiced at a very smaller scale and only confined to Kangra, Chamba & Kullu districts. Himachal Pradesh is exclusively, bivoltine silk producing non-traditional state

in North-western region and shares about 16% of total BV raw silk production in NW states.

Silk production trends

Variety	2014-15	2015-16	2016-17	2017-18
Mulberry plantation (ha)	1780	2088	2245	2454
Mulberry raw silk (MT)				
Bivoltine	30	32	32	32
Mulberry total (MT)	30	32	32	32

District-wise raw silk production during 2016-17

#	District	Mulberry raw silk production (MT)
1	Bilaspur	10.79
2	Mandi	5.65
3	Kangra	7.14
4	Hamirpur	5.00
5	Sirmour	1.56
6	Una Solan	1.37
7	Solan	0.02
8	Shimla	0.02
	Total	31.54

Schemes of Government of India

Government of India has been providing support to Himachal Pradesh for the overall development of sericulture through critical components covering seed, cocoon and post-cocoon sector. The thrust on bivoltine development through cluster approach and establishment of automatic reeling units is to fulfil the objectives under *Make in India* with a production of 1651 MT of import substitute raw silk. Government of India has supported Himachal Pradesh under the Catalytic Development Programme (CDP), a centrally sponsored scheme, from IX Plan to XII Plan. The details of funds released by Central Silk Board to Himachal Pradesh for the implementation of CDP from IX Plan to XII Plan are as under:





Himachal Pradesh

(Rs. in lakh)

IX Plan (1997-2002)	X Plan (2002-2007)	XI Plan (2007-2012)	XII Plan (2012-2017)	Total
28.49	726.87	1242.52	1898.23	3896.11

Silk Samagra

In view of discontinuation of CDP w.e.f. 2015-16, support under Integrated Scheme for Development of Sericulture Industry (ISDSI) - Silk Samagra is being rendered to states from 2015-16 to supplement efforts for development of sericulture by the states.

The details of assistance under Central Sector Scheme (CSS) are as below:

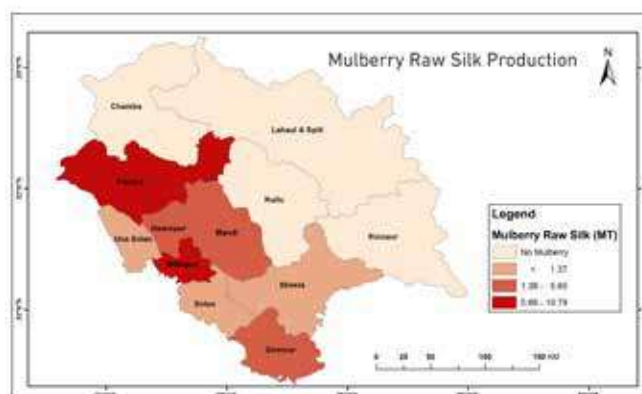
Fund released (Rs. in lakh)

	2015-16	2016-17	2017-18
DOI, HP	32.96	56.592	96
CSTRI	20.37	0	0
Total	53.33	56.592	96

State plan schemes

Details of fund received by DOI, Himachal Pradesh under state plan programme for development of sericulture in the state during last 5 years is given as under:

Year	Fund received under State Plan (Rs. in lakh)
2012-13	208.69
2013-14	268.00
2014-15	96.00
2015-16	212.00
2016-17	355.00
2017-18	155.00
Total	1294.69

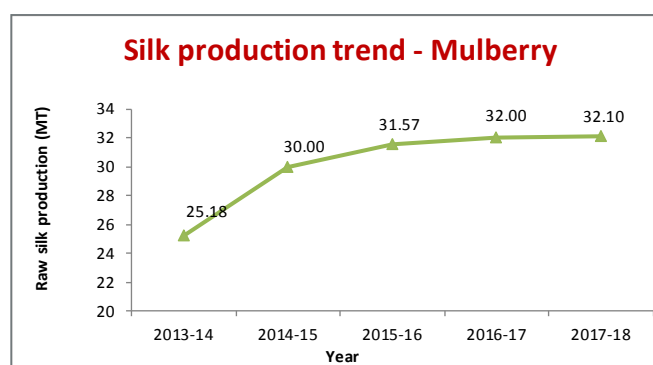


Convergence programme

In view of limited fund availability under central sector scheme and to maintain close inter departmental linkages for effective implementation of developmental schemes, the Government of India emphasized the implementation of sericulture components by converging CSS programme with the developmental programmes of other Departments/Ministries like MORD, Agriculture etc. Accordingly, DOI, Himachal Pradesh has also availed the fund for sericulture development through various ministries of the Government of India under convergence programme viz., Special SGSY, MGNREGA, RKVY etc. Progress of sericulture development in Himachal Pradesh under the convergence programme is as under:

(Rs. in lakh)

Year	RKVY	MGNREGA	Total
XII Plan (2012-17)	498.74	304.49	803.23





Infrastructure under State and CSB

#	Particulars	No./Area
1	Department farms (No.)	82
2	Mulberry nurseries (No.)	50
3	Mulberry area (Acres)	278
4	Grainages (No.)	1
5	CRC (No.)	71
6	Cocoon market (No.)	6
7	STS	1
8	Govt. reeling unit (No.)	1
9	Pvt. reeling unit (No.)	15
10	Twisting unit (No.)	4
11	Hot air dryer(No.)	33
12	Silk powerloom	17 (Pvt. 12)
13	Silk handloom	12
14	Spindles	760

Manpower status in DOI

Sanctioned: 369, Filled: 199 and Vacant: 170

Infrastructure & manpower under CSB

Central Silk Board units functioning in Himachal Pradesh to provide R&D & extension support under pre & post-cocoon sector are as under mulberry sector: REC, Palampur and REC, Ghumarwin, RO, New Delhi headed by the Joint Secretary (Tech) looks after coordination, monitoring & evaluation of sericulture activities in the state. Besides, one Nodal Officer in the rank of Deputy Secretary (Tech) has been nominated at Central Silk Board HQ., Bengaluru to look after sericulture affairs in the state supported with 19 (Scientist-2, Technical-12 & Admn.-5).

Marketing

There are six silk cocoon market yards are being established, one each in most sericulture potential six districts viz., Bilaspur, Kangra, Mandi, Hamirpur, Una and Sirmaur with providing suitable equipments and infrastructure for storage of silk commodities like silk cocoons, drying, auction and trading facilities, besides training in quality assessment of silk cocoons. The proposed silk cocoons market yards would function as a contact point between buyers and sellers. The cocoon Bank facilities to all sericulture divisions is being provided under silk market revolving fund of 1.25 crore created originally, under CDP scheme 'Quality linked purchase system for raw silk and silk cocoons' with an idea to reduce burden of inventory cost on purchase of silk cocoons by the local silk reelers as only two silk cocoon crops are in vogue in Himachal Pradesh.

Way forward

1. To become one of the leading state in bivoltine silk production in the country.
2. To create sustainable & gainful employment and improve levels of income in sericulture & silk industry.
3. To provide needful infrastructural and technical service support with enhanced participation of all stakeholders.





Himachal Pradesh

Success story



Smt. Raksha Devi

Village: Jarora

P.O.: Dadhol

Tehsil: Ghumarwin

District: Bilaspur- 174021

Himachal Pradesh.

Smt. Raksha Devi (30 yrs) dwelling from Jarora village, Dadhol P.O., Ghumarwin tehsil, Bilaspur district, Himachal Pradesh practicing sericulture since 2002 in 2.5 acres by availing support from MGNREGA for mulberry plantation and harvesting two crops in a year with an average cocoon yield of is 60 per 100 dfls and gaining an average income Rs.40000 per year.

Additional earnings from sericulture helped her family to purchase consumer durables like TV, Refrigerator etc., and to clear loan taken for purchase of tractor. She is a nominated member of Cluster Promotion Committee (CPC) Ghumarwin and an active member of SHG that run silk reeling unit at Padyalag. She is also actively engaged as a 'Lead women sericulture farmer' motivating other farmers to adopt sericulture in Bilaspur district.

“The support and incentives from Government has helped me to get good returns from sericulture and I’m feeling proud by earning through this activity”.





JAMMU & KASHMIR



2,22,236 sq. km.

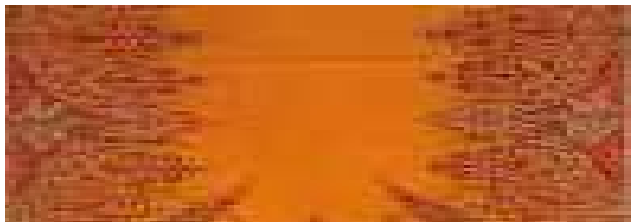


1,25,41,302



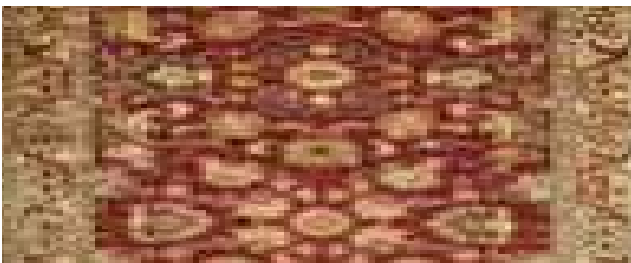
67.16%

Jamawar Shawl



Jamawar, or *grown piece*, is a special type of shawl made in *Kashmir*. “Jama” means robe and “war/var” is chest and metaphorically body, made with Pashmina. The brocaded parts are woven in similar threads of silk or polyester with floral designs, with the *kairy* as the predominant motif. Modern, machine-made shawls cost less but handmade Jamawars are little expensive

Silk carpets



A Kashmir carpet is a hand-knotted oriental product with intricate floral designs in a range of colours, sizes and quality. They are primarily made using pure wool, pure silk and occasionally, wool/ silk blends or both. These are available in wide-ranging colours, designs and sizes.

Kashmiri sarees



Kashmiri embroidered silk sarees have a very elegant look and get up. Its exquisitely woven embroidery is very popular with the Marwari community which gives a graceful look.

Introduction

Jammu & Kashmir state comprises of three regions viz., Kashmir, Jammu and Ladakh.

The state is divided into 22 districts, two in Ladakh, 10 each in Jammu and Kashmir regions. The climate of the state varies from alpine in the North-East to sub-tropical in South-West. Average annual rainfall is about 75 mm in alpine area (Kashmir valley) to 1150 mm in sub-tropical area (Jammu region). The Jammu & Kashmir state's economy is predominantly agriculture dependent and nearly 70% of population is directly or indirectly engaged in agricultural and allied occupations. Jammu & Kashmir is globally known tourist destination because of its natural beauty and *Mata Vaishno Devi Shrine*.

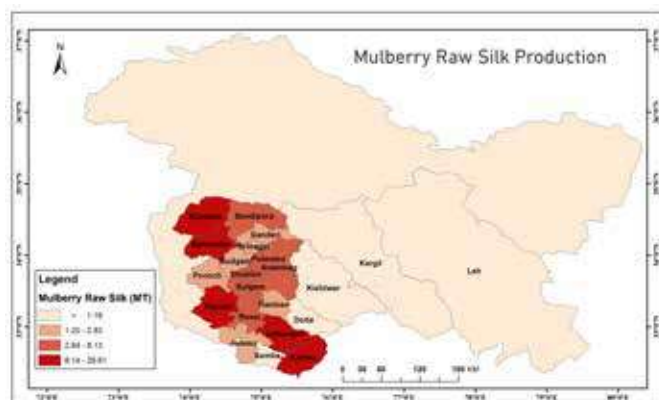
Sericulture Industry

Sericulture industry in the state boasts of its glorious past. Silk has been one of the cherished heritages of Jammu & Kashmir with sericulture activity in the valley finding a mention in the ancient Sanskrit scriptures including *Rajtarangni*.





Jammu & Kashmir



By the first half of 20th century, Kashmir had a dynamic silk trade with its precious silk yarn exported not only to the Great Britain but also to whole of Europe. The available records reveal that in the year 1855, Kashmir was in a position to supply 25000 oz. of silkworm seed to Europe. Because of this, the silk industry of Kashmir gained a pivotal position on the silk route of Europe. Presently Jammu Division contributes a significant silk production of 67% in the State. Perhaps J&K Sericulture Development Department is one of the oldest / ancient departments in the country which came into existence in the year 1889 under the monopolistic control of government to promote silk industry in the state. Sound infrastructure including mulberry nurseries, silkworm seed stations and silk reeling/weaving factories were established and state became one of the leading silk producing states. Silk yarn apart from its use as a textile fiber, was being utilized as a material for parachutes also.

The Jammu & Kashmir is a truly a bivoltine silk producing state owing to its conducive climate. It produces high quality bivoltine silk and helps in improving socio-economic conditions of the rural masses. Sericulture continues to be an important subsidiary occupation for more than 30000 rural families in the state. Sericulture is practiced in 20 districts the major one in Jammu division are Rajouri, Udhampur and Kathua whereas in Kashmir division Anantnag, Kupwara, Baramulla and Pulwama. About 80% of the state's total cocoon production comes from these districts.

Jammu & Kashmir is the only traditional sericulture state in north India and it shares about 65% of the total raw silk produced in north India. The Department has 158 mulberry nurseries over an area of 963 acres and 374 mulberry blocks over an area 2215 acre. The annual production capacity of nurseries is about 30 lakh plants. The mulberry blocks serve as leaf reservoirs for the landless and marginal farmers.

Silkworm Seed Infrastructure: The Department of Sericulture, J&K has well established seed organization and presently about 57.66 percent of state's annual seed demand is met by state itself. State has a well established three tier monitoring system in place for quality seed production. There are eight Basic Silkworm Seed stations (6 in Jammu region at Miransahib, Malyal, Cherry, Chareel, Sial-sallan & Patta and 2 in Kashmir valley at Mirgund and Tarhama) in Jammu and in Kashmir and six Seed Grainages (three each in Jammu region and Kashmir valley). Besides, state has two Cold Storages for preservation of silkworm seed one each in Jammu region (20 lakh dfls capacity) and Kashmir valley (10 lakh dfls. capacity). Most of the seed infrastructures in the state were strengthened/upgraded under CDP and PM's Special package during X, XI & XII plan period.

Incubation Centres/CRCs: For providing quality silkworm to the farmers, state has fully equipped 152 Chawki Rearing Centers for incubation of eggs. Each Chawki Centre has the capacity to incubate about 25 oz eggs at one time.

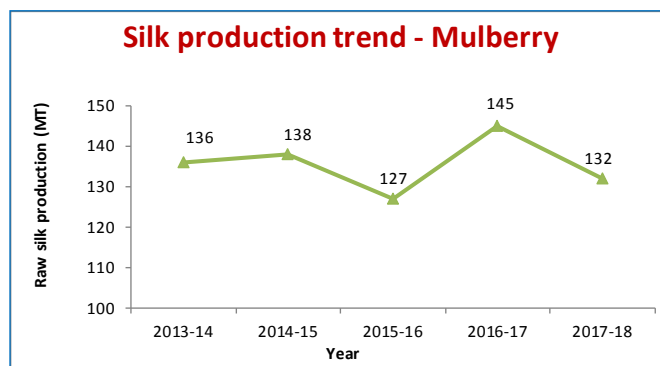
Cocoon Marketing: Jammu and Kashmir is a traditional bivoltine silk producing state and producing around 900 MT of cocoons by 27,000 farmers in 2575 villages. Spring is the major crop and approx. 80% production is coming from spring crop and rest from autumn. Sericulture Development Department (SDD) is the nodal agency responsible for the marketing of cocoons in the state.

Government of India supported for creation of Revolving Fund for transaction of cocoons / yarn, establishment of cocoon warehouses, marketing yard, cocoon drying facilities etc. Revolving Capital fund of Rs.1.50 crore has





been created by state with support from CSB. The state has established nine notified cocoon auction markets for disposal of cocoons. The cocoon markets are equipped with warehouses, hot air driers and allied facilities required for marketing and storage of cocoons by the sellers and buyers.



Silk production trends

Variety	2014-15	2015-16	2016-17	2017-18
Mulberry plantation (ha)	8132	8237	8444	8104
Mulberry raw silk (MT)				
Bivoltine	138	127	145	132
Mulberry total (MT)	138	127	145	132

District-wise raw silk production during 2016-17

#	District	Mulberry raw silk production (MT)
Jammu Division		
1	Jammu	2.8
2	Samba	0.3
3	Kathua	17.9
4	Udhampur	29.6
5	Reasi	3.6
6	Rajouri	29.5
7	Poonch	2.8
8	Doda	1.0

#	District	Mulberry raw silk production (MT)
9	Kishtwar	1.2
10	Ramban	2.7
Kashmir Division		
11	Anantnag	8.1
12	Kulgam	3.4
13	Baramulla	8.5
14	Bandipora	6.1
15	Budgam	2.8
16	Kupwara	9.8
17	Pulwama	7.6
18	Shopian	2.9
19	Srinagar	1.8
20	Ganderi	2.4
	Total	145

Schemes of Government of India

Central Silk Board, Government of India is implementing a number of sericulture development programmes in the state to support the state sericulture department right from the R&D need, transfer of technology/extension, silkworm seed supply, skill upgradation and training to the farmers/entrepreneurs and strengthening/creation of sericulture infrastructure. Central Silk Board has been directly assisting the state government and the farmers/entrepreneurs under its flagship Catalytic Development Programme since IX Plan. Besides, the state was assisted under PM's Special Package to strengthen existing sericulture infrastructure and create the one new infrastructure for sericulture development. Ministry of Textiles, Government of India has also launched a comprehensive project under Integrated Skill Development Scheme (ISDS) while Ministry of Small and Medium Enterprises (MSME), Government of India through Central Silk Board has been implementing Enterprise Development Programme for Silk Carpet Industry in the state. Apart from this, the state government is availing assistance of the Govt. of India through *Rastriya Krishi Vikas Yojana* (RKVY) of Ministry of Agriculture and MGNREGA of Ministry of Rural Development.





Jammu & Kashmir

Central Silk Board has been providing financial assistance to SDD, J&K under CDP since IX Plan for development of sericulture in the state. Till date, total Rs.113.36crore as CSB share has already been released to SDD, J&K since IX plan. Plan wise status of fund released and beneficiary covered since IX Plan is tabulated as under:

Plan	CDP/CSS Components/ Scheme (No.)	CSB share released (Rs. in lakh)	% increase	Beneficiary covered (No.)
IX	10	220.31	-	4500
X	15	1728.70	685	5125
XI	17	4889.31	183	12462
XII PLAN				
2012-13	13	1594.04	-	2675
2013-14	8	1444.99		2500
2014-15	12	1458.36		1500
CSB share released		11335.71		28762

Besides, sizeable infrastructure created/strengthened at government / private level in seed, cocoon and post-cocoon sectors like seed grainage unit, chawki rearing centers, rearing Houses, hot air dryer, cottage basin, multi-end reeling units, rearing equipment support etc., under CDP.

State plan schemes

Details of fund received by SDD, J&K under State Plan Programme for development of sericulture in the state during last 5 years is given as under:

Year	Fund received under State Plan (Rs. in lakh)
2012-13	123.38
2013-14	152.10
2014-15	239.68
2015-16	239.68
2016-17	162.50
2017-18	197.47

Integrated Skill Development Schemes (ISDSI) & Silk Samagra

CSB launched the ISDS programme in November, 2011. The objectives of the CSB, ISDS project are:

- To increase income potential of the industry stakeholders
- To improve employability of target group through various skilltrainings
- To cover wide range of skills to meet the dynamic needs of the industry
- To help handloom weavers/handicrafts artisans to produce quality and innovative products to meet market challenges/demands
- To strengthen 'resource base' of trained manpower/trainers pool

(Rs. in lakh)

Component	2015-16		2016-17		2017-18	
	Physical	Fin.	Physical	Fin.	Physical	Fin.
A. SDD, J&K						
Prophylactic measures including disinfectant, inputs supply for productivity improvement, support to CBOs	23333	84.00	-	-	-	-
Training programme for farmers / reelers	200	10.00	-	-	-	-
Development of Kisan Nurseries	2 No.	4.14	-	-	-	-
Incentive for production of bivoltine silk yarn	20000	18.00	-	-	-	-





Component	2015-16		2016-17		2017-18	
	Physical	Fin.	Physical	Fin.	Physical	Fin.
Popularization of Chawki Rearing Centre (through RSRS/RECs)	4 unit	36.00	5 unit	45.00	2	16.00
Supply of rearing appliance: Rotary Mountages	-	0.00	3188 unit	30.292	-	-
Construction of Rearing House	-	0.00	-	-	92	92.00
Construction of Cold Storage Plant	-	0.00	1 Unit.	108.00	-	-
Total		176.53		183.292		108.00
B. CSTRl						
Support for establishment of ARM unit	1 No.	65.31	-	0	-	-
Total		65.31		0.00		0.00
Grand Total (A + B)		241.84		183.292		108.00

Support under PM's Special Package for Kashmir Valley

Implementation Period	X Plan Period (2002-03 to 2006-07)
Government of India Assistance	Rs.11.22 crore from CSB
No. of schemes implemented	9
Plantation & Infrastructures created	67.442 lakh plants raised & maintenance of 20000 existing mulberry trees.
Infrastructure developed/established	
Warehouse/Cocoon Storage Godown	7
Hot Air Drier 1000 kg capacity	1
Silk Exchange	2
Chawki Rearing Centres	101
Rearing House	250
CRC Equipment provided	44

Revolving Funds: Rs.135 lakh - Rs.45 lakh corpus funds for Market intervention & Rs.90 lakh revolving fund for working capital assistance to reelers / cocoon bank.

Beneficiary covered : Approx. 50000 beneficiaries assisted under pre and post-cocoon sector

Employment Generation : 8.08 lakh mandays

Way forward

- Strengthening of extension activities by involving KVKs, Agriculture Universities, NGOs, Community Resource Persons, Para-Professionals/Extension Workers, besides DOS and CSB.
- Steps to improve institutional credit so as to bring in more investments to sericulture sector.
- Step up to outsource major activities to make sericulture a self-sustaining and viable enterprise as Govt. can be only a supporter and a facilitator, in view of the depleting manpower.





Success story



Shri Ab Salam Dar

District: Pulwama

Village: Pulwama

Jammu and Kashmir

Shri Ab Salam Dar, S/o Shri AbKhaliq Dar Ahad Sheik, resident of Kiserigam Dist. Pulwama (J&K) is associated with sericulture practices from the last 12 years. He has 150 tall mulberry trees and recently planted 300 more. Has been provided rearing kit and has constructed rearing shed with an assistance of Rs.0.50 lakh in the year 2010-11 which prompted him to go for 2nd rearing in autumn. The chart shows the silkworm seed reared and income generated for the last three years by the silkworm rearer.

Year	Season	Dflsreared (Dfls)	Cocoons harvested (kg) Dry	Rate/kg (Rs.)	Amount Earned (Rs.)	Total during the year
2011	Spring	300	52	654	34008	34,008
	Summer		Rearing not taken up			
2012	Spring	300	55	873	48015	55,495
	Autumn	100	40 (green)	187	7480	
2013	Spring	250	53	873	46269	56,409
	Autumn	100	52 (green)	195	10140	

The silkworm rearer turned into an entrepreneur by initiating reeling activities. He installed one multi-end silk reeling unit at Kiseregam, Dist. Pulwama (J&K), the first of its kind in the district of Pulwama in Jammu & Kashmir. The reeling unit started functioning during the year 2013-14.



Rearer turned entrepreneur Shri Ab Salam Dar installed MRM, for the first of its kind in Kiseregam of Pulwama district in Jammu & Kashmir and is doing well.

“Multi-end Reeling Machine (MRM) turned my way from rearer to entrepreneur through reeling activities”.





JHARKHAND

 79,714 sq. km.
  3,29,88,134
  66.41%

Introduction

Jharkhand popularly known as Vananchal (meaning land of forests) has been carved out from the state of Bihar on November, 15, 2000. The state capital is Ranchi, which is an important industrial city of the state. The state is contributing a lion share of 40% of mineral resources to India. Jharkhand shares its border with the states of Bihar to the North, Uttar Pradesh and Chhattisgarh to the West, Odisha to the South and West Bengal to the East.

Status of silk industry

Jharkhand is a leading tasar producing state in the country. However, a small quantity of 2-3 MT of mulberry silk is also produced in the state. Sericulture is practiced by the majority of tribals in the areas of Singhbhum East, Singhbhum West, Saraikela-Kharsawan, Deoghar, Dumka, Godda, Hazaribagh, Dhanbad and Giridih areas. CSB is implementing various developmental programmes in collaboration with Department of Sericulture for the growth of sericulture activities in general and economic development of tasar growers, in particular. Sericulture, is practiced by 1,50,453 number of tasar growers in the state among which 1,590 are nucleus seed rearers, 2,590 are Reshamdoots, 5150 are seed rearers and 1,41,123 are commercial rearers.

Silk production trends

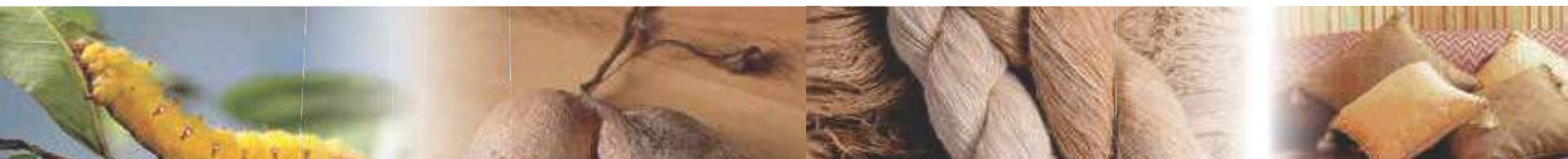
#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry Plantation (ha)	372	372	372	472
II	Mulberry Raw Silk (MT)				

#	Variety	2014-15	2015-16	2016-17	2017-18
	Cross Breed	3	3	1	3
	Total	3	3	1	3
III	Vanya Silk(MT)				
	Tasar	1943	2281	2630	2217
	Vanya Total	1943	2281	2630	2217
	Grand Total	1946	2284	2631	2220

District-wise status during 2016-17

West Singhbhum district (27.80%) contributes major tasar silk in the state, followed by Dumka (19.43%) and Saraikela Kharsawan (16.20%). The details are given below:

#	District	Raw silk production (MT)	
		Mulberry	Tasar
1	Saraikela Kharsawan		426.0
2	West Singhbhum		731.3
3	East Singhbhum		44.3
4	Dhanbad		135.9
5	Giridih		251.4
6	Chatra		25.0
7	Hazaribagh		32.9
8	Godda		92.8
9	Pakur		81.1
10	Dumka		511.1
11	Sahebganj	1	8.6
12	Deoghar		86.8
13	Palamu		84.5
14	Garhwa		26.8
15	Ranchi		79.9
16	Simdega		6.6
17	Loherdega		5.3
	Total		2630.2





Jharkhand

Schemes of Government of India

Catalytic Development Programme (CDP)

(Rs.in lakh)

X Plan (2002-07)	XI Plan (2007-12)	XII Plan (2012-17)	Total funds released
477.04	6227.82	7389.31	14094.17

With a view to restructure Centrally Sponsored Scheme, the Government of India discontinued the CDP during 2015-16, and introduced Silk Samagra (ISDSI).

Silk Samagra

This is a comprehensive Central Sector Scheme of Central Silk Board (CSB) under implementation from 2017-18 to 2019-20, for overall development of sericulture industry in the country, implemented directly as well as through state governments. The programme catalyzes the efforts of state governments to improve the quality, productivity and production of raw silk besides, generating employment opportunities particularly in the rural areas. The interventions cover the major areas viz. (a) Development and expansion of host plant, (b) Strengthening and creation of silkworm seed multiplication infrastructure, (c) Development of farm and post-cocoon infrastructure, (d) Up-gradation of reeling and processing technologies in Silk and (e) Capacity Building through Skill development / Enterprise Development Programme. The details of assistance are as below:

(Rs.in lakh)

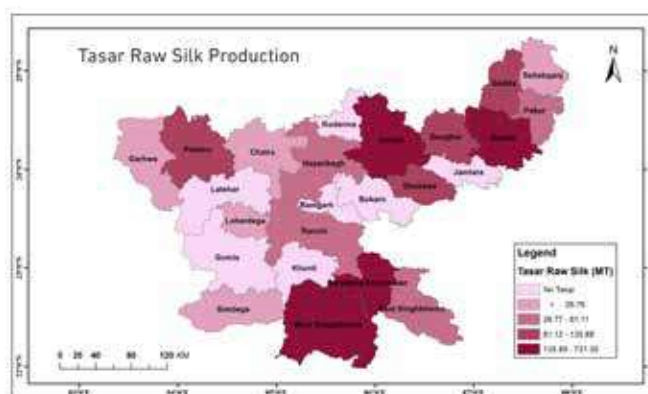
2015-16	2016-17	2017-18	2018-19
ISDSI		Silk Samagra	
1079.46	56.34	396.26	358.74

State Plan schemes

State has established a separate department for development of sericulture which looks after all issues relating to sericulture. Besides, the state has sanctioned matching share for implementation of the schemes/ programme under "Silk Samagra". In addition to the support from Government of India, state has also drawn state-specific plans for maintenance of infrastructure created

over various plan periods and for implementation of specific components, which are not covered under any of the central sector and centrally sponsored schemes. The financial assistance provided by the state towards promotion of sericulture focusing on tasar sector is given below:

#	State plan programme	Amount incurred (Rs. in lakh)			
		2014-15	2015-16	2016-17	2017-18
1	Nucleus seed production by Resham Doot	292.60	278.63	228.16	303.44
2	Conservation of local tasar races	55.43	50.50	28.33	11.68
3	Tasar Keetpalak shayak Anudan	433.12	455.89	758.91	526.30
4	Training of Resham Doot and rearers	271.82	310.08	310.08	70.00
Total		1052.97	1095.10	1325.48	911.42





Convergence Programme

The state is not implementing any convergence programme.

Infrastructure under state and CSB for sericulture development

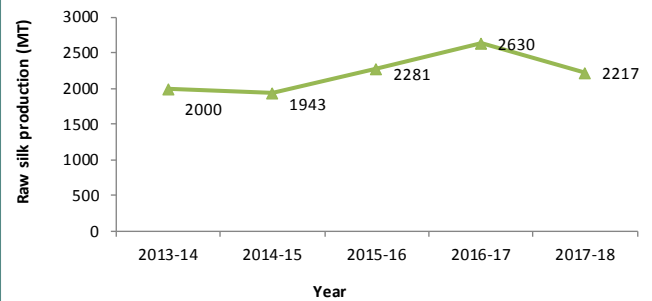
To support development of sericulture in all its spheres, the following infrastructure has been created in the state under state and Central Silk Board over different Plan periods.

Sericulture Villages	16997
Sericulture Families	150000 (approx)
<i>Grainages:</i>	
Tasar (PPCs)	120
Mulberry	Nil
Eri	1
TOTAL	121 No.
<i>PPCs:</i>	
For tasar	34
For mulberry	6
Chawki Rearing Centre	2
Cocoon Bank	12
Silk Handlooms	750
Silk Powerlooms	3
Handloom Co-operative Societies	162
Silk Exchange	Nil
Tasar Rearers farmers	150453
Mulberry Rearers	385
Reelers/ Spinners	12,000

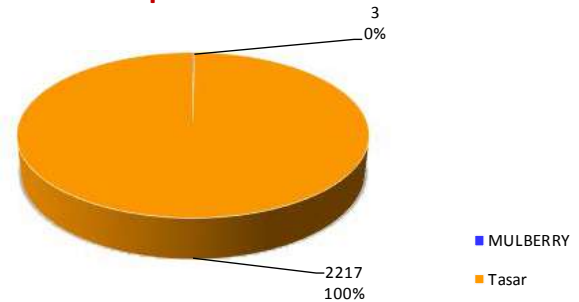
Infrastructure under CSB

#	Name of the CSB Unit	No.
1	Central Tasar Research & Training Institute (CTR & TI)	1
2	Regional Sericultural Research Station (RSRS)	1
3	Basic Seed Multiplication and Training Centre (BSM&TC)	3
4	Research Extension Centre (REC)	2
5	P4 Station	1
6	Raw Material Bank (RMB)	1

Silk production trend - Tasar



Raw silk production - 2017-18



Post-cocoon sector

CTR&TI, Ranchi renders support in post-cocoon to the reelers/ weavers & NGOs for promotion and transfer of new technology in cooking, reeling and dyeing. State Government has established 144 Common Facility Centres (CFCs) for post-cocoon activities (reeling & spinning) in the state. Each CFC is assisting 30 tribal women for their economic development under post-cocoon sector. The all tribal women working in the CFC were imparted training in cooking, reeling & spinning activities at CTR&TI, Ranchi. Besides, state government has also established the following training institute for Post Cocoon activities at Chaibasa & Bhagaiya:

1. Jharkhand Silk Technical Development Institute at Chaibasa.
2. Shahhed Nirmal Mahto Jharkhand Silk Training Institute at Bhagaiya.



Jharkhand

Marketing

In order to ensure remunerative prices for tasar cocoons and silk yarns and also arrest exploitation of tasar cocoon producers by middleman in Jharkhand state. CSB has established a Raw Material Bank for tasar at Chaibasa, West Singhbhum district. This unit of RMB is playing a vital role in checking marketing price of tasar commodities. Besides, state government has also recently established three cocoon banks for marketing of tasar commodities at Chakulia, Ghatsila and Kuchai. In addition, PRADAN, an NGO working in the state also purchase tasar cocoons directly from producers at remunerative price. During last few years the prevailing market price of tasar cocoons remained higher than the minimum support price fixed by Raw Material Bank.

Way forward

Varieties in tasar silk add to the available opportunities. Ghicha and Katia yarns are also produced at large in the state and in general are in demand for home furnishings as well as dress materials. Each tasar item is a unique creation in itself and is a source of livelihood for the poor natives of the state. Tasar culture not only provides employment to the poor tribal rearers in remote areas but also paved the way for economic development, including women. It enabled self-dependence and better living standards for these unprivileged groups. Recently, the state has developed a large number of tasar reelers/weavers mainly concentrated in Bhagaiya (Godda district), Kharsawan & Kuchai (Saraikela Kharsawan district) and also in Ranchi, East Singhbhum, Giridih, West Singhbhum and Dumka districts for large scale development of post-cocoon sector.

The initiatives taken by central and state agencies have yielded desired results in the field. Tasar raw silk production and cocoon productivity increased over the years. A large group of 1.50 lakh sericulture practising families has broadened the production base for further growth of tasar sector in the state.

The state is having tribal population of about 28%, though sericulture is practised by the majority of tribals in Jharkhand. Their geographical distribution in remote forest areas is the major challenge for promotion of silk industry, particularly tasar. However, the growing demand for tasar silk both at global and domestic level encouraged central and state agencies to promote tasar culture with systematic approach by implementing various developmental programmes as indicated above.

Success Story



Shri Bablu Hemrom

Village: Mahulbona
Block: Ranishwar,
District: Dumka
Jharkhand

The state has developed Resham Doot concept for private participation in tasar seed production. The Resham Doot concept has been well conceived and broadly implemented in the field. The private graineur (Resham Doot) normally a village level tribal entrepreneur is being selected and provided training on tasar seed production. One of the tribal entrepreneurs Shri Bablu Hemrom from Mahulbona village, Block Ranishwar, District Dumka has successfully established tasar private grainage with a capacity of 5000 dfls. A vibrant youth grabbed the opportunity and made a net profit of Rs.29,180/- on his first grainage activity by processing 14600 seed cocoons with a production of 3750 quality tasar dfls.

“With the encouragement and provided training, I’m practicing sericulture activities and getting monthly profit”





KARNATAKA



1,91,791 sq. km.



6,10,95,297



75.36%

Introduction

Karnataka was formed on 1st November 1956 originally known as the State of Mysore and it was renamed as Karnataka in 1973. The state corresponds to the Carnatic region. It is the seventh largest Indian state by area, sharing its land border with Kerala, Tamil Nadu, Andhra Pradesh, Telangana, Maharashtra and Goa. For administrative purpose, the state has been divided into four regions, namely, Bangalore, Mysore, Belagavi and Gulbarga. The capital and largest city is Bangalore (Bengaluru) which also known as the Garden City/IT City/Silicon Valley of the country. Karnataka is famous for silk, sandalwood, gold, coffee, minerals and tourism. Kannada is official language of the state.

Sericulture status

Sericulture was introduced and patronised during Tipu Sultan period, around 200 years ago, in the erstwhile Mysore State. From there, sericulture has grown steadily and is providing livelihood to many in rural and semi urban areas. Govt. of India and Govt. of Karnataka have been supporting the development of sericulture sector in the state. At present, the area under mulberry plantation in the state is 98,135 hectares with mulberry raw silk production of 9322 MT with around 30% of country's raw silk production.

The major cocoon production is coming from the southern districts of Bengaluru Urban, Bengaluru Rural, Ramanagara, Mandya, Mysuru, Chamrajnagar, Chickballapur & Kolar. In the recent past, the districts of Tumkur, Chitradurga, Bellary, Haveri, Belgagavi, Gadag have taken up sericulture in a big way. Silk reeling is concentrated in Ramanagara, Chickballapur, Kolar districts

Molakalmuru sarees

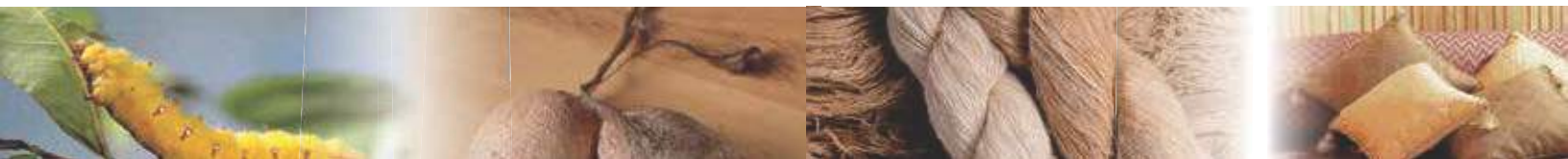


Molakalmuru sarees are the traditional silk sarees that are weaved in Molakalmuru, Chitradurga district. These sarees produced in silk, display a number of motifs and patterns, usually inspired by the Nature

Mysore Silks - Crepe sarees



Mysore Silks is one of the renowned Brands having a GI Tag. KSIC (A Govt. of Karnataka undertaking) is involved in entire gamut of silk production right from reeling of cocoons to the weaving of pure silk fabric of various shades and designs, all under one roof. Mysore Silks is famous for use of pure zari in pallu, border and body.





Karnataka

and the fine quality raw silk is produced in famous silk reeling clusters of Ramanagara, Siddalaghatta and Kolar. The silk weaving clusters are located in Doddaballapur (Bengaluru Rural), Molakalmuru (Chitradurga), Betageri (Gadag), Ilakal (Bagalkot).

Highlights of sericulture in Karnataka are:

- Presence of Govt. Cocoon Markets to facilitate transaction of cocoons. Asia's biggest Cocoon Market is in Ramanagara.
- Introduction of online auction for cocoons.
- Presence of Govt. Silk Exchange for transaction of raw silk.
- Establishment of Karnataka Silk Marketing Board (KSMB) for price stabilisation in raw silk trade.
- Presence of Karnataka State Sericulture Research & Development Institute (KSSR&DI) to meet the R&D needs of the sector.
- Geographical Indicator (GI) tag - *Mysore Silk*- granted to Karnataka Silk Industries Corporation Ltd. (KSICL) for sarees produced by them.
- Govt. of India sanctioned Mysore Mega Cluster project for creating common facility required for silk weaving and processing.

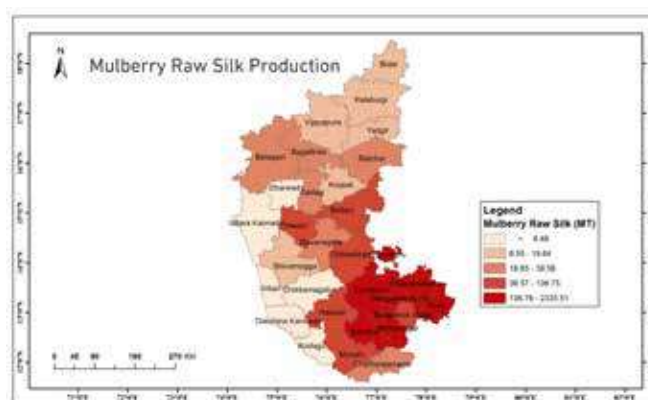
The important sericulture information of the state is as follows:

No. of sericulture villages	10328
No. of sericulture families	125545
No. of commercial seed production centres	39
No. of cocoon markets	55
No. of silk exchanges	10
No. of reelers	5948

Silk production trends

The following table indicates the growth of sericulture sector in Karnataka:

Variety	2014-15	2015-16	2016-17	2017-18
Mulberry plantation (Ha)	88489	87598	91492	98135
Mulberry raw silk (MT)				
Bivoltine	1203	1344	1488	1651
Cross Breed	8442	8479	8083	7671
Mulberry total (MT)	9645	9823	9571	9322



District-wise status of sericulture details (2017-18)

#	District	Mulberry area (ha)	Production of raw silk (MT)		
			Bivoltine	Cross Breed	Total
1	Bengaluru Rural	6802	46	476	522
2	Bengaluru Urban	981	58	88	146
3	Chikkaballapur	18906	86	1559	1645
4	Chitradurga	1592	60	35	96
5	Davanagere	432	27	3	30
6	Kolar	19936	208	1065	1273
7	Ramanagara	17446	101	1943	2044
8	Shivmogga	229	11	2	13
9	Tumkur	3446	211	178	389
10	Chamarajanagar	1181	6	30	36
11	Chikmagalur	47	2	0	2





#	District	Mulberry area (ha)	Production of raw silk (MT)		
			Bivoltine	Cross Breed	Total
12	Dakshina Kannada	25	0	0	0
13	Hassan	1365	89	0	89
14	Kodagu	10	0	0	0
15	Mandya	15471	184	2214	2399
16	Mysuru	1681	104	39	143
17	Udupi	26.5	0	0	0
18	Bellary	1316	84	5	89
19	Bidar	484	30	0	30
20	Kalburgi	628	33	0	33
21	Koppal	324	18	0	18
22	Raichur	517	32	0	32
23	Yadgir	230	10	0	10
24	Bagalkote	651	39	1	39
25	Belagavi	715	47	2	50
26	Vijayapura	315	13	0	13
27	Dharwad	139	7	1	8
28	Gadag	438	29	1	30
29	Haveri	1445	109	9	118
30	Uttar Kannada	145	4	0	4
31	Mysore seed zone	1211		20	20
Total		98135	1650.66	7670.86	9321.51

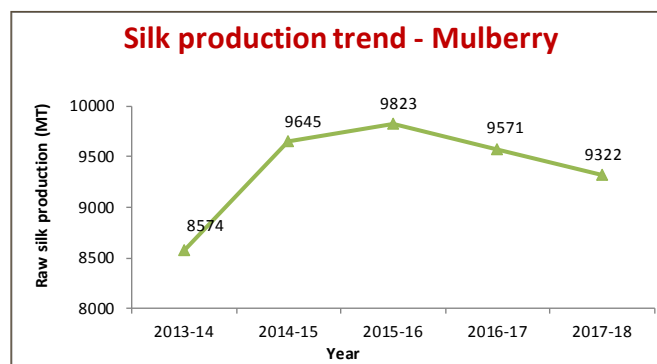
Schemes of Government of India

Government of India has been providing support to Karnataka for the overall development of sericulture through critical components covering seed, cocoon and post-cocoon sector. The thrust on bivoltine development through cluster approach and establishment of automatic reeling units is fulfilling the objectives under *Make in India* with a production of 1651 MT of import substitute raw silk.

Government of India has supported Karnataka under the Catalytic Development Programme (CDP), a centrally sponsored scheme, from IX Plan to XII Plan. The details

of funds released by Central Silk Board to Karnataka for the implementation of CDP from IX Plan to XII plan are as under:

(Rs. in crore)				
IX Plan (1997-2002)	X Plan (2002-07)	XI Plan (2007-12)	XII Plan (2012-17)	Total
12.18	54.61	158.97	135.54	361.30



Silk Samagra

With the discontinuation of CDP from 2014-15 onwards, the support for sericulture development continued as a Central Sector Scheme, namely, Integrated Scheme for Development of Sericulture Industry (ISDSI), during 2015-16 & 2016-17. A comprehensive Central Sector Scheme of Central Silk Board (CSB), namely, Silk Samagra, is under implementation from 2017-18 to 2019-20, for overall development of sericulture industry in the country. CSB has been supporting the states towards implementation of various beneficiary oriented components under mulberry, vanya and post-cocoon sectors. These interventions are important tools for transfer and adoption of improved technology packages developed by the research institutes of CSB. The programme catalyses the efforts of State Governments to improve quality, productivity and production of raw silk besides, generating employment opportunities particularly, in the rural areas. The interventions cover major areas viz., (a) Development and expansion of host plant, (b) Strengthening and creation of silkworm seed multiplication infrastructure, (c) Development of farm and post-cocoon infrastructure,



Karnataka

(d) Up-gradation of reeling and processing technologies in silk, and (e) Capacity building through skill development/ Enterprise development programme. The details of assistance are as below:

(Rs. in crore)				
Year	2015-16	2016-17	2017-18	2018-19
Scheme	ISDSI		SILK SAMAGRA	
Fund released	4.98	6.73	-	-

State Plan schemes

Sericulture is an important activity in the state with a separate Ministry to look in to all matters related to development of sericulture. There is a Directorate for sericulture development, through which all developmental schemes are being implemented. Apart from providing matching state share under the erstwhile CDP and now under the ongoing Silk Samagra, Government of Karnataka has been supporting the development of sericulture through its own state scheme. The state scheme is designed to cover all components from developing mulberry plantation to establishment of automatic reeling units, plus some innovative components. The details of budget provision made by the state for the development of sericulture sector are as under:

(Rs. in crore)		
During XII Plan (2012-17)	2017-18	2018-19
932.43	395.92	307.06

Special components under ongoing state schemes include incentive for seed cocoons, subsidy on chawki and support for construction of mounting halls, reeling sheds and solar water heaters.

Convergence programme

Apart from the funds under CDP/CSS and state schemes, the State is seeking funds under convergence programme like RKVY & MNREGA for the development of sericulture. The details of fund sourced by the state under convergence programme are indicated below:

(Rs. in crore)			
Year	RKVY	MGNREGS	Total
XII Plan (2012-17)	56.49	207.56	264.05
2017-18	6.38	51.66	58.04
2018-19	-	5.99	5.99

Infrastructure under CSB and State

The following infrastructure of CSB and the state department are supporting for the development of sericulture in the state:

CSB infrastructure

#	Name of the Unit	Nos.
1	Headquarters of CSB -Bengaluru	1
2	Mulberry Research Institute (CSRTI), Mysuru	1
3	Regional Sericulture Research Station (RSRS)	2
4	Research Extension Centre (REC)	3
5	REC Sub-Unit	12
6	P4 Station	1
7	P2- Basic Seed Farm	6
8	Commercial Seed Production Centre (CSPC)	6
9	Post-Cocoon Research Institute (CSTRI),Bengaluru	1
10	Sub Units of CSTRI	5
11	Certification Centre (CC)	1
12	Seri Biotech Research Laboratory (SBRL)	1
13	Silkworm Seed Testing Laboratory (SSTL)	1

State infrastructure

The Directorate for sericulture development at Bengaluru is supported by its four Zonal offices and many sericulture extension centres spread across the State. The total manpower available at the State Sericulture Department is 2038 against a sanctioned strength of 4299. The following reeling infrastructure is available at beneficiary level to support value addition for cocoons produced in the state:

#	Type of reeling unit	No. of units
1	Charka	1917
2	Cottage Basin Reeling	3761
3	Multi End Reeling	238
4	Automatic Reeling	56





Marketing

Karnataka is having the Asia's largest silk cocoon market located at Silk city Ramanagaram. The department of sericulture has established cocoon markets to facilitate both rearers and reelers to get competitive and fair price to their cocoons. This type of regulated transaction system of cocoons exists only in Karnataka. In these markets, the cocoons brought from the rearers are transacted as separate lots and dealt in open auction. To bring transparency in transactions, electronic weighing machines and computers are installed in the markets. State also has 55 Government Cocoon Markets and 10 Silk Exchanges.

Way forward

- Systematic expansion of area under mulberry plantation with a cluster-based approach with well-defined backward and forward linkages
- 1.25 lakh ha under mulberry and 14600 MT raw silk production by 2030
- Establishment of Silk Parks to support the unorganised silk reeling sector
- Thrust on by-product utilization and non-textile application of silk
- Linking sericulture with tourism by developing Seri-Tourism in Bangalore-Mysore corridor

Success story



Shri Syed Salim Abrar
M/s S.R.R. Silk Reeling
District: Ramanagaram,
Karnataka

The concept of automatic reeling in India began during the X Plan, with the first two pilot units going to the States of then combined Andhra Pradesh & Tamil Nadu. Shri Syed Salim Abrar of M/s S.R.R. Silk Reeling was the first person to establish an automatic reeling unit in Ramanagaram, Karnataka. With the commercial production, starting in the year 2010, this unit became a model for many more automatic reeling units in the state. Since its inception, the unit is producing international quality raw silk consistently and is contributing to *Make in India* initiative. The success of M/s S.R.R. Silk Reeling influenced many reelers to go in for automatic silk reeling. As on date, 27 ARM units are functioning and 29 units are under various stages of implementation. For the success of automatic reeling concept in Karnataka, Shri Syed Salim Abrar deserves some credit.

“The concept and development of automatic reeling machine gave ways for reelers like me and I’m thankful to Central Silk Board for all technical guidance and support”





KERALA

 38,863 sq. km.
  3,34,06,061
  94%

Introduction

Kerala is on the South-western, Malabar Coast formed on 1st November 1956 by combining Malayalam speaking regions. It is bordered by Karnataka, Tamil Nadu and the Lakshadweep Sea & Arabian Sea to the West and divided into 14 districts with the capital Thiruvananthapuram.

The state has witnessed significant emigration, especially to Arab countries of the Persian Gulf during the Gulf Boom of the 1970s and early 1980s, and its economy depends significantly on remittances from a large Malayali expatriate community. Hinduism is practised by more than half of the population, followed by Islam and Christianity. The culture is a synthesis of Aryan, Dravidian, Arab, and European cultures, developed over millennia, under influences from other parts of India and abroad.

Status of silk industry

Kerala is one of the largest per-capita consumers of silk products in the country, though the state has a little share of silk production. Sericulture is a non-traditional activity in Kerala promoted by the state government. Sericulture schemes are implemented by Rural Development Department. The productive acreage was 555 acres up to 2001-02 and during the X plan period, it increased to 3351 acres. Cocoon production increased from 31 MT during 1995-96 to 101 MT in 2006-2007, the highest in the sericulture history of the state. Kerala is a 100% bivoltine state, producing high quality cocoon with higher Silk Ratio Percentage (SR%). The growth in cocoon production was significant particularly, in X Plan period. The current

cocoon production in the state (2017-18) was 110 MT. The Central Silk Board and the Rural Development Department are taking various measures to implement the Sericulture activities in the state.

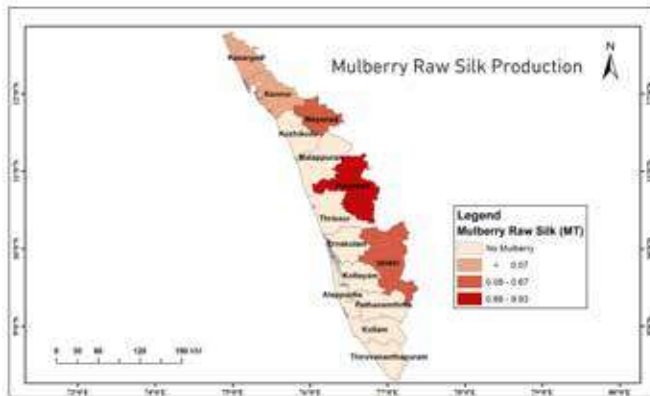
Handloom industry is the 2nd largest traditional industry in Kerala, the first being Coir. Out of the total number of handloom weavers in the state, nearly 42% are reported to be in Thiruvananthapuram district only. The district with the 2nd largest concentration of weavers and looms is Kannur in North Kerala. The products in Kannur district, meant mainly for export market. The type of looms, the technique of weaving, skill of weavers, type of products etc in Kerala varies from district to district.

The Government of Kerala vide GO. (RT) 3413/2014/LSGD dt. 20.12.2014 has constituted a Directorate of Sericulture under Commissionerate of Rural Development and designated the Commissioner for Rural Development as the Director of Sericulture of the state. The government of Kerala has prescribed an institutional structure for sericulture project implementation in the present LSGD (RD) Department and in the context of Panchayath Raj Institutions (PRI) through Jilla Panchayat/Block Panchayat/Grama Panchayath. A Directorate of Sericulture is functioning under CRD with Deputy Director of Sericulture along with a few Assistant Sericulture Officers for technical support. There are very good prospects for further expansion of this activity in Kerala establishing with backward and forward linkages.

Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	125	141	126	149
II	Mulberry raw silk (MT)				
	Bivoltine	7	11	11	15
	Total	7	11	11	15





District-wise raw silk production during 2016-17

#	District	Mulberry raw silk production (MT)
1	Idukki	0.365
2	Palakkad	9.933
3	Wayanad	0.671
4	Kannur	0.023
5	Kasargod	0.067
	Total	11.06

Schemes of Government of India

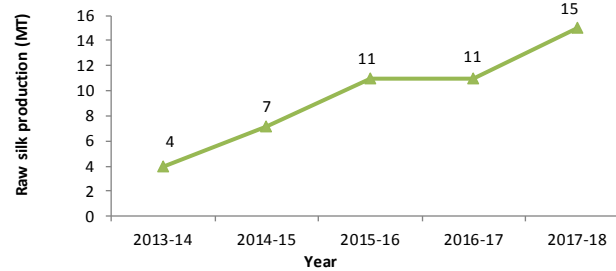
(Rs. in lakh)

Year	Central share (CSB)	State share	Beneficiary share	Total
2013-14	1.10	--	--	1.10
2014-15	--	--	--	--
2015-16	68.27	17.07	17.07	102.41
2016-17	146.60	31.94	22.52	201.06

Silk Samagra

State has not sought support under Silk Samagra.

Silk production trend - Mulberry



State plan schemes

For the development of sericulture activities in Kerala, in the cluster pockets of Palakkad, Idukki & Wayanad districts, CSB has formulated a project at a total cost of Rs.925.50 lakhs during two years period from 2018-19 to 2019-20 as per details of break up given below in the table:

(Rs. in lakh)

#	Components	2018 - 19			2019 - 20		
		Project cost	CSB share	State share	Project cost	CSB share	State share
I Palakkad Cluster							
1	Pre -cocoon components	161.00	80.50	40.25	191.50	95.75	47.88
2	Training, HRD, Skill development components	3.75	3.75		3.75	3.75	
	Total	164.75	84.25	40.25	195.25	99.50	47.88
II Idukki Cluster							
1	Pre -cocoon components	89.75	44.88	22.44	138.00	69.00	34.50
2	Training, HRD, Skill development components	2.25	2.25		3.00	3.00	
	Total	92.00	47.13	22.44	141.00	72.00	34.50





Kerala

III Wayanad Cluster

1	Pre -cocoon components	125.50	62.75	31.38	200.25	100.13	50.06
2	Training, HRD, Skill development components	3.00	3.00		3.75	3.75	
Total		128.50	65.75	31.38	204.00	103.88	50.06
Grand Total		385.25	197.13	94.07	540.25	275.38	132.44

Convergence programmes

The state could not mobilise support from convergence programmes.

Existing sericulture infrastructure in the state

Sericulture villages	20
Sericulture farmers	256
Chawki rearing centres	1
Licensed silkworm seed production centres (Govt + CSB + Private)	1
Registered seed farmers (P1)	46

Infrastructure under CSB

#	Name of the CSB Unit	No.
1	Silk Mark Organization of India (SMOI), Palakkad 0	1
2	Research Extension Centre (REC), Palakkad	1
3	Basic Seed Farm (P1, P2 and P3), Palakkad	1
4	Silkworm Seed Production Centre (SSPC), Palakkad	1

Highlights of CSB's intervention

- Improved mulberry variety V1, S36 and improved silkworm breeds (CSR breeds) developed by the research institutes of the CSB have improved the productivity and quality of silk
- Skill up-gradation to departmental officials and stake holders of silk industry
- 1012 rearing houses supported
- 1,238 acres developed under high yielding mulberry variety
- 624 ha mulberry plantation supported with drip irrigation

Way forward

- Steps to explore potential of the state for producing high quality bivoltine seed cocoons in Palakkad, Idukki and Wayanad districts would help sustenance of bivoltine sericulture in suitable clusters besides its expansion.
- To integrate sericulture with other rural development initiatives so that, more women can participate and take up sericulture along with other livelihood activities as a part of the group approach.





Success story



Shri Amalraj Francis Xavier

Village: Kozhipara,
District: Palakkad
Kerala

Shri Amalraj Francis Xavier, Kozhipara, Palakkad is a stakeholder of sericulture since last 13 years. The farmer is adopting the new technologies when it reaches to the door step of the farmer through REC, Palakkad. An average of 1500 dfls rearing throughout the year with 10-11 crops and obtaining about 90% cocoon yield.

As informed by him the revenue generated by him through sericulture was very well utilized for his family development such as construction of new dwelling house, purchase of new motor cycle, mulberry farm equipments like mini power tiller, weed cutter and power sprayer etc. and his children getting good education. He is very happy with sericulture activities and further, he is extending mulberry plantation in two more acres besides, two acres already available. His two brothers also started sericulture. He is a good farmer and always supporting other farmers those who are practising sericulture in that sericulture pocket.

“I’m very happy with sericulture activities and further, able to extend mulberry plantation in two more acres”.





MADHYA PRADESH

 3,08,245sq. km.
  7,26,26,809
  69.32%

Chanderi



Chanderi is a traditional ethnic fabric characterized by its lightweight, sheer texture and fine luxurious feel. Chanderi fabric is produced by weaving in silk and golden *zari* in the traditional cotton yarn results in the creation of the shimmering texture. Sarees are produced from three kinds of textiles: pure silk, Chanderi cotton and silk cotton. Traditional coin, floral art, peacocks and geometric designs are woven into different Chanderi patterns.

Maheshwari



Maheshwari sarees are glossy finish and lightweight. Though originally, done only with silk, Maheshwari sarees are now available in cotton, silk cotton and with wool. With fine cotton yarns in its weft and silk in the warp, this light and airy fabric is soft & lustrous. These are specific sarees of Maheswar cluster.

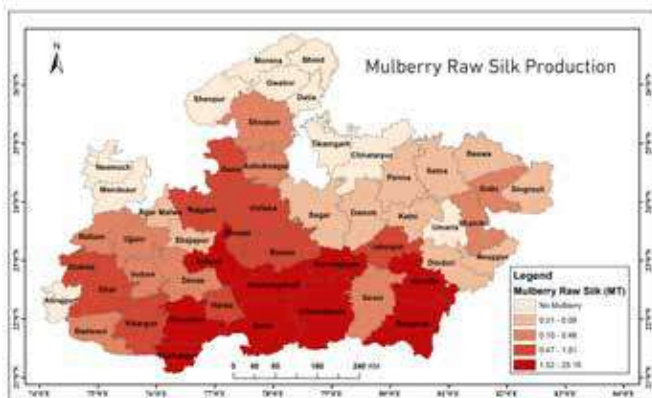
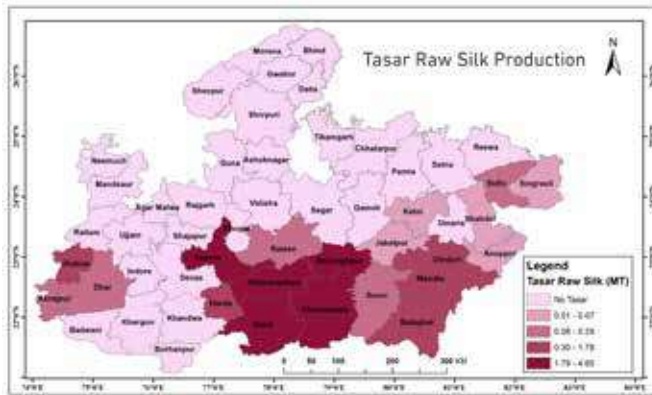
Introduction

Madhya Pradesh's economy is predominantly agrarian. However, despite favorable soil, agro-climatic conditions and abundant surface and ground water resources, the agricultural productivity is low. The poor performance is attributed mainly to small and fragmented land holdings, low take off, less credit and lack of irrigation. Issues affecting agricultural growth in the state include poorly developed rural infrastructure (for example, rural roads, marketing, electrification and communication); input supply services and inadequate groundwater development/exploitation. The state enjoys a tropical climate, suitable for mulberry cultivation.

Status of silk industry

Sericulture villages	125
Sericulture farmers	24248
Reelers	534





The Madhya Pradesh government started sericulture in 1955 with establishing a few mulberry centers in the district of Indore. It was a completely new and non-traditional activity for the state and started with the objective of providing employment to the poor people of rural areas. Initially, there were only 10 silk centers in the state and over a period of 10 years, the number of silk centres increased to 70 in seven districts. By the end of 1960, the extension activities in the sericulture sector were taken up with the support of IRDP (Integrated Rural Development Programme) under the industrial department, wherein farmers were involved in mulberry cultivation and silkworm rearing. The Department of Sericulture charged 10 to 20 percent

of the total returns from cocoon production from the farmers towards the cost of resource utilization. These efforts for development of sericulture were further, intensified with the creation of a separate Directorate of Sericulture in 1984. At present, sericulture is practiced in mulberry as-well-as non-mulberry sectors through silk centres throughout the state. With a purpose to provide an opportunity for self-employment through sericulture, the state government in 1996 introduced a scheme, 'Mulberry Swavalamban Yojana'. There are 80 Mulberry Swavalamban Centres in all the 21 districts of the state covering an area of 673 acres under plantation. Under this scheme, mulberry is planted for one acre in the government farm by the farm labourers, who take the benefits of the scheme. In addition to this, an amount of Rs.6,200 was also given to them as a revolving fund, while irrigation facility, rearing house and other equipments for rearing of cocoons were arranged by the department. Other than this, the department also provided the dfls at a nominal price of Rs.1 per dfls and technical help for cocoon rearing. To promote the sericulture in state, there are a total of 116 mulberry silk centers in 25 districts covering an area of 4281.12 acres.

Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	4854	5597	5597	2765
II	Mulberry raw silk (MT)				
	Bivoltine	128	107	30	71
	Cross Breed	59	93	54	14
	Total (I)	187	200	84	85
III	Vanya silk (MT)				
	Tasar	59	56	26	18
	Eri	2	1		
	Vanya Total (II)	61	57	26	18
	Grand Total (I+II)	248	257	111	103



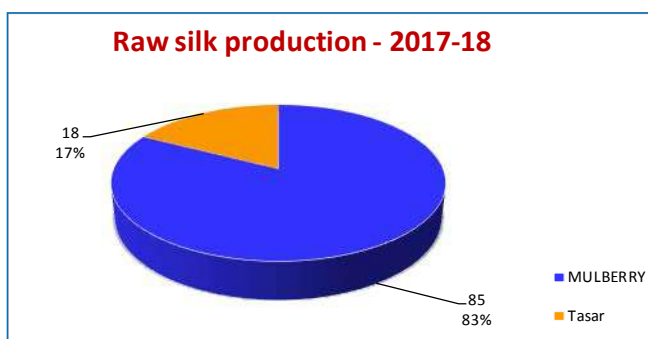
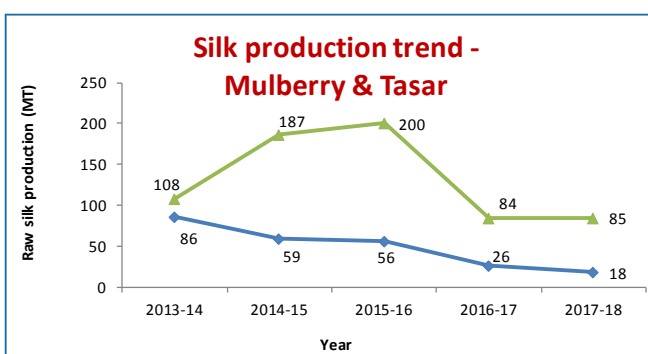


Madhya Pradesh

District-wise status of sericulture during 2017-18

#	District	Raw silk (MT)			Vanya Tasar
		Mulberry		Total	
		BV	CB		
1	Guna	0.5	0.36	0.86	
2	Ashoknagar	0.06	0.11	0.17	
3	Shivpuri	0.04	0.06	0.1	
4	Vidisha	1.15	0.4	1.55	
5	Rajgarh	0.4	0.32	0.72	
6	Bhopal	0.34	0.02	0.36	
7	Sehore	0.63	0.46	1.09	0.02
8	Raisen	0.28	0.12	0.4	
9	Balaghat	3.1	0.99	4.09	1.95
10	Seoni	0.08	0.06	0.14	1.03
11	Mandla	1.35	0.45	1.8	1.43
12	Dindori	0.01	0.08	0.09	0.3
13	Narsinghpur	3.01	2.47	5.48	1.62
14	Jabalpur	0.23	0.28	0.51	0.3
15	Katani	0.01	0	0.01	0.05
16	Panna	0.01	0.02	0.03	
17	Sagar	0.01	0.02	0.03	0.02
18	Chhatarpur	0		0	0.09
19	Shahdol	0.23	0.15	0.38	2.15
20	Anuppur	0.06	0.04	0.1	0.46
21	Sidhi	0.15	0.12	0.27	0.83
22	Satna	0.03	0.06	0.09	0.42
23	Singraulli	0.05	0.05	0.1	0.47
24	Reewa	0.01	0.01	0.02	
25	Indore	0.01	0.07	0.08	
26	Dhar	0.16	0.45	0.61	0.03
27	Jhabua	0.06	0.22	0.28	0.46
28	Khargon	0.22	0.49	0.71	
29	Badwani	0.11	0.2	0.31	
30	Alirajpur	0	0	0	0.04

#	District	Raw silk (MT)			Vanya Tasar
		Mulberry		Total	
		BV	CB		
31	Ujjain	0.02	0.15	0.17	
32	Shajapur	0.01	0.01	0.02	
33	Devas	0.03	0.12	0.15	
34	Ratlam	0.04	0.11	0.15	
35	Agar	0.01	0.03	0.04	
36	Khandwa	1.45	0.36	1.81	
37	Burhanpur	0.66	0.69	1.35	0.01
38	Hoshangabad	32.2	3.95	36.15	2.72
39	Betul	20.51	0.66	21.17	0.91
40	Chhindwada	2.79	0.01	2.8	1.39
41	Harda	0.95	0.09	1.04	1.12
	Total	71	14	85	18





Schemes of Government of India

Government of India is providing continued support to Madhya Pradesh for intensive development of sericulture in all its spheres for maximization of benefits from existing capacity as a part of consolidated efforts and for creating new infrastructure at farmers' level, Common Facility Centers for farm mechanization, reeling, spinning and silk weaving activities, besides, infrastructure for seed production for state governments. These interventions are expected to transform the state from the present level of silk production to *Silk hub of India* in coming years by providing self-employment opportunities in the hinterland, protect the heritage with ultimate aim of "Make in India" in an eco- friendly atmosphere.

Government of India has supported Madhya Pradesh State for implementation of Catalytic Development Programme, a Centrally Sponsored Scheme from IX Plan to XII Plan. The CDP envisaged development of host plantations, post-cocoon infrastructure, extension, up-gradation of silk reeling and processing facilities, capacity building, publicity and enterprise development etc.

Funds released by Central Silk Board to Madhya Pradesh for implementation of the CDP from IX Plan to XII plan are as under:

(Rs.in lakh)

IX Plan (1997-2002)	X Plan (2002-07)	XI Plan (2007-12)	XII Plan (2012-17)	Total funds released
203.43	737.37	2874.90	4210.54	8026.24

With a view to restructure Centrally Sponsored Scheme, the Government of India discontinued the CDP during 2015-16, and introduced Silk Samagra (ISDSI).

Silk Samagra

This is a comprehensive Central Sector Scheme of Central Silk Board (CSB) under implementation from 2017-18 to 2019-20, for overall development of sericulture industry in the country, implemented directly as well as through state governments. The programme catalyzes the efforts of state governments to improve the quality, productivity and

production of raw silk besides, generating employment opportunities particularly in the rural areas. The interventions cover the major areas viz., (a) Development and expansion of host plant, (b) Strengthening and creation of silkworm seed multiplication infrastructure, (c) Development of farm and post-cocoon infrastructure, (d) Up-gradation of reeling and processing technologies in silk and (e) Capacity Building through Skill development/ Enterprise development programme. The details of assistance are as below:

(Rs.in crore)

2015-16	2016-17	2017-18	2018-19
ISDSI		Silk Samagra	
738.79	354.57	-	-

State Plan schemes

State has created a separate department for development of sericulture which looks after all issues relating to sericulture. Besides, the state has given matching share for implementation of the schemes/programmes under "Silk Samagra". In addition to the support from Government of India, state has also state-specific plans for maintenance of infrastructure created over various plan periods and for implementation of specific components, which are not covered under any of the central sector and centrally sponsored schemes. The financial assistance provided by the State for maintenance of infrastructure and related activities under sericulture sector during XII Plan was Rs.741.72 crore. The table below indicates the mulberry area and raw silk production in the State for the year 2015-16:

Variety	XII Plan Achievements				National Share (%)
	2012-13	2013-14	2014-15	2015-16	
Mulberry area (ha)	2081	2595	4854	5597	3
Mulberry raw silk production (MT)					
Bivoltine	73	67	128	107	2
Cross Breed	33	41	59	93	





Madhya Pradesh

Variety	XII Plan Achievements				National Share (%)
	2012-13	2013-14	2014-15	2015-16	
Mulberry Total (I)	106	108	187	200	-
Vanya raw silk production (MT)					
Tasar (Tropical)	83	86	59	56	-
Tasar (Oak)	-	-	-	-	-
Eri	2	1	1.50	1	-
Muga	-	-	-	-	-
Vanya Total (II)	85	87	61	57	-
Grand Total (I +II)	191	195	248	257	-

Convergence programme

Funding for the future development programmes could be with a convergence from the Ministry of Textiles, Agriculture and Rural Development etc., in the state to consider sericulture as an important sector and provide matching state share besides, creating a full-fledged sericulture Department in the years to come. The assistance availed by the state under convergence for XII Plan (2012-17) was Rs.1030 crore under RKVY and Rs. 848 crore under MGNREGS.

Infrastructure for sericulture development

To support development of sericulture in all its spheres, the following infrastructure has been created in the state under state and Central Silk Board over different Plan periods:

Existing sericulture infrastructure in the state

#	Name of the Unit	No.
1	Chawki rearing centres	53
2	Licensed silkworm seed production centres (Govt+CSB+Private)	602
3	Registered seed farmers (P1)	90

Infrastructure under CSB

#	Name of the Unit	No.
1	Research Extension Centre (REC)	1
2	REC Sub-Units	1
3	Basic Seed Multiplication and Training Centre (BSMTC)	1

Post-cocoon sector

The following infrastructure at state and beneficiary levels & are available to support value addition of cocoons produced within the state:

Name of the Unit	No.
Multi-end reeling units	16
Cottage basin reeling units	5
Twisting units	6
Vanya reeling/spinning units	388

Marketing

Apex Society *i.e.*, MP Silk Federation is located at Bhopal with different outlets across the state for marketing of cocoons produced by the beneficiaries at the rate fixed by Apex Society. Apex Society (SERIFED) is responsible for marketing of cocoons and yarn of the producers to the consumers like weavers and members of the weaver's co-operative society.

Way forward

- Involving agencies like State Rural Livelihood Mission to include sericulture in their programmes, in view of poor staff strength for constant monitoring.
- Cluster approach and privatization of various activities across the value chain to make the infrastructure created functional.
- Strengthening post-cocoon sector- setting of Indigenous ARMs/multi-end reeling machines, hot air dryers and improved vanya reeling machines, like wet reeling machines, solar operated spinning machines and tasar reeling machinery.





Success Story



Shri Yashwant

Village: Salhe

Taluk: Lalburra

District: Balaghat

Madhya Pradesh

Ph: 8989054179

Shri Yashwant has been practicing sericulture since long. He takes up silkworm rearing with bivoltine hybrids, harvesting more than 355 kg of quality cocoons out of 700 dfls from his 1 acre of mulberry plantation with an yield of 50 kg cocoons per 100 dfls. He has availed CDP assistance for construction of rearing house, bivoltine rearing equipment and irrigation facility. He has adopted innovative sprinkler system over roof of rearing house that helped him in getting 30-40% higher yield per 100 dfls. His average income is Rs.1 lakh per year.

“Income from sericulture has given good livelihood for me and my entire family. Now, I am able to provide good education to my children. I have constructed own pucca house, purchased power tiller, TV, and motor cycle etc. I am proud to take up sericulture and realized that it is a sustainable activity that farmers should take up, besides, their traditional farming.”





MAHARASHTRA



Introduction

Maharashtra is India's second largest state, in terms of both population and geographical area. The state has 36 districts, divided into six revenue divisions viz., Kokan, Pune, Nasik, Aurangabad, Amravati and Nagpur. The rainfall in the state varies from a heavy 4000 mm in *Kokan* to barely 500 mm in Khandesh area. Varied agro-climatic conditions offer good scope for cultivation of variety of cereals, cash crop and horticultural crops.

The state has gross area of 229 lakh ha where, cereals, pulses and other major food grains are grown. Forest covers 20.04 percent (61,724 sq.km) of the total geographical area of the state. The state has made rapid strides in the production of commercial crops like sugarcane, soybean, cotton, oilseeds and onions. The last few years have witnessed healthy shift towards horticultural crops and sericulture. The state is famous for its Alphonso mangoes, grapes, bananas, pomegranates and oranges. The per capita income in the state at current prices, as at the end of 2017-18, has been Rs.180596.

Status of silk industry

The Directorate of Sericulture, Nagpur was established in September, 1997 for the development of sericulture in the state. Presently, silk industry is progressive in 28 districts. Maharashtra is a non-traditional sericulture state that produces both mulberry and tasar silks. It occupies the top position in terms of quantity in silk production among non-traditional states and enjoys 13th rank among the silk producing states. About, 9955 farmers are involved in silk production with mulberry plantation in about 10816 acres of land. Similarly, 3000 farmers are involved in tasar plantation covering 10669 hectares.

In 2017-18, farmers produced 2280 MT of mulberry cocoons to produce 350 MT of raw silk. Similarly, the tasarfarmers reared 354 lakh numbers of tasar-cocoons, out of which 19.33 MT of tasar raw silk was produced. Thus, sericulture provides good employment opportunities for farmers in the state. Pune and Aurangabad divisions outstand among all sericulture districts as far as mulberry silk is concerned whereas, tasar silk is grown in four districts of *Vidarbha* region i.e., Gondia, Gadchiroli, Bhandara & Chandrapur. The production details during last five years are indicated below:

Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (Ha)	2774	3947	3480	4327
II	Mulberry Raw Silk (MT)				
	Bivoltine	199	249	228	350
	Cross Breed	4	4	3	3
	Total	203	252	231	353
III	Vanya Silk (MT)				
	Tasar	19	21	27	19
	Grand Total	222	274	258	373

District-wise status of sericulture (2017-18)

#	District	Mulberry cocoon production (MT)	Mulberry raw Silk production (MT)
1	Amaravati	18.817	2.895
2	Yavatamal	60.018	9.234
3	Washim	18.508	2.847
4	Buldhana	69.359	10.671
5	Akola	15.105	2.324
6	Wardha	71.177	10.95
7	Chandrapur	0.182	0.028
8	Nagpur	43.484	6.69





#	District	Mulberry cocoon production (MT)	Mulberry raw Silk production (MT)
9	Bhandara	2.289	0.352
10	Aurangabad	113.244	18.422
11	Jalana	246.996	37.999
12	Parbhani	122.253	18.808
13	Hingoli	70.625	11.565
14	Nanded	85.031	14.082
15	Latur	70.369	10.826
16	Osmanabad	198.409	30.524
17	Beed	334.049	51.392
18	Pune	150.216	23.11
19	Sangali	67.73	10.42
20	Satara	106.128	16.327
21	Solapur	156.153	24.024
22	Kolhapur	84.341	12.976
23	Ahamad Nagar	133.027	20.466
24	Nasik	30.36	4.671
25	Dhule	1.438	0.221
26	Nandurbar	0.237	0.036
27	Thane	10.311	1.586
Total		2279.86	353.45

Schemes of Government of India

Maharashtra has implemented various centrally sponsored schemes with the help of Central Silk Board, since X five year plan for the development of sericulture in the state. In XI plan, emphasis was on implementation of various Catalytic Development Programmes (CDP) for farmers and entrepreneurs. For Cluster Promotion Programme (CPP), Beed, Osmanabad and Buldhana have been identified for mulberry and Yeola in Nasik district for post-cocoon programmes, particularly, for weavers/designers for up-gradation of *Paithani*. Pune district is covered under normal CDP for mulberry and tasar areas up to 2009-10. During 2010-11, additional seven districts namely Satara, Solapur, Sangli, Ahamadanagar, Aurangabad, Jalna and Nanded were covered under normal CDP. During 2011-12, normal CDP schemes were implemented throughout the state. Release particulars under CDP are depicted below:

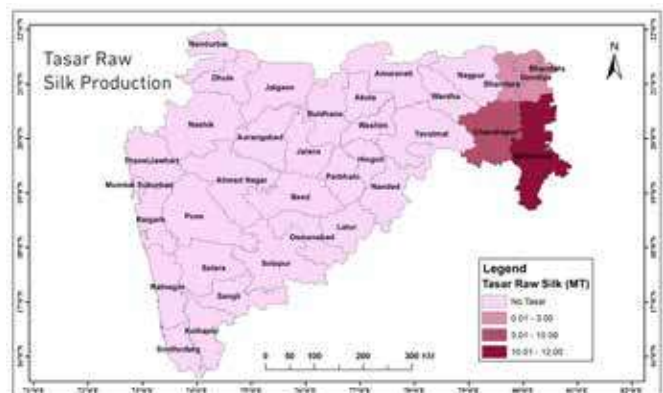
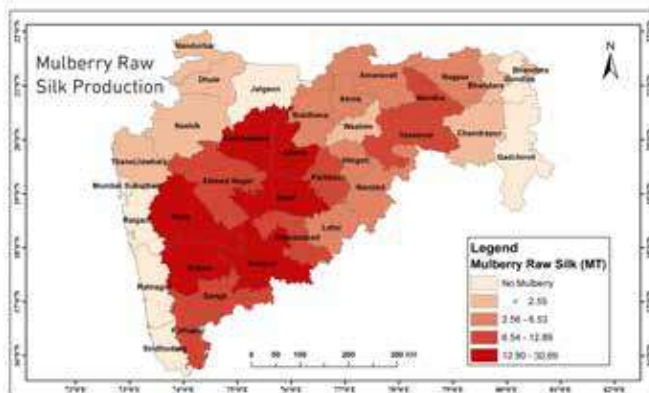
(Rs. in lakh)

Year	2007-08	2008-09	2009-10	2010-11	2011-12
CSB Share released	64.6	83.88	77.8605	28.21	338.04

During XII Plan, CDP scheme is implemented in all mulberry and tasar sericulture districts of the state. The details of fund released by CSB under Catalytic Development Programme (CDP) are as mentioned below:

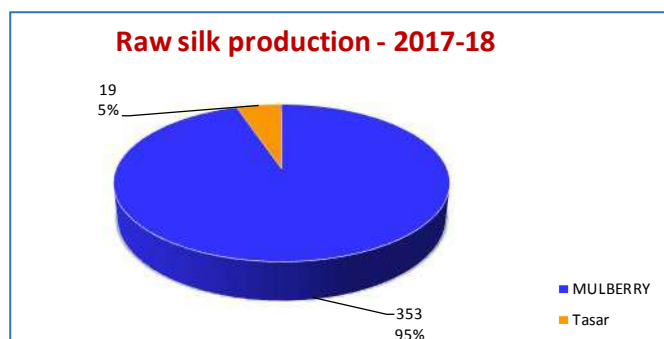
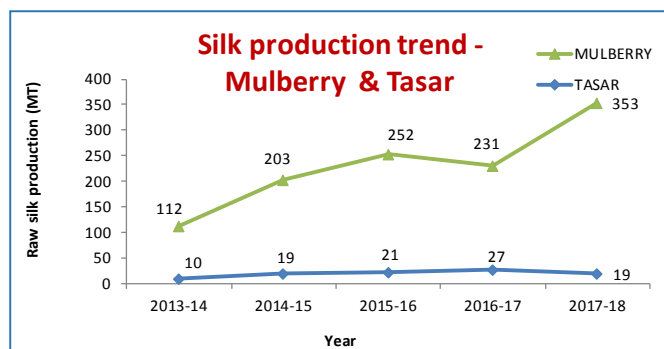
(Rs. in lakh)

Year	2012-13	2013-14	2014-15	2015-16	2016-17
CSB Share released	890.925	951.725	999.83	141.74	Nil





Maharashtra



Silk Samagra

Silk Samagra, a comprehensive central sector scheme of Central Silk Board is under implementation from 2017-18 to 2019-20, for overall development of sericulture industry in the country, implemented directly as well as through state governments. Central Silk Board has been supporting states towards implementation of various beneficiary oriented schemes under mulberry, vanya and post-cocoon sectors. These interventions are important tools for transfer and adoption of improved technology packages developed by the research institutes of Central Silk Board. The programme catalyzes the efforts of state governments to improve the quality, productivity and production of raw silk besides, generating employment opportunities particularly, in the rural areas. The interventions cover the major areas viz., (a) Development and expansion of host plant, (b) Strengthening and

creation of silkworm seed multiplication infrastructure, (c) Development of farm and post-cocoon infrastructure, (d) Up-gradation of reeling and processing technologies in silk and (e) Capacity building through skill development / Enterprise development programme. During 2018-19, under *Tribal Sub-Plan*, *Silk Samagra* fund has been released to Directorate of Sericulture, Maharashtra. The details of assistance are as below:

(Rs.in crore)

2015-16	2016-17	2017-18	2018-19
ISDSI		Silk Samagra	
1.4174	-	-	0.9819

State Plan schemes

The state has given matching share for implementation of the schemes/programmes under CDP/Silk Samagra in addition to the support from Government of India; there are state-specific plans for maintenance of infrastructure created over various plan periods and for implementation of specific components, which are not covered under any of the central sector and centrally sponsored schemes. The state has a man-power of 379 nos. (272 technical and 107 non-technical) for implementation of centrally sponsored schemes, convergence and state specific sericulture programmes.

The details of financial assistance provided by the state for maintenance of infrastructure and related activities under sericulture sector are as under:

(Rs. in crore)

During XII Plan (2012-17)	2017-18	2018-19
21.25	6.18	3.66

The funds from the State Plan programmes were in respect of activities like plantation, silkworm rearing and infrastructure development at beneficiary and state level, besides, maintenance of infrastructure created over a period.





Convergence programme

Funding for the future developmental programmes could be with convergence from Ministry of Textiles, Agriculture and Rural Development etc., in the state to consider sericulture as an important sector and provide matching state share. Table below gives details of assistance availed by the state under convergence:

(Rs. in crore)				
Year	RKVY	MGNREGS	Others	Total
XII Plan (2012-17)	18.58	7.01	22.73	48.32
2017-18	6.19	19.65	1.00	26.84
2018-19 up to Dec 2018	6.47	28.57	-	35.04

Infrastructure under State

Particulars	Mulberry	Tasar
Directorate of Sericulture, HQ, Nagpur		1
Seri Desk at Mantralaya, Mumbai		1
Regional Offices		04
District Sericulture Offices	22	04
Silkworm Seed Production Centre (SSPC)	1	4
PETC	10	15
Reeling Unit (Multi-end & Cottage Basin)	13	6
Twisting & Weaving Centre	2	1
Cocoon Purchase Centre	26	8
Cold Storage	1	-

Infrastructure under Central Silk Board

Particulars	Location
Regional Office	Mumbai
Research Extension Centre (Mulberry)	Baramati, Aurangabad, Osmanabad, Pune, Parbhani & Amravati
Regional Sericulture Research Station - Tasar	Bhandara
Basic Seed Multiplication & Training Centre	Daudipar, Dist. Bhandara
Demonstration-cum-Technical Service Centre	Bhandara

Staff strength

The state has a man-power of 379 nos. (272 technical and 107 non-technical) for implementation of centrally sponsored schemes, convergence and state specific sericulture programmes.

Marketing

State government is offering Minimum Support Prize (MSP) for cocoon producer. Directorate of Sericulture have sanctioned 21 reeling-cum-twisting units in the state with financial assistance from CDP and RKVY. Government has sanctioned an incentive of Rs.100per kg raw silk produced on multi-end reeling machine and Rs.150per kg for raw silk produced on automatic reeling machine in mulberry and Rs.100per kg for tasar reeled yarn through DPC (State Plan).

Directorate of Sericulture is establishing Government cocoon market on the lines of Ramanagaram market (Karnataka) at Jalna and Solapur districts through RKVY. It has started a cocoon market on experimental basis at APMC, Jalna on 22nd April 2018 and the response from farmers was good.

Way forward

- Promoting group approach to sustain sericulture.
- Establishing market linkages, tasar host plantations, incentives for cocoon processing
- Credit linked capital subsidy to silk entrepreneurs like dyers, processing and weaving machineries.
- *Maha-Reshim* campaign with the help of BARTI, PUNE to create awareness and register new farmers.
- Tasar tourism corridor will be established across the Forest/Tiger Reserve at Tadoba/ Pench/ Navegaon and Nagzira through Forest Department and MTDC.





Maharashtra

Success Story



Smt. Shantabai Shankar Bhusari

Village: Asalgaon

Taluk: JalgaonJamod

Dist.: Buldana

Mobile: 9921682808

Smt. Shantabai Shankar Bhusari and her son Satish Bhusari of Asalgaon Village, Jalgaon, Jamod taluk, Buldana have only 2.5 acre of agriculture land. Traditional agriculture crop in dry and hot area of Vidarbha region of Maharashtra hardly helped them. On attending an extension communication programme of Central Silk Board and Directorate of Maharashtra, they decided to adopt sericulture. They planted one acre with V1 variety of mulberry besides, tree plantation around the field and rearing house to save the garden from dust, heat wave and pesticide drifts from adjoining cotton/ soybean fields. The mulberry plants were pruned at a height of 1.5 feet and using an open well for irrigation by drip irrigation facility. All the five members of family are engaged in sericulture.

She uses only organic fertilizers for sericulture like compost made of vegetative materials available in field including annual grasses etc. She harvested good and robust cocoon crops and fetched highest rate for the cocoons with a production of 71.29 kg/100 dfls during first year and 69 kg/100 dfls during second year of plantation. Wetting the roof of the rearing house by Drip system helps her to maintain required temperature and humidity in the rearing shed during hot season. Previously, she was earning only Rs.2 lakh from soybean / cotton and vegetables in entire 2.5 acre. Now, additional income from sericulture in one acre itself is Rs.2,32,205 and total annual income from 2.5 acre is Rs. 4.82 lakh.

Crop wise rearing details

Particulars/ Year	Dfls Reared	Cocoon Production (kg)	Avg. Rate (Rs.)	Yield/100 dfls (Kg)	Amount realised (Rs.)
Total/ Average (2016-17)	850	606	439.17	71.29	266500
Total/Average (2017-18)	700	482	478.75	69	232205

“Sericulture has changed our life and helped us earn better. We are planning to extend the mulberry plantation to further our returns”





MANIPUR



22,327sq. km. 27,21,756 79.21%

Introduction

Manipur literally meaning «A jewelled land» nestle deep within a lush green corner of North-East India. It is indeed a state of exquisite natural beauty and splendours, surrounded by blue hills with an oval shaped valley at the centre, rich in art and tradition and blessed with nature's pristine glory. Manipur is one of the seven sister states in North-eastern region of India and bounded by Nagaland to the North, Mizoram to the South, Assam to the West and having international border of Myanmar to its East. Out of 16 districts in Manipur, 5 are in the valley and 11 are in the hilly region.

The main language of the state is Meitei (also known as Manipuri) while Loi, Yaithibi, Kuki and Naga people speak a variety of Sino-Tibetan languages. Tribes constituting about 20% of the state population are distinguished by dialects and cultures. Manipur is home to many sports and is credited with introducing Polo to the world. It is also the origin for Manipuri dance. The two areas of Valley and Hills are distinct in physical features and are conspicuous in flora and fauna which include varieties of sericigenous insects and their food plants. Agriculture is the primary occupation of the rural populace of Manipur. Besides, sericulture plays an important role in providing subsidiary income. The climatic condition is conducive for commercial exploitation of mulberry, eri, muga and oak tasar silk. Manipur is famous for creating intricate designs in handlooms and holds 2nd position in the country with 1,90,634 number of handlooms and has 2,18,753 handloom weavers.

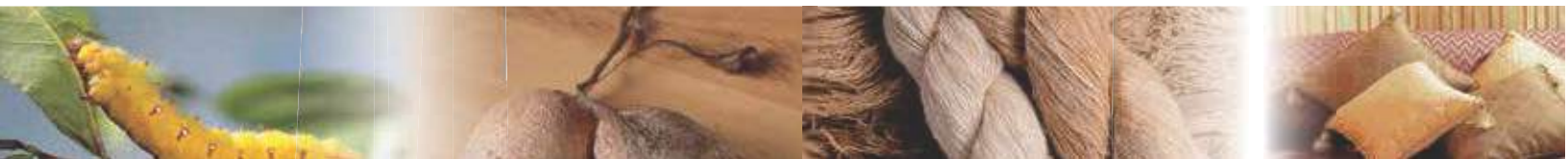
Status of silk industry

The art of silkworm rearing and silk weaving has long been closely associated with the culture and tradition amongst the women folk of Manipur. Manipur has been practicing all the four types of natural silks *i.e.*, mulberry, eri, muga and oak tasar. Availability of food plants, traditional rearers and skilled weavers are advantages for sericulture development in the state. The five valley districts are major mulberry silk producing areas. Out of the total population, 1% of families are involved in sericulture industry.

Presently, about 32,078 hectares of land is covered under silkworm food plantation in the state involving around 18,000 families in 782 villages with 3,567 reelers. Manipur ranks first in mulberry raw silk production in NE and highest producer of oak tasar silk in the country. The state has tremendous scope for development of oak tasar industry. In overall silk production, it holds fourth position in the NE after Assam, Meghalaya and Nagaland. The strength of the state is in eri silk production followed by mulberry, oak tasar and muga. There has been incremental increase in production of all varieties of silk.

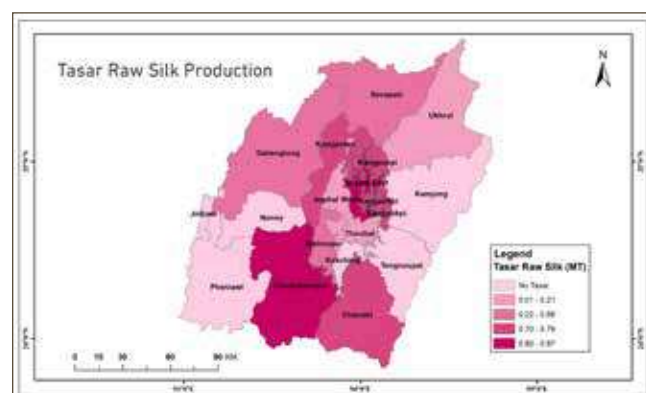
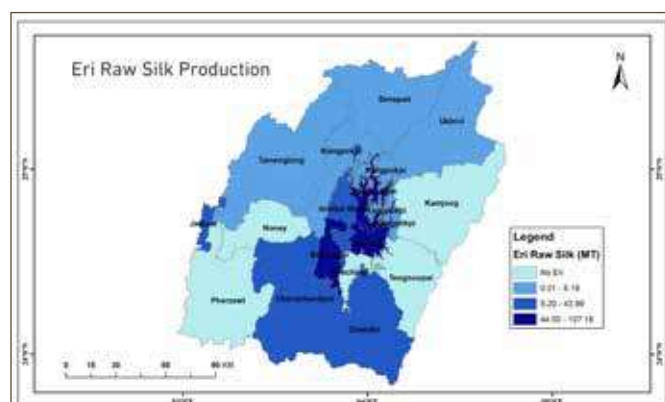
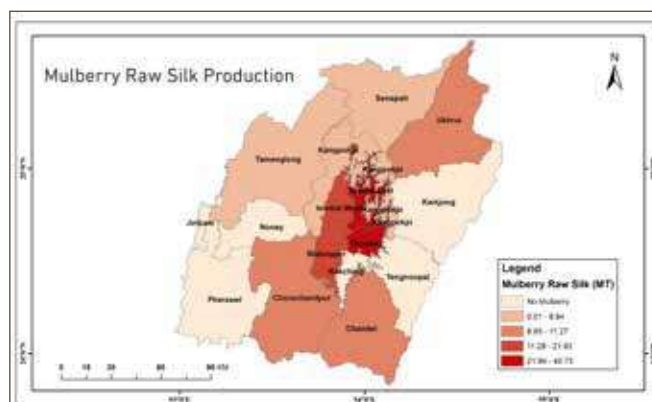
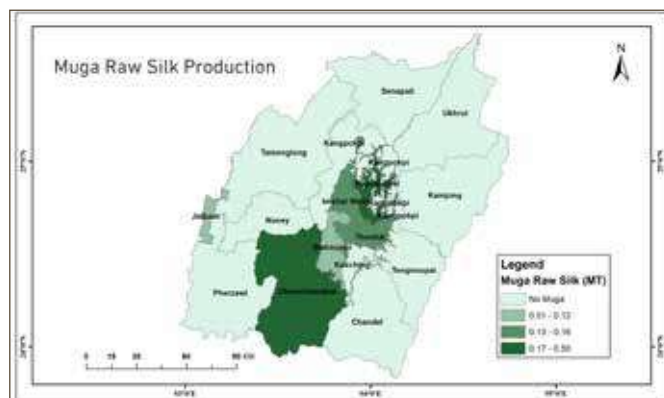
Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	6858	7338	7548	3590
II	Mulberry raw silk (MT)				
	Bivoltine	138	133	149	84
	Cross Breed	12	10	12	9
	Mulberry Total (I)	150	144	161	92
III	Vanya Silk (MT)				
	Oak-Tasar	4	4	5	5
	Eri	361	370	363	290
	Muga	1	1	1	1
	Vanya Total (II)	366	375	369	296
	Grand Total (I+II)	516	519	529	388





Manipur



District-wise status (2017-18)

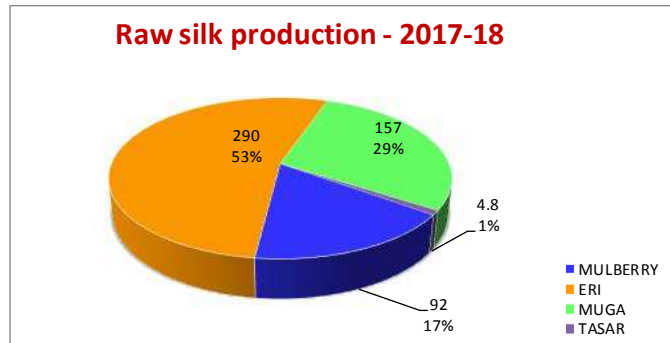
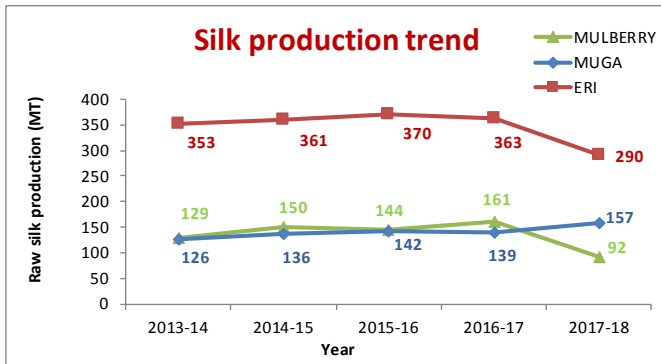
#	District	Raw silk production (MT)			
		Mulberry	Oak-Tasar	Eri	Muga
1	Imphal East	22.00	0.83	50.56	0.57
2	Imphal West	9.00	0.09	26.26	0.19
3	Troubal	15.00	0.21	74.84	-
4	Bishnupur	12.00	0.23	68.08	0.07
5	Senapati	5.00	0.70	2.40	-
6	Ukhrul	6.00	0.09	4.17	-
7	Chandel	5.30	0.83	13.09	-
8	Churachandpur	7.50	0.95	5.65	0.20
9	Tamenglong	7.00	0.28	4.59	-
10	Kangpokpi	3.38	0.79	2.48	-
11	Jiribam	-	-	37.92	0.14
	Total	92	5	290	1

The 11 districts in Manipur practise sericulture, either mulberry or eri, muga or oak tasar and in certain cases more than one variety.

Schemes of Government of India

Government of India is providing continued support to Manipur for intensive development of sericulture in all its spheres for maximization of benefits from existing capacity as a part of consolidation efforts and for creating





new infrastructure at farmers' level, Common Facility Centres for reeling, spinning and silk weaving activities, besides, infrastructure for seed production for state government. These interventions are expected to transform the state from the present level of silk production to *silk hub of India* in the coming years, by providing self-employment opportunities in the hinterland, protect the heritage with an ultimate aim of "Make in India" in an eco-friendly atmosphere.

Government of India has supported Manipur for implementation of Catalytic Development Programme (CDP), a centrally sponsored scheme from IX Plan to XII Plan. The CDP envisaged development of host plantations, post-cocoon infrastructure, extension, up-gradation of silk reeling and processing facilities, capacity building, publicity, enterprise development etc. Funds released by Central Silk Board to Manipur state for implementation of the CDP from IX Plan to XII plan are as under:

(Rs. in crore)

IX Plan (1997-02)	X Plan (2002-07)	XI Plan (2007-12)	XII Plan (2012-17)	Total funds released
0.02	2.37	23.98	23.63	50.00

With a view to restructure centrally sponsored scheme, the Government of India discontinued the CDP during 2015-16, and introduced Silk Samagra (ISDSI).

North East Region Textile Promotion Scheme (NERTPS)

Keeping in view the prospects and potentialities for sericulture development in Manipur and in the backdrop of CDP implemented from IX Plan to XII Plan, Government of India, under the umbrella scheme "North East Region Textile Promotion Scheme" (NERTPS) has focussed on sericulture development in Manipur under *Integrated Sericulture Development Project (ISDP)*. The broad objective of the NERTPS under sericulture is to develop and modernize the sericulture sector in the state by providing the required government support in terms of raw material, seed banks, machinery, Common Facility Centres (CFC), skill development, design and marketing support etc. Two sericulture projects under ISDP for valley and hill districts are under implementation. The details of the projects are as below:

Particulars	Project cost (Rs. in Cr.)	Gov share (Rs. in Cr.)	Project in	Project output	
				Benf. (No.)	Raw silk (MT)
ISDP (valley) (mulberry) (2014-18)	149.76	126.60	4 districts & 9 blocks	6,613	450 MT during the project and 200 MT per annum thereafter
ISDP (hill) (mulberry & eri) (2015-18)	30.39	24.67	7 districts & 12 blocks	2,169	29 MT during the project and 20 MT per annum thereafter for mulberry and 38.40 MT during the project and 30 MT per annum thereafter for eri



Manipur

During 2017-18, assistance was provided to Manipur under NERTPS and hence, assistance was not sought under *Silk Samagra*.

Convergence programme

Future development programmes of sericulture in the state could be with convergence of schemes from Ministry of Textiles, Agriculture and Rural Development etc. The table below gives details of assistance availed by the state under convergence.

(Rs. in crore)				
Year	RKVY	MGNREGS	Others	Total
2014-15	-	-	4.00	4.00
2015-16	-	-	2.20	2.20
2016-17	-	-	2.31	2.31

Schemes of the state (State plan)

The state has created a separate department for development of sericulture which looks after all issues relating to sericulture. Besides, the state has given matching share for implementation of the schemes/programmes under "NERTPS". In addition to the support from Government of India, Manipur has also state-specific plans for maintenance of infrastructure created over various plan periods and for implementation of specific components, which are not covered under any of the central sector and centrally sponsored schemes. The state has staff strength of 525, for sericulture sector. The details of financial assistance provided by the state for maintenance of infrastructure and related activities under sericulture sector are as under:

(Rs. in crore)					
Year	2014-15	2015-16	2016-17	2017-18	2018-19
Amount	36.49	27.72	23.13	25.29	28.19

Note: Figure includes Plan & Non-Plan

The funds from the State Plan programmes were in respect of activities like plantation, silkworm rearing,

infrastructure development at beneficiary and state level, besides maintenance of infrastructure available in the state created over a period of time, which are not covered under any centrally funded programmes.

Infrastructure under state and CSB for sericulture development

To support development of sericulture in all its spheres, the following infrastructures have been created under State and Central Silk Board over different Plan periods. CSB established two units - One Regional Sericultural Research Station at Imphal and one Field Laboratory in T. Kullen.

Sector	Infrastructure	Under State
Muga	Seed Farm	02
	Grainage	06
Eri	Basic Seed Farm	03
	Spinning Unit	01
	P2 Grainage	14
	P3 Grainage	03
	Seed Multiplication Centre	08
Mulberry	Seed Farm	34
	Industrial Grainage	15
	Technical Service Centre	27
	Silk Reeling & Spinning Factory	01
	Weaving Unit	02
	Training-cum-Production Centre	02

These units are supporting sericulture development in the State at various stages of silk production value chain.

Post-cocoon sector

The following infrastructure at state level and beneficiary level are available to support value addition of cocoons produced within the state:





Infrastructure	No.
Multi-end reeling units	3
Cottage basin reeling units	21
Twisting units	4
Vanya reeling/spinning units	4

Marketing

There is no organized marketing system in Manipur. However, the state government facilitates the farmers to market the cocoons produced by them at identified locations in the state and invites reelers and other consumers to participate in open auction.

Way Forward

- Development of sericulture in the aspirational district- Chandel, in the form of soil- to- silk project.
- Development of oak tasar industry.
- Keeping in view of the huge potential for eri production and the demand for high quality spun yarn for industries, Government of India has sanctioned a new eri spun silk mill at Sangaipat in Imphal to produce high quality eri spun silk yarn.

Success Story



Shri Thangjam Umakanta Luwangcha

S/o Shri Thangjam Shamungou

Village: Yumnam Khunou

District: Imphal East Manipur - 795 114

Mobile: 9612407810

Shri Thangjam Umakanta Luwangcha (30 years), a graduate from a family of 11 members, was not involved in their house hold farming activities till he came across the income potential in mulberry kisan nursery. Subsequently, he took up raising mulberry saplings of K2 and S-1635 varieties in his 1.25 acre of land. He raised 70,000 saplings every year in one batch which are sold @ Rs.1.75 per sapling. He earns a net income of around Rs.65,000 through kisan nursery, in a span of about 5-6 months.

Sericulture has brought a sea change in his life and approach. Sericulture converted him into a responsible farmer from an idle and unemployed youth. He could contribute towards construction of house from this income. Now sericulture helps him to earn his livelihood.

“Sericulture has helped me to earn my livelihood and has elevated standard of living”.





MEGHALAYA

 22,429 sq. km.
  29,66,889
  74.43%

Introduction

Meghalaya, “The Abode of Clouds” is a land of rolling hills and valleys, abundant rainfall, sunshine and tumbling waterfalls. Meghalaya is one of the most beautiful states in North-east India. Meghalaya is a region of great scenic beauty, a panorama of lush, undulating hills, fertile valleys, 250 species of orchids, meandering rivers, waterfalls and lakes. The state is bounded to the South by Bangladesh and to the North and East by Assam.

The state consists of eleven administrative districts namely, East Khasi Hills, West Khasi Hills, West Jaintia Hills, Ri Bhoi District, West Garo Hills, East Garo Hills, South Garo Hills, East Jaintia Hills, North Garo Hills, South West Garo Hills and South West Khasi Hills. Agriculture is the primary occupation of the rural populace of Meghalaya. Besides, sericulture plays an important role in providing subsidiary income. The art of silkworm rearing and silk weaving has been closely associated with the culture and tradition amongst the women folk of Meghalaya. The climatic condition prevailing in the state is conducive for commercial exploitation of mulberry, eri and muga.

Meghalaya is famous for creating intricate designs on handlooms. It has 8,967 number of handlooms and 13,612 handloom weavers.

Status of silk industry

Among North-eastern states, Meghalaya produces three silk varieties namely mulberry, eri and muga. Sericulture is spread horizontally in 10 districts of the state. Presently,

around 56,462 families from 1845 villages and 127 reelers are involved in various activities. Meghalaya is the second highest producer of silk among North-eastern states.

Silk production trends

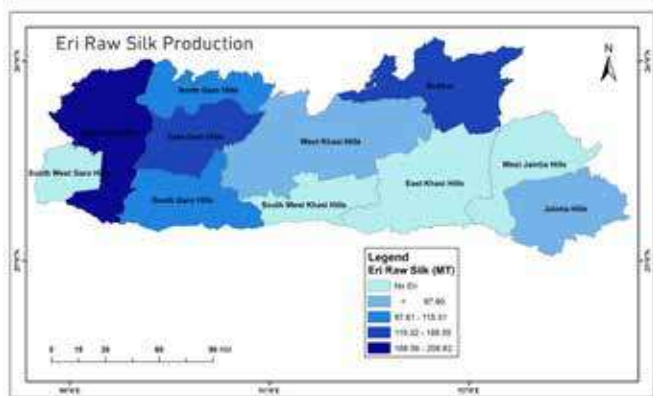
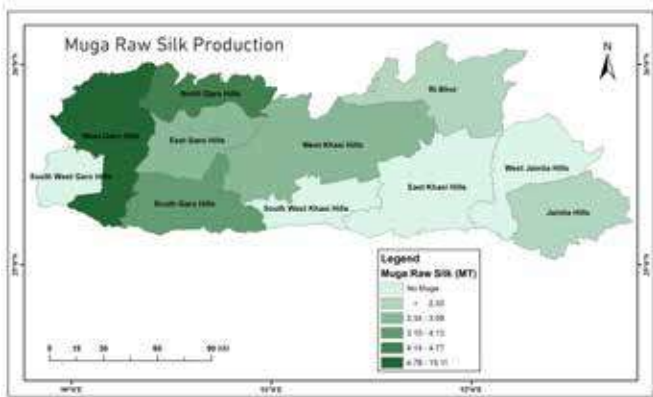
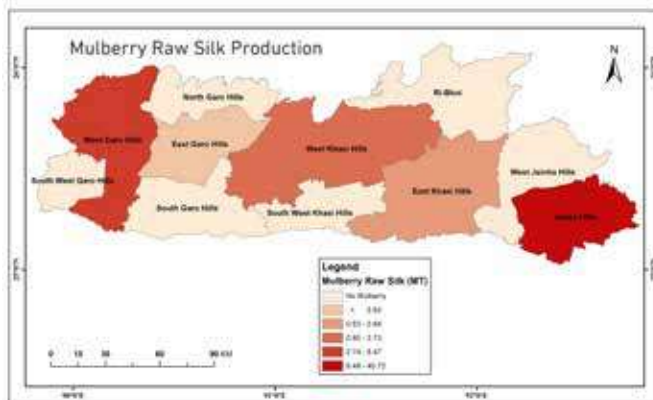
#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	2659	3009	3209	3209
II	Mulberry raw silk (MT)				
	Bivoltine	17	15	28	39
	Cross Breed				
	Mulberry Total (I)	17	15	28	39
III	Vanya silk (MT)				
	Eri	622	824	872	1007
	Muga	16	18	27	30
	Vanya Total (II)	639	842	899	1037
	Grand Total (I+II)	656	857	927	1076

The strength of the state is in eri silk production followed by mulberry and muga. There has been incremental increase in production of silk over the years.

District-wise status of sericulture (2017-18)

#	District	Raw silk production (MT)		
		Mulberry	Eri	Muga
1	East Khasi Hills	1.00	-	7.00
2	West Khasi Hills	5.50	100	3.50
3	West Jaintia Hills	29.50	90	
4	Ri Bhoi	-	130	3.45
5	West Garo Hills	2.00	95	4.00
6	East Garo Hills	0.50	155	1.50
7	South Garo Hills	-	115	7.20
8	North Garo Hills	0.40	100	3.50
9	South West Garo Hills	-	152	-
10	South West Khasi Hills	-	70	-
	TOTAL	39	1007	30





Schemes of Government of India

Government of India is providing continued support to Meghalaya for intensive development of sericulture in all its spheres for maximization of benefits from existing capacity as a part of consolidation effort and for creating new infrastructure at farmers' level, Common Facility Centres for farm mechanization, reeling, spinning and silk weaving activities, besides seed infrastructure. These interventions are expected to transform the state from the present level of silk production to *Silk hub* of India in the coming years by providing self-employment opportunities in the hinterlands and protecting the valuable heritage in an environmental-friendly atmosphere.

Government of India has supported Meghalaya for implementation of Catalytic Development Programme, a centrally sponsored scheme from IX Plan to first 3 years of XII Plan. The CDP envisaged development of host plantation and post-cocoon infrastructure, up-gradation of silk reeling and processing facilities, enterprise development, capacity building, extension and publicity, etc. and the funds released for the purpose by Central Silk Board is as under:

(Rs. in crore)

IX Plan (1997-2002)	X Plan (2002-07)	XI Plan (2007-12)	XII Plan (2012-13 to 2014-15)	Total fund released
0.97	6.20	18.41	23.02	48.60

With a view to restructure centrally sponsored scheme, the Government of India discontinued the CDP during 2015-16, and introduced Silk Samagra (ISDSI).

North East Region Textile Promotion Scheme

Keeping in view the prospects and potentialities for sericulture development in Meghalaya and in the backdrop of CDP implemented from IX Plan to XII Plan, Government of India, under the umbrella scheme "**North East Region Textile Promotion Scheme (NERTPS)**" has given thrust for sericulture development in Meghalaya under Integrated Sericulture Development Project (ISDP) and Intensive Bivoltine Sericulture Development Project (IBSDP). The





Meghalaya

broad objective of the NERTPS under sericulture is to develop and modernize the sericulture sector in the state by providing the required Government support in terms of raw material, seed banks, machinery, Common Facility Centres (CFC), skill development, design & marketing support, etc.

Two sericulture projects have been approved under Integrated Sericulture Development Project (ISDP) and Intensive Bivoltine Sericulture Development Project (IBSDP). The details of the projects are as below:

Particulars	Project cost (Rs. in crore)	Gol share (Rs. in crore)	Project in	Project output	
				Benef. (No.)	Raw silk (MT)
ISDP (mulberry, eri & muga) (2014-18)	30.16	21.91	3 districts & 11 blocks	2,856	162 MT during the project & 77 MT per annum thereafter
IBSDP (mulberry) (2015-18)	29.01	25.77	1 district & 2 blocks	1,044	27 MT during the project & 16 MT per annum thereafter

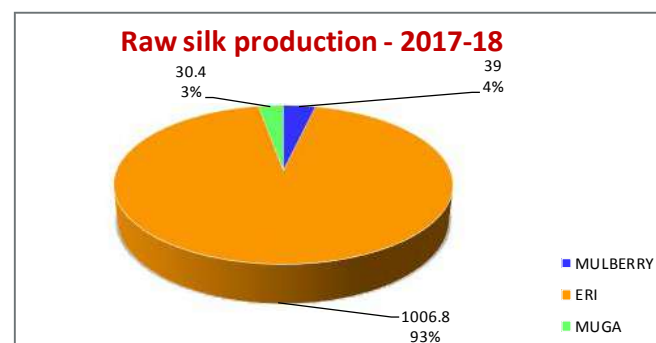
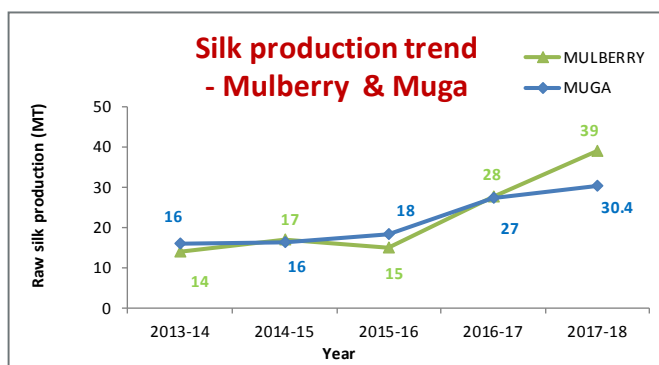
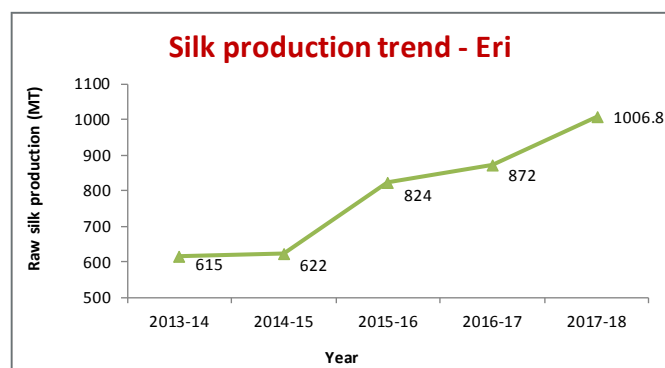
During 2017-18, assistance was provided to Meghalaya under NERTPS, hence no assistance was sought by the state under Silk Samagra.

Convergence Programme

Future development programmes of sericulture in the state could be with convergence of schemes from Ministry of Textiles, Agriculture and Rural Development etc.

Schemes of the state (State Plan)

The state has given matching share for implementation of the schemes/programmes under "NERTPS". In addition to the support from Government of India, Meghalaya has also state-specific plans for maintenance of infrastructure created over various plan periods and for implementation of specific components, which are not covered under any of the central sector and centrally sponsored schemes. The state has 413 manpower for implementation of centrally sponsored schemes, convergence and state specific sericulture programmes. The details of financial assistance provided by the state for maintenance of





infrastructure and related activities under sericulture sector are as under:

(Rs. in crore)			
Year	2015-16	2016-17	2017-18
Amount	1.54	0.20	2.09

The funds from the State Plan programmes were in respect of activities like plantation, silkworm rearing, and infrastructure development at beneficiary and state level, besides maintenance of infrastructure available in the state, created over a period.

Infrastructure under State and CSB

To support development of sericulture in all its spheres, the following infrastructure has been created in the state under State and Central Silk Board over different Plan periods. CSB established 7 units - one muga P4 unit in Tura, four muga P3 units in Mendipathar, Rompara, Adokgiri & Nongpoh, one Silkworm Seed Production Centre (SSPC) in Tura and one Research Extension Centre (REC) in Shillong.

Sector	Infrastructure	Under State
Muga	VGR	03
	Muga P2 farm	02
	Muga reeling unit	02
Eri	Seed grainage	04
	Spinning centre	13
	Silk twisting spindles of handlooms	120
Mulberry	Nucleus farm	01
	Basic farm	05
	Extension centre	13
	Chawki rearing centre	28
Others	Handloom co-operative societies	38

These infrastructures created under State and CSB are supporting sericulture development at various stages of silk production value chain.

Post-cocoon Sector

The following infrastructure at state level and beneficiary level are available to support value addition of cocoons produced within the state.

Infrastructure	No.
Multi-end reeling units	3
Twisting units	1

Marketing

There is no organized marketing system in the state of Meghalaya. However, the state government facilitates the farmers to market the cocoons produced by them at identified locations in the state and invite reelers and other consumers to participate in open auctions. This marketing system is not on a daily basis due to the reason that the sericulture activity in Meghalaya is seasonal.

Way forward

- There is much attention required for value addition to the cocoons produced within NE
- To establish a separate department for sericulture
- Development of sericulture in the aspirational district *i.e.*, Ri-bhoi
- Wild sanctuary for muga has been taken up to protect the species





Meghalaya

Success story



Smt. Philina Lyngdoh

W/o. Shri Marten Thangkhiew
Village: Wahsynon New Jirang
District: Ribhoi
Meghalaya – 793 107
Mobile: 7308121612

Smt. Philina Lyngdoh (38 years) has been practicing eri culture since her childhood. Today, she has 2 acres land under eri food plant and half acre under eri nursery (kesseru, castor & tapioca). She has received assistance for augmentation of eri food plants, rearing house and kisan nursery. Annually, she is supplying 22600 saplings @ Rs.3-6 to other farmers, harvesting and selling more than 30 kg of cocoon shells and earning a net income of Rs.1.5 lakh.

“I used to support my parents and that is how I picked up eri rearing technique. After marriage, I took it up as a commercial activity, as it gave me good financial support. Through the income from this activity and eri saplings, I am able to meet the requirements of my children education and other social needs.”





MIZORAM

 21,081 sq. km.
  10,97,206
  91.33%

Introduction

Mizoram means «Land of the Mizos» (Mizo means name of native inhabitants and Ram means land). It is the southernmost landlocked state, sharing borders with three of the Seven Sister States, namely Tripura, Assam and Manipur. The state also shares a 722 kilometre border with the neighbouring countries of Bangladesh and Myanmar and blanketed with breath-taking valleys, green forests, unique cultures and beautiful tribes. The state is a serene heaven in North-East India, which is still far away from the glitz and glamour of the modern world. Mizoram's cultural splendour and simple living can be seen in various festivals celebrated here. This offbeat destination in India takes you to many charismatic places some of which include Aizawl, Lunglei, Thenzawl, Champhai, Palak Dil, Hmuifang Tlang, etc. The state has 8 administrative districts viz., Aizawl, Lunglei, Siaha, Champhai, Kolasib, Serchhip, Lawngtlai and Mamit. The state is famous for creating intricate designs on handlooms in the country with 24,136 number of handlooms and 43,528 handloom weavers.

Status of silk industry

Mizoram is a home for all sericigenous insects (mulberry, eri, muga and oak tasar) with different host plants that are grown naturally and has been blessed with congenial climatic condition, ample land and inherited skills in the tribal people. All the 8 districts in Mizoram are practising sericulture.

Presently, 5,475 hectares of land is covered under silkworm food plantation in the state involving around

5,054 farmers in 175 villages. Mizoram ranks second among North-eastern states in mulberry silk production after Manipur. The state has conducive climate for commercial exploitation of all varieties of silk.

Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	3700	3843	4009	4094
II	Mulberry silk (MT)				
	Bivoltine	32	46	47	61
	Cross Breed	8	9	18	14
	Mulberry Total (I)	40	55	65	75
III	Vanya silk (MT)				
	Oak-Tasar	0.02	0.005	0.02	0.05
	Eri	10	9	11	8
	Muga	0.1	0.12	0.26	0.76
	Vanya Total (II)	10	9	11	9
	Grand Total (I+II)	50	64	76	84

The strength of the state is in mulberry silk production followed by eri, muga and oak tasar. There has been incremental increase in the production of all varieties of silk.

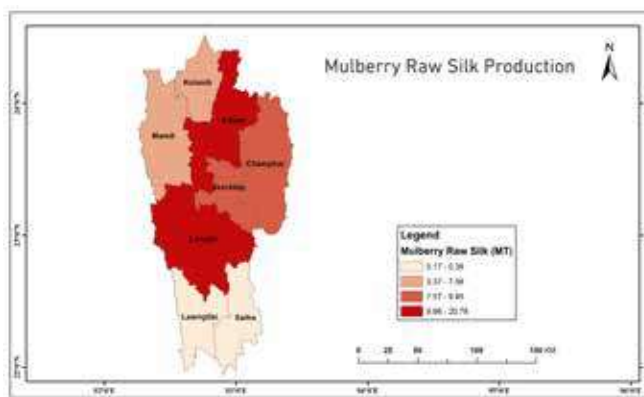
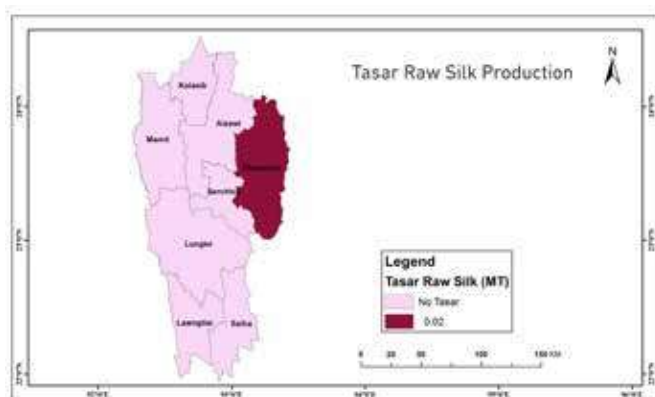
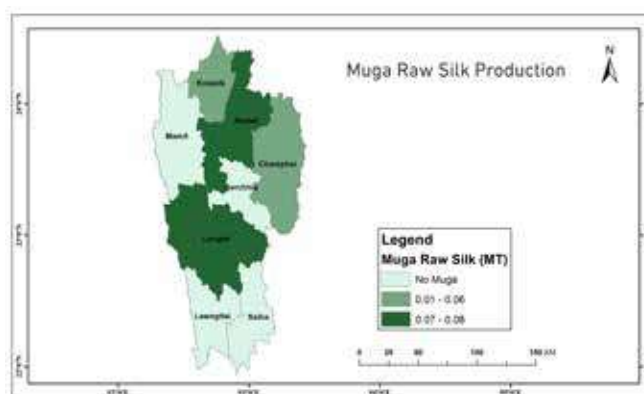
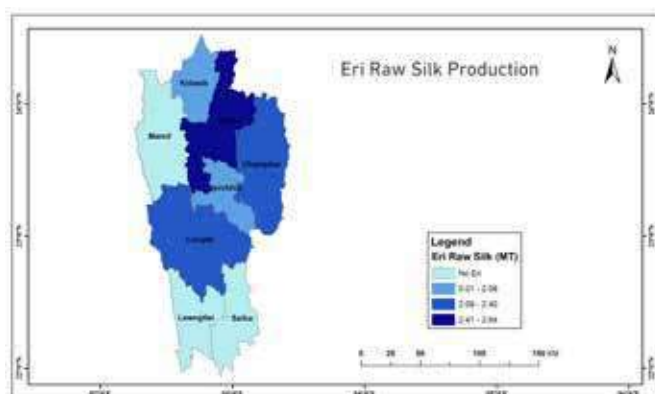
District-wise status of sericulture (2017-18)

#	District	Raw silk production (MT)			
		Mulberry	Oak tasar	Muga	Eri
1	Aizawl	26.00	-	0.32	0.73
2	Lunglei	12.55	-	0.05	1.63
3	Siaha	1.50	-	-	-
4	Champhai	11.15	0.052	-	0.63
5	Kolasib	3.00	-	0.18	2.26
6	Serchhip	8.15	-	0.07	0.70
7	Lawngtlai	2.25	-	-	0.39
8	Mamit	10.40	-	0.18	1.66
	TOTAL	75.00	0.052	0.80	8.0





Mizoram



Schemes of Government of India

Government of India is providing continued support to Mizoram for intensive development of sericulture in all its spheres for maximization of benefits from existing capacity as a part of consolidation effort and for creating new infrastructure at farmers' level, Common Facility Centres for farm mechanization, reeling, spinning and silk weaving activities, besides seed infrastructure.

These interventions are expected to transform the state from the present level of silk production to *Silk hub* of India in coming years by providing self-employment opportunities in the hinterlands and protecting the heritage in an eco-friendly atmosphere.

Government of India has supported Mizoram for implementation of Catalytic Development Programme

(CDP), a centrally sponsored scheme from IX Plan to first 3 years of XII Plan. The CDP envisaged development of host plantation and post-cocoon infrastructure, up-gradation of silk reeling and processing facilities, enterprise development, capacity building, extension and publicity etc., and funds released by Central Silk Board to Mizoram for the purpose are as under:

(Rs. in crore)				
IX Plan (1997-2002)	X Plan (2002-07)	XI Plan (2007-12)	XII Plan (2012-13 to 2014-15)	Total funds released
1.36	8.84	23.26	21.77	55.23

With a view to restructure centrally sponsored scheme, the Government of India discontinued the CDP during 2015-16, and introduced Silk Samagra (ISDSI).





North East Region Textile Promotion Scheme

Keeping in view the prospects and potentialities for sericulture development in Mizoram and in the backdrop of CDP implemented from IX Plan to XII Plan, Government of India, under the umbrella scheme "North East Region Textile Promotion Scheme (NERTPS)" has given thrust for sericulture development in Mizoram under Integrated Sericulture Development Project (ISDP) and Intensive

Bivoltine Sericulture Development Programme (IBSDP). The broad objective of the NERTPS under sericulture is to develop and modernize the sericulture sector in the state by providing required government support in terms of raw material, seed banks, machinery, Common Facility Centres (CFC), skill development, design & marketing support, etc. Three sericulture projects under ISDP and IBSDP are under implementation. The details of the projects are as below:

Particulars	Project cost (Rs.in crore)	Gol share (Rs. in crore)	Project in	Project Output	
				Benef. (No.)	Raw silk (MT)
ISDP (mulberry) (2014-18)	32.49	24.49	1 district & 2 blocks	1,683	117 MT during the project & 49 MT per annum thereafter
IMSDP (muga) (2015-18)	13.52	12.83	1 district & 2 blocks	833	7.34 MT during the project & 4.26 MT per annum thereafter
IBSDP (mulberry) (2015-18)	30.15	26.88	1 district & 2 Blocks	1,169	26 MT during the project & 15.60 MT per annum thereafter

During 2017-18, assistance was provided to Mizoram under NERTPS, and hence, assistance was not sought under Silk Samagra.

Convergence programme

Future development programmes of sericulture in the state could be with convergence of schemes from Ministry of Textiles, Agriculture and Rural Development etc. The table below gives details of assistance availed by the state under convergence:

Year	(Rs. in crore)			
	RKVY	MGNREGS	Others	Total
2014-15	11.92	-	-	11.92
2015-16	2.25	-	-	2.25
2016-17	2.18	-	0.95*	3.13
2017-18	0.83	-	-	0.83

*Eri development under Ministry of Tribal Affairs.

State plan schemes

State has created a separate department for development of sericulture, which looks after all issues relating to sericulture. Besides, the state has given matching share for implementation of the schemes/programmes under "NERTPS". In addition to the support from Government of India, state has also state-specific plans for maintenance of infrastructure created over various plan periods and for implementation of specific components, which are not covered under any of the central sector and centrally sponsored schemes. The state has 283 manpower for implementation of centrally sponsored schemes, convergence and state specific sericulture programmes. The details of financial assistance provided by the state for maintenance of infrastructure and related activities under sericulture sector is as under:

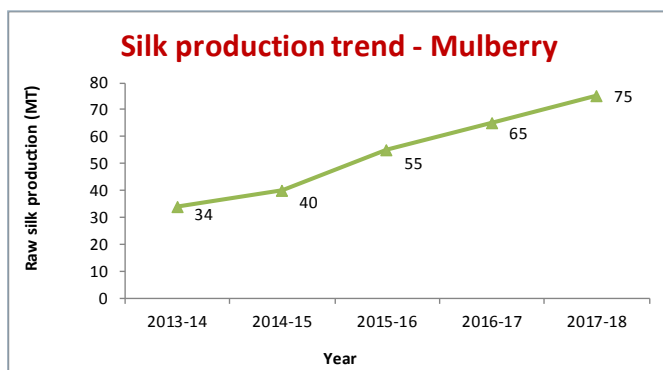
Year	(Rs. in crore)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Amount	13.48	16.19	16.82	18.97	19.34

Note: Figures includes Plan & Non-Plan.





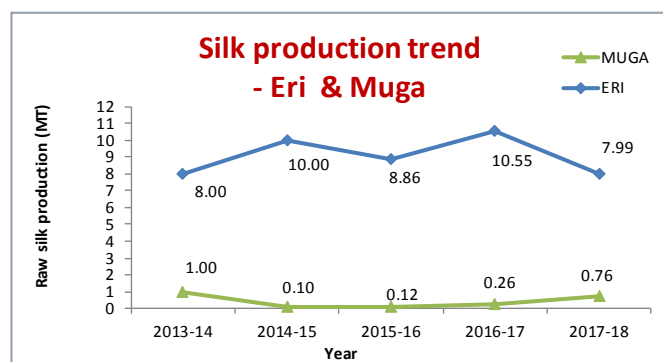
Mizoram



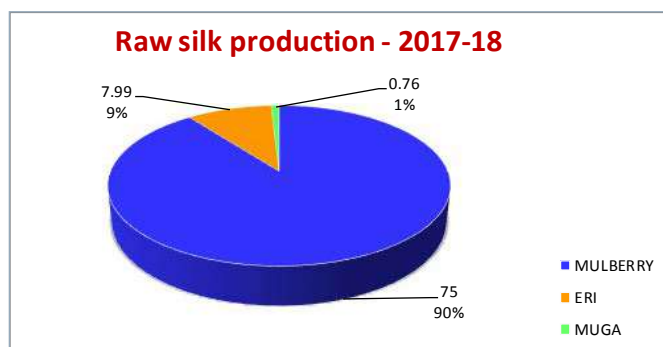
The funds from the State Plan programmes were in respect of activities like plantation, silkworm rearing, infrastructure development at beneficiary and state level, besides, maintenance of infrastructure available in the state created over a period.

Infrastructure under State and CSB

To support development of sericulture in all its spheres, the following infrastructure has been created in the state under State and Central Silk Board over different Plan periods. Also, CSB has established one Research Extension Centre at Aizawl.



Sectors	Infrastructure	Under State
Muga	Muga P2 seed farm	1
	Commercial seed farm	1
	Grainage	2
	Extension centre	2
Eri	Basic seed farm	2
	Commercial seed farm	2
	Grainage	2
	Extension centre	1
	Ambar Charkha unit	1
Mulberry	P2 seed farm (Rangvamual, Aizawl)	1
	Seed multiplication farm	10
	Grainage	2
	Extension centre	8
	Chawki rearing centre	8
	Technical service centre	1
	Multi-end reeling (22 basins)	1
Silk twisting spindles-unit (240 spindles)	1	
Oak Tasar	Basic seed farm	1
	Commercial seed farm	1
	Grainage	1
	Extension centre	1
Others	Silk handlooms (Private)	20
	Handloom co-operative societies	1
	Silk exchange (yarn bank)	1
	Emporium	1





These infrastructures created under State and CSB are supporting sericulture development in the state at various stages of silk production value chain.

Post-cocoon sector

The following infrastructure at state level and beneficiary level are available to support value addition of cocoons produced within the state.

Infrastructure	No.
Multi-end reeling units	1
Twisting units	1
Vanya reeling/spinning units	5

Marketing

There is no organised marketing system in the state of Mizoram. However, the State Government facilitates the farmers to market the cocoons produced by them at identified locations in the state and invite reelers and other consumers to participate in open auction. This marketing system is not on a daily basis due to the reason that the sericulture activity in Mizoram is seasonal.

Way forward

- There is much attention required for value addition to the cocoons produced within NE
- Keeping in view, the potential for, Government of India has sanctioned a new project under NERTPS in the aspirational district of Mamit.

Success story



Smt. Lalbiakzami

W/o. Shri Hmingliana
P.O.: Saitual Aizawl
Mizoram - 726 261
Mobile: 8575462295

Smt. Lalbiakzami (52 years) has been involved in mulberry cocoon production activity since 2010. Her family occupation changed from Jhum cultivation to sericulture. Initially, she had 1.5 acre mulberry plantation of S-1635 variety, and later with attractive returns flowing in, she decided to increase the plantation area to 2.5 acre to boost the returns. On an average, she could successfully harvest 314 kg cocoons and generate net income of Rs.69,000 annually.

“After attending a training programme under BEP (CDP), I felt confident to start sericulture in 2010; and today, I appreciate my decision. Our lifestyle has improved; I could renovate our existing dwelling house, purchase household goods and additional rearing equipment to support my activity out of income from sericulture.”





NAGALAND

 16,579sq. km.
  19,78,502
  79.55%

Introduction

Nagaland is a mountainous state located in the extreme North-eastern end of India, bordering the Assam to the West, Arunachal Pradesh and Assam to the North, Myanmar to the East and Manipur to the South. The state consists of 11 administrative districts namely Kohima, Dimapur, Peren, Mokokchung, Wokha, Zunheboto, Tuensang, Mon, Longleng, Kiphire and Phek. Rich in terms of diversity, culture and traditions inhabited by 16 major tribes along with other sub-tribes with distinctive languages adds heritage.

Nagaland is blessed with salubrious climate throughout the year, which is a blend of tropical and temperate conditions suitable for sericulture. Almost all the tribes in different districts practice sericulture as a source of livelihood based on potential and prospects. The state is famous for creating beautiful and intricate designs in handlooms in the country with 47,688 number of handlooms and has 66,490 handloom weavers.

Status of silk industry

Nagaland is traditionally practicing all the four varieties of silk. Mulberry is practiced in the districts of Dimapur, Kohima, Paren, Mokokchung, in lower area bordering Assam and also in the high altitudes of Wokha and Zunheboto. Oak tasar is concentrated mainly, in the forest areas in Phek and Tuensang. Muga is practiced in Mokokchung, Tuensang and Wokha, whereas, eri culture is predominantly practiced all over Nagaland.

Presently, about 7,672 hectares of land is covered under silkworm food plantation in the state under mulberry, eri, muga and oak tasar, involving around 18,017 farmers

from 754 villages. Nagaland holds third position in NE for silk production after Assam and Meghalaya.

Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	633	743	290	290
II	Mulberry raw silk (MT)				
	Bivoltine	6	4	7	11
	Cross Breed		3	1.37	1
	Mulberry Total (I)	6	7	8	12
III	Vanya silk (MT)				
	Oak-Tasar	0.1	0.07	0.08	0.002
	Eri	610	622	669	602
	Muga	3	2	1	1
	Vanya Total (II)	613	624	670	603
	Grand Total (I+II)	619	631	678	615

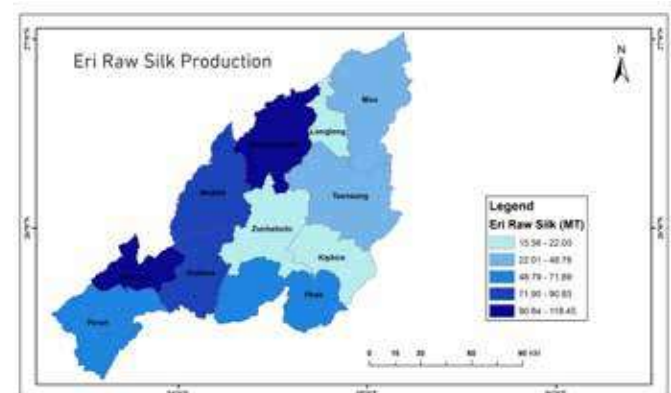
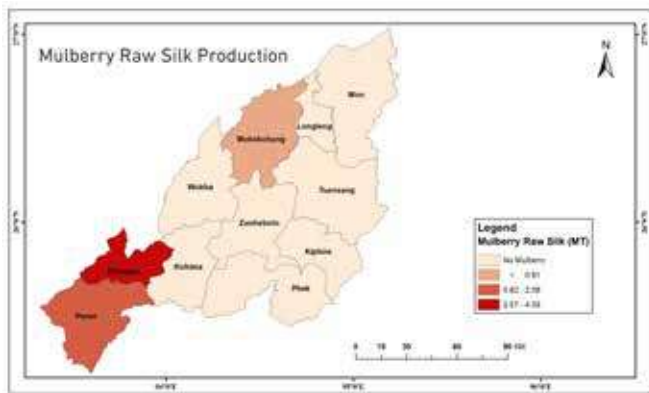
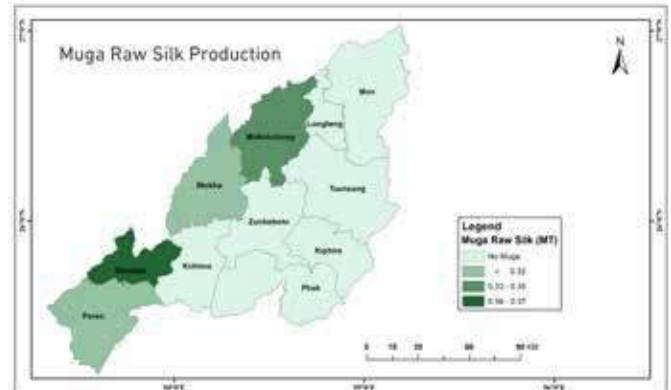
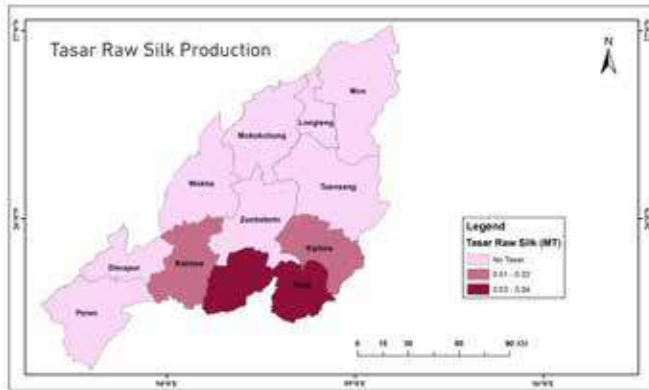
The strength of the state is in eri silk production followed by mulberry, oak tasar and muga. There has been an incremental increase in production of all varieties of silk.

District -wise status of sericulture (2017-18)

#	District	Raw silk production (MT)		
		Mulberry	Eri	Muga
1	Dimapur	8.60	114.57	0.35
2	Peren	2.80	44.62	0.13
3	Mokokchung	0.75	156.08	0.22
4	Wokha	-	58.29	0.30
5	Kohima	-	73.10	-
6	Phek	-	24.00	-
7	Tuensang	-	46.61	-
8	Kiphire	-	24.12	-
9	Mon	-	23.5	-
10	Longleng	-	21.11	-
11	Zunheboto	-	16.28	-
Total		12.15	602.28	1.00

All the 11 districts in Nagaland are practicing sericulture, either mulberry, eri, oak tasar or muga and in certain districts more than one variety.





Schemes of Government of India

Government of India is providing continuous support to Nagaland for intensive development of sericulture in all its spheres for maximization of benefits from existing capacity as a part of consolidation efforts and for creating new infrastructure at farmers' level, common facility centres for farm mechanization, reeling, spinning and silk weaving activities, besides, seed infrastructure for state government. These interventions are expected to transform the state from the present level of silk production to *Silk hub of India* in coming years by providing self employment opportunities in the hinterland and protect the heritage with ultimate aim of "Make in India" in an eco-friendly atmosphere.

The Government of India had supported Nagaland for implementation of Catalytic Development Programme

(CDP), a centrally sponsored scheme from IX Plan to first 3 years of XII Plan. The CDP envisaged in development of host plantation and post-cocoon infrastructure, up-gradation of silk reeling and processing facilities, enterprise development, capacity building and publicity etc. Funds released by Central Silk Board to Nagaland for implementation of CDP from IX Plan till first 3 years of XII plan are as below:

(Rs. in crore)

IX Plan (1997-2002)	X Plan (2002-07)	XI Plan (2007-12)	XII Plan (2012-13 to 14-15)	Total funds released
0.59	4.21	19.53	24.41	48.74

With a view to restructure, centrally sponsored scheme, the Government of India discontinued the CDP during 2015-16, and introduced Silk Samagra (ISDSI).





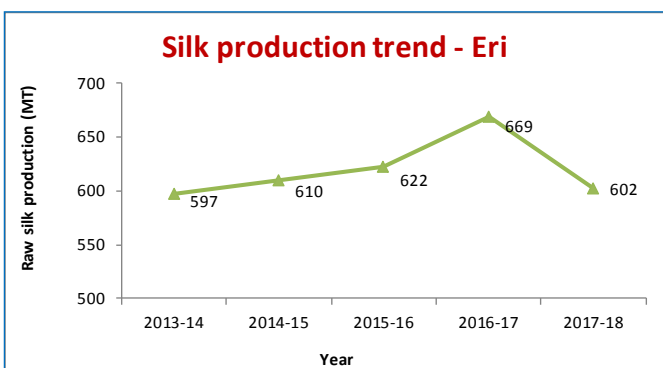
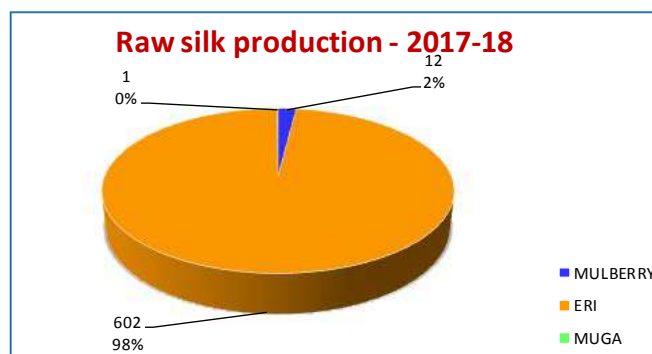
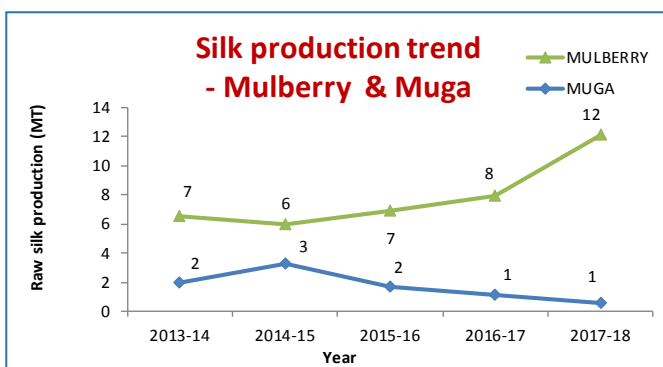
Nagaland

North East Region Textile Promotion Scheme (NERTPS)

Keeping in view the prospects and potentials for sericulture development in Nagaland and in the backdrop of CDP, Government of India, under the umbrella scheme "North East Region Textile Promotion Scheme" has given focus for sericulture development in Nagaland under Integrated Sericulture Development Project (ISDP) and Intensive

Bivoltine Sericulture Development Project (IBSDP). The broad objective of the NERTPS under sericulture is to develop and modernize the sericulture sector in the state by providing the required government support in terms of raw material, seed banks, machinery, common facility centres, skill development, design & marketing support, etc. Four sericulture projects of ISDP and IBSDP are under implementation. The details of the projects are as below:

Particulars	Project cost (Rs. in cr.)	Govt share (Rs. in cr.)	Project in	Project output	
				Benf. (Nos.)	Raw silk (MT)
ISDP (mulberry, eri & muga) (2014-18)	31.47	22.66	4 districts & 9 blocks	2,678	166 MT during the project & 69 MT per annum thereafter
IESDP (eri) (2015-18)	13.66	12.83	1 district & 2 blocks	1,053	72 MT during the project & 24 MT per annum thereafter
Post-cocoon technology (2016-19)	8.57	8.48	1 district & 2 blocks	400	Post-cocoon & post-yarn activities.
IBSDP (mulberry) (2015-18)	29.43	26.16	1 district & 2 blocks	1,144	27 MT during the project & 16 MT per annum thereafter



Silk Samagra

Silk Samagra is a comprehensive central sector scheme of Central Silk Board under implementation from 2017-18 to 2019-20, for overall development of sericulture industry in the country, implemented directly as well as through state governments. The programme catalyzes the efforts of state governments to improve the quality, productivity and production of raw silk besides, generating employment opportunities particularly, in the rural areas. An amount of Rs.0.63 crore has been released to the state for spinning machines for the year 2018-19.





Convergence programme

Future development programmes of sericulture in the state could be with convergence of schemes from Ministry of Textiles, Agriculture and Rural Development etc. The table below gives details of assistance availed by the state under convergence:

(Rs. in crore)

Year	RKVY	MGNREGS	Others	Total
2016-17	0.56	-	-	0.56
2017-18	2.14	-	2.50	4.64

State plan schemes

State has created a separate department for development of sericulture which looks after all issues relating to sericulture. Besides, the state has given matching share for implementation of the schemes/programmes under "NERTPS" as well as "Silk Samagra". In addition to the support from Government of India, state has also state-specific plans for maintenance of infrastructure created over various plan periods and for implementation of specific components, which are not covered under any of the central sector and centrally sponsored schemes. The state has 267 manpower for implementation of centrally sponsored schemes, convergence and state specific sericulture programmes. The details of financial assistance provided by the state for maintenance of infrastructure and related activities under sericulture sector are as under:

(Rs. in crore)

Year	2014-15	2015-16	2016-17	2017-18	2018-19
Amount	13.23	16.83	17.45	21.94	21.08

Note: Data include Plan & Non-Plan.

The funds from the State Plan were in respect of activities like plantation, silkworm rearing, and infrastructure development at beneficiary and state level, besides, maintenance of infrastructure available in the state created over a period of time.

Infrastructure under State and CSB for sericulture development

To support development of sericulture in all its spheres at various stages of silk production value chain, following infrastructure have been created under State and Central Silk Board over different Plan periods. Also, Central Silk Board has established two units - Muga P3 unit at Kobulong and Mulberry Research Extension Centre at Dimapur. The details are as follows:

Sector	Infrastructure	State
Muga	Muga farm	2
	Farm-cum-grainage	2
Eri	Seed grainage	1
	P2-farm	1
	Eri farm	10
	Spinning units (5 Ambar charkha in each unit)	2
Mulberry	CRC/ Farm	7
	Reeling unit	1
	Multi-end reeling unit (10 basin)	1
	Cottage basin (5 basin)	1
	Twisting unit (120 spindle)	1
Oak	Oak-tasar farm	4
	Reeling unit (5 basin)	1
Tasar	Seed cocoons preservation unit (2 lakh capacity)	1

Post-cocoon sector

The following infrastructure at state and beneficiary level are available to support value addition of cocoons produced within the state:

Infrastructure	No.
Multi-end reeling units	1
Cottage basin reeling units	1
Twisting units	2
Vanya reeling/spinning units	15

Marketing

There is no organized marketing system in the state of Nagaland. However, the state government facilitates the farmers to market the cocoons produced by them at identified locations in the state and invite reelers and other





Nagaland

consumers to participate in open auctions. This marketing system is not on a daily basis since the sericulture activity in Nagaland is seasonal.

Way forward

- There is much attention required for value addition to the cocoons produced within NE.
- Keeping in view, the potential for eri and oak tasar production, Government of India has sanctioned a new project under NERTPS in the aspirational district of Kiphire.

It is also expected that the Nagaland being an important state in the sericulture map of India contributing quality bivoltine silk production apart from eri and muga. Bivoltine sericulture development project through women empowerment in Wokha district is approved by Ministry and is being implemented to cover 400 acres of plantation to cover 436 beneficiaries to meet national priorities through production of import substitute quality Bivoltine silk.

Success story



Shri Kevilelie Medom

S/o. Late Neilhouse
Village: Chedema
District: Kohima
Nagaland - 797 003
Mobile: 8256985371

Shri Kevilelie Medom (39 years) is involved in production of eri silkworm seed since 2009. Earlier, he practiced agriculture through Jhum and terrace cultivation. He started as an eri rearer and later took up silkworm seed production after getting training at ESSPC, Azara. Now, he is producing 4000-5000 dfls per operation and performs 6-7 grainage operations per year. He earned Rs.42,000 as net income from the grainage activity during the year 2013-14 and has established himself as a rural entrepreneur.

“In last 4 years with regular income from this activity, I have been able to construct a house besides supporting my family to have a decent livelihood. I am happy to be a source of inspiration for other educated unemployed youth of the area.”





ODISHA

 1,55,707 sq. km.
  4,19,74,218
  72.87%

Introduction

Mainly, tasar and mulberry sericulture is practised in Odisha state. Tasar silk is the traditional one and contribute major share of Odisha's silk production. Odisha is predominantly a traditional tasar producing state. Tasar culture is one of the main occupation in the tribal pockets of Deogarh, Kalahandi, Keonjhar, Koraput, Rayagada, Mayurbhanj, Sonpur, Dhenkanal, Anugul, Nabarangpur, Keonjhar Sundargarh & Boudh districts.

Khandua /Sambalpuri



Khandua is a traditional "bandha" or ikat saree produced from Odisha worn by women during wedding. Nuapatna is famous for Khandua (silk & cotton) sarees and Ikat sarees manufactured using tie and dye process which is similar to that of Pochampalli in Andhra Pradesh.

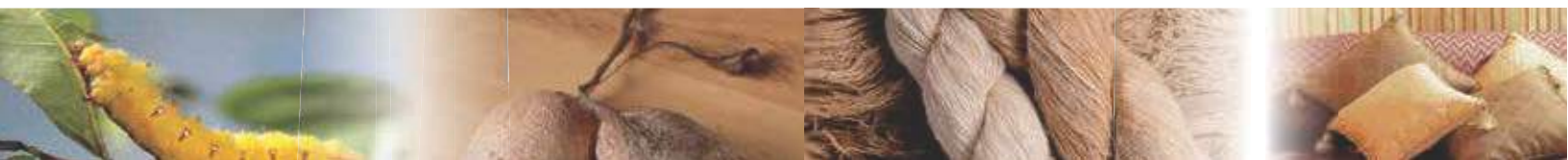
Mulberry sericulture is quite non-traditional to the state. 9 districts have been identified for mulberry sericulture. Among them Koraput, Rayagada, Gajapati, Keonjhar and Phulbani are the important districts. The state has already adopted the most developed bivoltine hybrid *i.e.*, CSR hybrids. Sericulturists in the state mostly take up bivoltine silkworm rearing with CSR hybrids in two favourable seasons and multi-bivoltine (crossbreeds) in other two seasons. The state also plays a major role in generation of seed cocoons for West Bengal state for silkworm seed production in grainages.

Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	463	584	686	464
II	Mulberry raw silk (MT)				
	Bivoltine	2	3	3	2
	Crossbreed	1		0.11	1
	Total (I)	3	3	3	3
III	Vanya				
	Tasar	88	107	116	106
	Eri	7	7	6	7
	Total (II)	95	114	122	113
	Grand Total (I+II)	98	117	125	116

District-wise silk production during 2017-18

#	District	Raw Silk Production (MT)			Total
		Mulberry	Eri	Tasar	
1	Mayurbhanj	-	-	37.5	37.5
2	Bhubaneswar	0.1	2	-	2.1
3	Chandragiri	1.1	-	-	1.1
4	Deogarh	0.2	0.5	4.5	5.2
5	Dhenkanal	-	0.5	10.5	11
6	Kalahandi	0.05	0.5	2	2.55
7	Keonjhar	0.3	0.5	35.5	36.3
8	Koraput	0.3	0.5	-	0.8
9	Phulbani	0.95	1	1.5	3.45
10	Sundergarh	-	1.5	14.5	16
	TOTAL	3	7	106	116





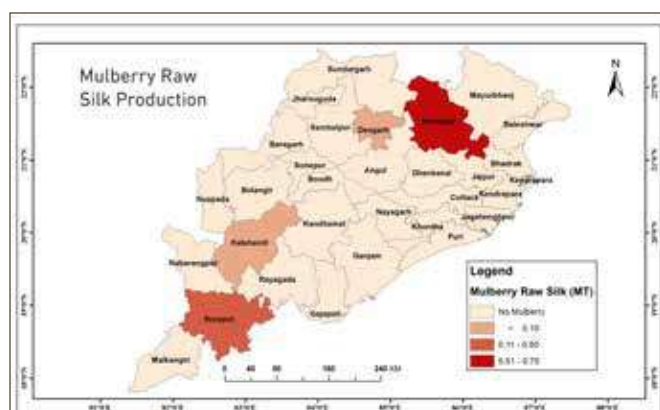
Odisha



Financial Support to sericulture promotion

(Rs. in Lakh)

Year	Central Silk Board share	State share	Beneficiary share	Total
2013-14	537.17	99.8625	99.8625	736.895
2014-15	273.49	68.3725	68.3725	410.235
2015-16	1275.43	165.671	58.545	1499.646
2016-17	9.92	1.364	1.364	12.648
2017-18	115.67	11.567	1.1567	128.3937

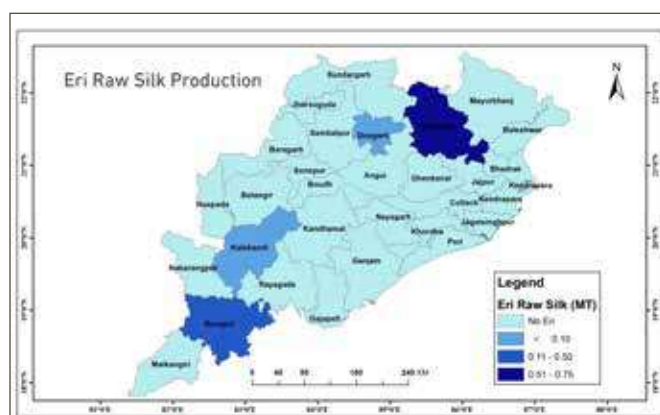


Schemes of Government of India

Highlights of Central Silk Board intervention in the state:

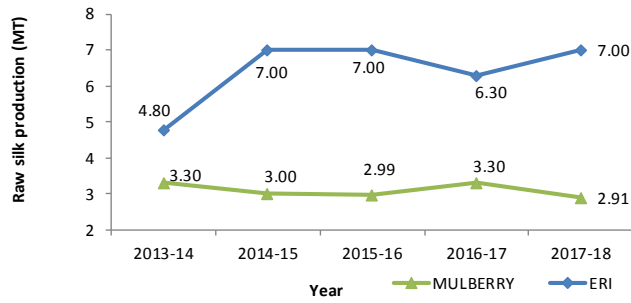
Mulberry sector

- Improved mulberry variety (S1635, S1) and improved silkworm breeds (CSR2xCSR4, SK6xSK7) developed by the research institutes of Central Silk Board have improved the productivity and quality of silk.
- Mulberry seed zones developed in Gajapati and Koraput districts to supply seed cocoons to West Bengal for remunerative price (Rs.500-550/Kg) to the farmers. Entire seed cocoons lifted by Central Silk Board were used for seed preparation.
- 1622 farmers were supported by supplying rearing equipment & 1756 farmers for rearing houses under Catalytic Development Program (CDP).
- 2 mulberry clusters were organized at Ghatogan in Keonjhar district & Kashipur in Rayagada district under Transfer of Technology (ToT) for improvement of productivity and two Scientists were assigned to monitor the programme.
- Technical support was extended to Sonpur mulberry hub, Sonpur for improvement in productivity. The average yield has reached to 36 kg/100 dfls during 2013-14 from 23 kg/100 dfls during 2012-13 and targeted to increase dfls consumption to 400 dfls/ farmers with average yield to 45 kg during 2014-15.

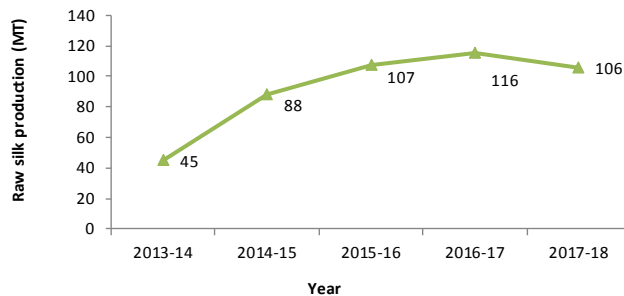




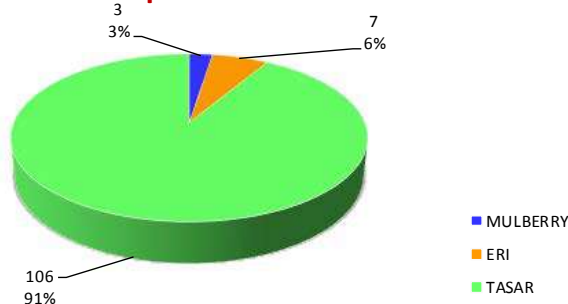
Silk production trend - Mulberry & Eri



Silk production trend - Tasar



Raw silk production - 2017-18



- As per request of Director of Textiles, Odisha, directed Regional Sericultural Research Station, Koraput, Sericulture Development Centre, Ramagiri & Research Extension Centre, Deogarh for extending technical support and crop monitoring at farmers level in co-ordination with the Assistant Director's of Koraput, Phulbani, Gajapati, Keonjhar, Sonpur Districts for crop improvement.

Tasar sector

- Technical support was extended in monitoring tasar seed multiplication through PPCS & Private Graineurs.
- 4 seed multiplication units (PPCS) were adopted for quality seed production.
- 564 private tasar graineur supported for construction of grainage houses and procurement of equipments.
- 725 seed rearers supported for procurement of equipments.
- 1259 ha of tasar host plantation is developed.
- 300 tasar cocoon storage houses are established.
- 4 tasar clusters and one IVLP cluster are organized for Transfer of Technology and improvement of productivity.
- 15,000 sericulture farmers / reelers are covered under women health insurance scheme.
- Seed testing van with equipment for disease monitoring

Details of basic tasar seed supply

Particulars	Variety	2016-17	2017-18	2018-19
Indent received	BV	370000	400000	133710
	TV	20000	30000	125000
	Total	390000	430000	258710
Dfls supplied	BV	366741	341775	180040
	TV	123491	83645	123555
	Total	490232	425420	303595
Remarks	% of supply	125.7	98.93	117

Silk Samagra

Joint Projects in Pipelines- TSRDS projects under social corporate responsibilities

Tata Steel Rural Development Society (TSRDS) under Corporate Social responsibility have undertaken many welfare schemes in and around Bramhanipal areas for upliftment of rural tribal's by restraining migration of labour.



Odisha

TSRDS has also taken some initiation for production of tasar seed, training to the farmers and keen on development of mulberry and tasar sericulture under CSR programmes. TSRDS has also agreed to fund the whole project (including beneficiary share) and interested to implement jointly with Central Silk Board and State Department. While, TSRDS will be funding the project, Central Silk Board will play a major role in technology dissemination and in implementation of the project and the state will provide available infrastructure, market and extension support for successful implementation of the project. The total outlay of the project is Rs.3,604.01 lakh. Of which, Rs.2,490.79 lakh and Rs.1,112.72 lakh would be for mulberry and tasar sectors, respectively.

State plan schemes

Tasar sericulture project

- Tasar Silk Park at Bhagamunda: Under state plan- Total project cost Rs.4.07 crore under implementation.
- Weaving cum stitching unit: Under state plan-Total project cost- Rs.3.80 crores.

- Permanent central nursery: Approved under District Mineral Funds (DMF) - Rs.4 crores.
- Now host plantation: 600 ha under DMF- Total cost- Rs. 3.80 crores.
- Common facility centre at Bhagamunda: Under OMBADC- Rs. 10 crores.
- Spun silk mill (By-product utilization) - Rs.16 crores.

Convergence programmes

(Rs. in crores)

Year	RKVY	MGNREGSA	Others
2013-14	0	4.88	0.36
2014-15	6.03	6.45	0
2015-16	8.35	16.42	2.57
2016-17	4.43	9.15	0
2017-18	4.06	17.55	0
2018-19	1.75**	13.03*	

*upto November 2018 (against allocation of Rs. 30.93),
** under implementation.

Infrastructure for sericulture development

Central Silk Board infrastructure

Name of units	No.	Location	Support extended to state
Regional Office	1	Bhubaneswar	Close liaison of effective co-ordination with the state Government in implementation of sericulture development programs of the projects.
Regional Sericultural Research Station	1	Koraput	Fine tuning of the research findings, Demonstration and farmers training.
Research Extension Centre	1	Dhenkikote	Transfer of Technology & Demonstration.
Cluster Promotion Program	2	Ghatogaon & Kishipur	Transfer of Technology on bivoltine silk under CSRTI, Berhampore (West Bengal).
Divisional Cluster Technical Service Centre	1	Cuttack	Major training / quality testing service common facility service / liaison.
Cluster Sericulture Development	1	Ramagiri	Closed.
Non-Mulberry			
RTRS	1	Baripada	To work on Modal eco-race.
BSMTC	4	Baripada, Sundergarh, Nowrangpur & Kendujhara	Production and supply of basic tasar silkworm seed.
REC	1	Bangriposi	Closed.
Field Unit	1	Pallahara	

REC = Research Extension Centre, **BSM&TC** = Basic Seed Multiplication & Training Centre.





State level infrastructure

Under tasar sector (Nos.)

a) Pilot project centre	15
b) Tasar seed multiplication centres	85
c) Tasar Rearers Coop society (TRCS)	62
d) State tasar research farm	01
e) Reeling units	14
f) Training centre	13
g) Ushnokothis	12
h) Reeling & spinning devices	5000

Under mulberry sector (Nos.)

a) Mulberry Demonstration Farms (MDFs)	13
b) Mulberry Rearers Coop. Society (MRCS)	39
c) Mulberry Extension Service Centre (MESC)	33
d) Mulberry grainage unit	02
e) Reeling units	04
f) Dyeing units	02
g) CATD	3
h) CRC	27
i) Cocoon markets (with marketing facility at MRCS)	25
j) CFC	25

Under eri sector (Nos.)

a) Eri Seed Stations (ESSs)	02
b) Eri centre	11
c) Eri Rearers Coop. Society (ERCS)	01
d) Eri farm-cum-grainage unit	19
e) Takli/ eri spinning devices	300

Marketing

Apex society *i.e.*, State Tasar & Silk Co-operative Society is located at Bhubaneswar with different out lets at Keonjhar, Baripada, Koraput, Fakirpur and Nuapatna. Cocoons produced by the beneficiaries are sold to primary society at the rate fixed by apex society. Apex society (SERIFED) is responsible for marketing of cocoons and yarn of the producers to the consumers like weavers and members of the weavers' co-operative society.

Way forward

1. Low return to farmers because of low cocoon price in mulberry & tasar offered by the state.
2. In mulberry, low cocoon quality is mainly due to poor mulberry garden, lack of timely supply of rearing appliances, rearing houses and poor disinfection.
3. In tasar sector, monopoly in marketing of tasar cocoons resulting low return to the farmers.
4. Shortage of technical manpower at different levels.
5. Existing multi-end reeling units for mulberry silk reeling are not working to full potential.
6. In tasar, lack of facilities like non performance of state PPCs for multiplication of tasar basic seed (1:10) to meet the state's seed requirement.
7. Proper documentation of the plan & programmes.





Odisha

Success story



Shri Ghanashyam Champia

Block: Harichandanpur

District: Keonjhar

Odisha

Shri Ghanashyam Champia is a successful tasar farmer of Tangiriapal TRCS Ltd., of Harichandanpur Block of Keonjhar district in Odisha. His dwelling house is situated in the bank of the river Kusei and sub-forests of Daitary hill saturated with natural Asan plants.

He is practicing tasar culture for more than 30 years and protected the flora surrounding his house for his Tasar culture. Previously, he was rearing wild Nalia tasar which was found to be irregular and variable and loss of crop. But, introduction of Daba T.V, with new technology of rearing and dfl from Patel Nagar, BSMTC (West Bengal) gives very good result. Previously, his earning was from paddy crop, part vegetable crop like Brinjal, Tomato, etc., and part sericulture along with wagon loading unloading of ores and minerals in Brahmanipal Railway siding. Since 2002-2003 gradually, the income increases above 1 Lakh per annum and now his full family is completely depending on tasar culture leaving aside vegetable farming and working labourer. During the year 2013-14, 2014-15, 2015-16, 2016-17 he earned Rs.45,005, Rs.81,226, Rs.1,42,835, Rs.2,14,700 respectively, (2013-14 was failed due to Phailene Cyclone). It also created great impact to neighbour tasar farmers of the TRCs. During the year 2015-16, 22 farmers earned more than 1 lakh rupees and presently, the Tangiriapal TRCs is No-1.

He had received support under CDP, State Plan Scheme and Tasar rearers Co-operative Society Tangiriapal TRCs, Ltd., The assistance to establish private grainage under CDP has helped him in producing tasar dfls for his own utilization in commercial rearing as well as selling to his co-farmers. He has constructed a dwelling house and a pond of 1 acre for fish culture. All his customs and culture function comfortably.

Earning from tasar culture

Year		Amount (Rs.)
2014-15	K10-11-0	Rs.45,005
2015-16	K30-5-10	Rs. 81,226
2016-17	K47-1-0	Rs.142,835
2017-18	K85-10-0	Rs.2,14,700

“Introduction of new technology in rearing has led living successful path. I’m so comfortable now with tasar culture.”





PUNJAB



50,362sq. km.



2,77,43,338



75.84%

Introduction

The first known documentation of the word 'Punjab' is in the writings of Ibn Batuta, who visited the region in the fourteenth century. However, the first mentioning of Sanskrit equivalent of 'Punjab' occurs in the great epic, the Mahabharata, where, it is described as pancha-nada, which means 'country of five rivers'. The capital of Punjab is Chandigarh.

Status of silk industry

Sericulture in the erstwhile Greater Punjab was started in the year 1895. The growth of sericulture industry suffered a lot on account of transfer of sericultural potential area to the neighboring Himachal Pradesh. Sericulture activity of Punjab is under the administrative control of the Directorate of Horticulture, Government of Punjab with the headquarters at Mohali. Sericulture activities are spread over four districts and controlled through two divisions i.e., Gurdaspur and Hoshiarpur. In Punjab, two crops (autumn and spring) are practiced, of that spring crop contributes more than 70% of the total raw silk production of the state.

Silk production trends

Variety	2014-15	2015-16	2016-17	2017-18
Mulberry plantation (ha)	1127	1129	1129	1129
Mulberry raw silk (MT)				
Bivoltine	4	0.76	3	3
Cross Breed				
Mulberry total (MT)	4	0.76	3	3

District-wise silk production during 2017-18

#	District	Mulberry raw silk production (MT)
1	Pathankot	1.80
2	Gurdaspur	0.14
3	Hoshiarpur	0.67
4	Ropar	0.14
	Total	3.00

Schemes of Government of India

Financial assistance availed by DOH, Punjab under CDP for development of sericulture industry in the state is as under:

- CSB share released during XI Plan : Rs.103.10 lakh
- CSB share released during XII Plan : Rs.32.12 lakh
- Total CSB assistance under CDP : Rs.135.22 lakh

Physical progress

Components	XI Plan	XII Plan
Support for Mulberry Plantation Development (Acre)	235	-
Supply of rearing appliances (Beneficiary)	30	-
Support for construction of rearing house (No.)	295	63
Publicity : Seminar/Workshop (No.)	1	1
Support for tapioca/castor cultivator (No.)	175	-
Support for eri rearing house (No.)	140	-
Support for hot air dryers (No.)	4	-
Supply of MRTM/MSM (No.)	14	-
Beneficiary empowerment programme (training & visit) (No.)	140	-

Silk Samagra

With a view to restructure centrally sponsored scheme, the Government of India discontinued the CDP during 2015-16, and introduced Silk Samagra (ISDSI), to supplement efforts for development of sericulture by the





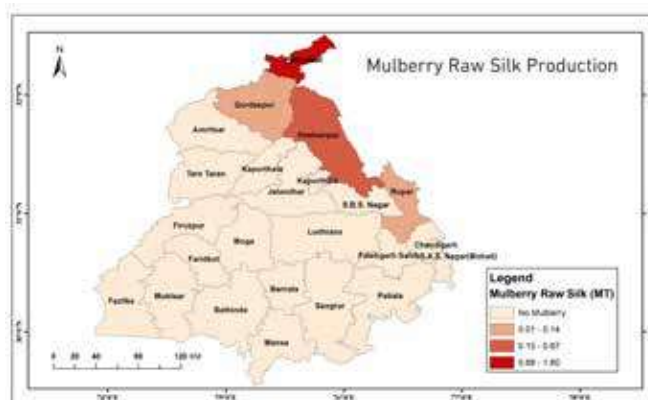
Punjab

states. DOH, Punjab could not avail any assistance from ISDSI scheme of Central Silk Board due to lack of state matching share. However, during 2017-18, DOH, Punjab submitted proposal under SCSP project.

Scheduled Caste Sub-Plan (SCSP) during 2017-18

State is implementing "Empowerment of Scheduled Caste families through sericulture under Scheduled Caste Sub-Plan (SCSP)" project to support 75 Schedule Caste families with the financial support from Central Silk Board in Pathankot district during the year 2017-18. Central Silk Board has released Rs.128.52 lakh for implementation of the project under the following components:

#	Component	2017-18	
		Physical unit	Amount released
1	Support for mulberry plantation development – tree plantations	75 Acre	8.40
2	Support for construction of vermi-compost units	15 No.	2.40
3	Supply of rearing appliance	75 No.	24.00
4	Supply of disinfecting materials	75 No.	1.20
5	Assistance for construction of rearing houses	75 No.	72.00
6	Assistance for raising & maintenance of chawki garden, construction of Chawki Rearing Centre (CRC) with equipments	1 No.	8.00
7	Production unit for biological inputs/ door-to-door service agents for disinfection and inputs supply & assistance for sericulture poly clinics	1 No.	1.20
8	Support for setting up of hot air drier (50 kg. capacity electrical)	1 No.	1.04
9	Training to sericulturists	75 Benf.	2.25
10	Exposure visit for sericulturists	25 Benf.	0.50
11	Information, Education and Communication (IEC) – Publicity materials, passbook, awareness camp, krishi mela, CBOs etc.	LS	7.53
Grand Total			128.52



State Plan schemes

Details of fund received by DOH, Punjab under State Plan Programme for development of sericulture in the state during last 6 years is given as under:

Year	Fund received under State Plan (Rs. in lakh)
2012-13	112.45
2013-14	115.84
2014-15	37.67
2015-16	0.00
2016-17	0.00
2017-18	0.00

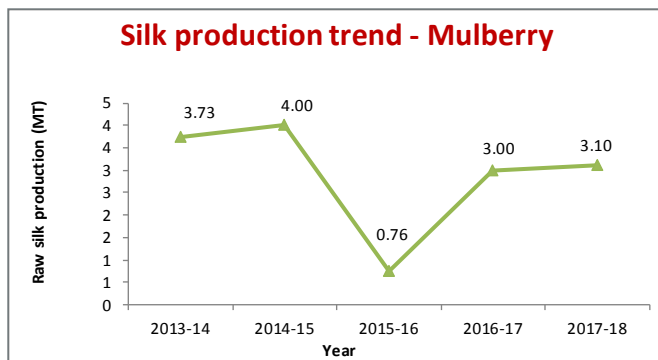
Convergence programme

In view of limited fund availability under central sector scheme and to maintain close inter-departmental linkages for effective implementation of developmental schemes, the Government of India emphasized the implementation of sericulture components by converging CSS programme with the developmental programmes of other Departments/Ministries like MORD, Agriculture etc. Accordingly, DOH, Haryana has also availed the fund for sericulture development through various ministries of the Government of India under Rashtriya Krishi Vikas Yojana (RKVY) etc. Fund release for RKVY for 2012-13: 20.26 lakh, 2013-14: 35 lakh, and for 2017-18 it was 50 lakh.





Silk production trend - Mulberry



Application of SILKS for expansion of plantation

In order to identify the potential area in term of availability of silkworm host plant and agro-climatic condition, Central Silk Board in association with the North Eastern Space Application Centre (NESAC), ISRO, Dept. of Space, Government of India, Shillong has taken up the project on Application of Remote Sensing and Geographical Information System (GIS) in sericulture development. The key objective of the project was to identify potential areas for sericulture expansion in waste cultivable lands using RS techniques and GIS applications. A SILKS (Sericulture Information Linkages Knowledge System) web portal has also been developed for all potential districts as an important source of knowledge for all the stakeholders.

Infrastructure under State and Central Silk Board

#	TSC	Farmer	Reeler	CRCs	Kisan Nursery	Total
1	Seri division- Mukeria	159	0	0	0	159
2	Seri division- Sujampur	490	0	0	0	490
	Total	649	0	0	0	649

Way Forward

- To make focused efforts without spreading resources
- To plan to integrate value addition and to ensure remunerative price to cocoons produced by the farmers to keep their interest continued in sericulture

Success Story



Shri Bakshi Ram
S/o. Shri PyareLal
Village: Sariyna
P.O.: Hajipur
District: Hoshiarpur
Punjab – 144 221
Mobile: 9417219501

Shri Bakshi Ram (48 years) is practicing silkworm rearing as a subsidiary occupation in addition to regular agricultural activities since last few years, particularly, during off season, since 2000. He has half an acre of S146 and TR10 mulberry plantation. Annually, he has been rearing 150 dfls to harvest 85 kg of cocoons with a productivity of 57 kg/100 dfls. He could get an additional income of more than Rs.15,000 from sericulture.

“Income from sericulture has helped me in buying seed and fertilizers as required for my agricultural crops. I could also provide health care and education to children besides purchasing essential household goods. I am able to manage the needs of my family and I don’t have to look up to other sources of income.”





SIKKIM

 7,096 sq. km.
  6,10,577
  81.42 %

Introduction

Sikkim is one of the smallest states amongst the eight sister states of the North-East, endowed with numerous flora and fauna and has a varied landscape. Southern part is blended with plain lands of West Bengal and gradually, gathers height towards the North. Sikkim is a state in North-East India, bordered by the international boundaries Bhutan, Tibet and Nepal. As a part of the Himalayas, the area has a dramatic landscape that includes India's highest mountain, Kanchenjunga (8,586 m). The state is home to glaciers, alpine meadows and thousands of varieties of wildflowers.

The state consists of 4 districts viz., East Sikkim, West Sikkim, North Sikkim and South Sikkim. Sikkim has become India's first fully organic state by implementing organic practices in around 75,000 hectares of agricultural land. And famous for creating intricate designs in handlooms with 345 numbers of handlooms and 568 handloom weavers.

Status of silk industry

Sericulture in Sikkim is of new origin and its activities remain confined with the Department of Forests and Wild life. The art of silkworm rearing and silk weaving has been closely associated with the culture and tradition amongst the women folk. The climatic condition prevailing in the state is conducive for all the 3 varieties of silks, i.e., mulberry, muga and eri. Presently, 384 hectares of land is covered under all the three silkworm food plantations by involving around 350 families in 30 villages.

Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	198	198	198	185
II	Mulberry raw silk (MT)				
	Bivoltine	5	3.5	6	0.001
	Mulberry Total (I)	5	3.5	6	0.001
III	Vanya Silk (MT)				
	Eri	3	2.70	3	-
	Muga	0.17	0.15	0.17	-
	Vanya Total (II)	3	2.85	3	-
	Grand Total (I+II)	8	6.35	9	0.001

District-wise silk production during 2016-17

#	District	Raw silk production (MT)		
		Mulberry	Eri	Muga
1	East	0.1	0.05	0.02
2	West	0.4	0.04	0.14
3	South	0.3	0.01	0.04
4	Others	5.2	2.9	
	Total	6	3	0.2

Schemes of Government of India

Government of India is providing continued support to Sikkim for intensive development of sericulture in all its spheres for maximization of benefits from existing capacity as a part of consolidation efforts and for creating new infrastructure at farmers' level, Common Facility Centres (CFCs) for reeling, spinning and silk weaving activities, besides, infrastructure for seed production for state government.

The Government of India had supported Sikkim for implementation of Catalytic Development Programme (CDP), a centrally sponsored scheme from IX Plan to first 3 years of XII Plan. The CDP envisaged development of host plantation and post-cocoon infrastructure, up-gradation of silk reeling and processing facilities,





enterprise development, capacity building and publicity etc. Funds released by Central Silk Board to Sikkim for implementation of CDP from IX Plan to XI Plan and first 3 years of XII plan are as below:

(Rs.in crore)

IX Plan (1997-2002)	X Plan (2002-07)	XI Plan (2007-12)	XII Plan (2012-13 to 2014-15)	Total funds released
0.12	1.54	4.64	0.46	6.76

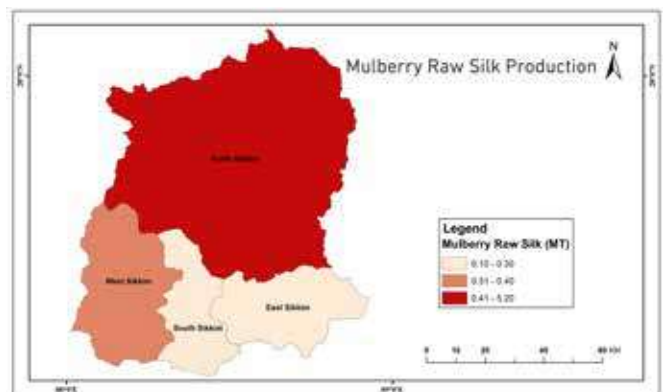
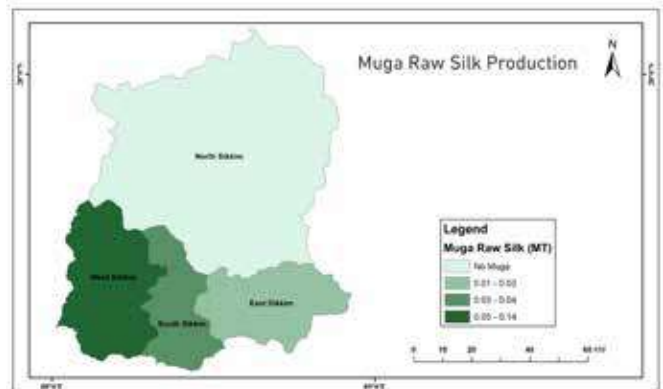
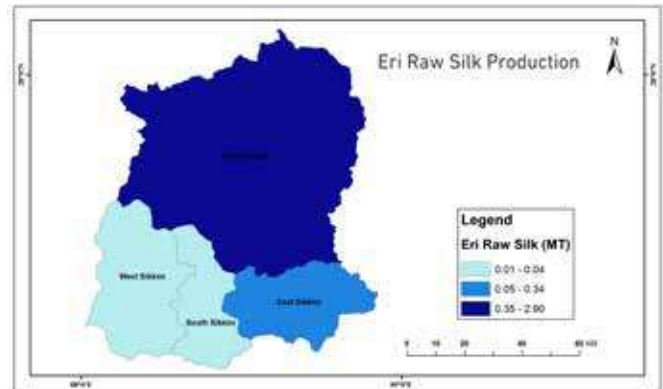
With a view to restructure centrally sponsored scheme, the Government of India discontinued the CDP during 2015-16, and introduced Silk Samagra (ISDSI).

North East Region Textile Promotion Scheme (NERTPS)

Keeping in view the prospects and potentialities for sericulture development in Sikkim and in the backdrop of CDP implemented from IX Plan to XII Plan, Government of India, under the umbrella scheme "North East Region Textile Promotion Scheme" (NERTPS) has focused on sericulture development in Sikkim under Integrated Sericulture Development Project (ISDP). The broad objective of NERTPS is to develop and modernize the sericulture sector in the state by providing the required government support in terms of raw material, seed banks, machinery, CFCs, skill development, design and marketing support etc.

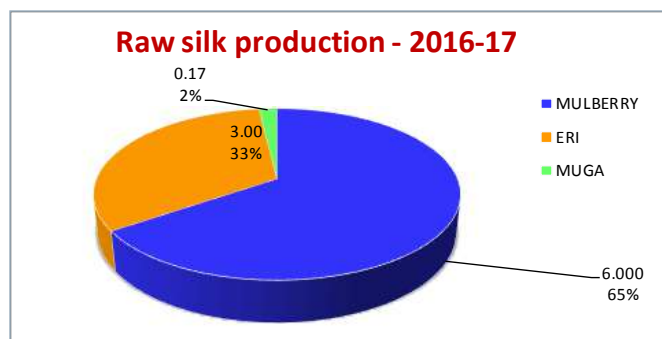
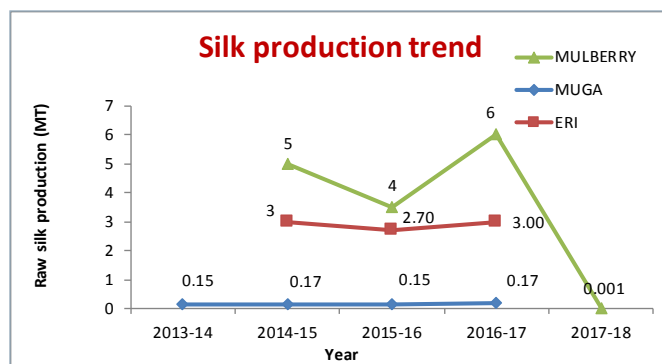
One sericulture project under Intensive Bivoltine Sericulture Development Project (IBSDP) is under implementation. The details of the project are as below:

Particulars	Project cost (Rs. in Cr.)	Govt share (Rs. in Cr.)	Project in	Project output	
				Benf. (No.)	Raw silk (MT)
IBSDP (mulberry) (2015-18)	29.68	26.43	2 districts (West & South Sikkim) & 2 blocks (Soreng and Wok)	1094	27 MT during the project and 17 MT per annum thereafter





Sikkim



Infrastructure under State and Central Silk Board for sericulture development

To support development of sericulture in all its spheres, the following infrastructures have been created under state and Central Silk Board over different Plan periods. Central Silk Board has established one Research Extension Centre in Rangpo.

Sector	Infrastructure	Under State/Pvt.
Mulberry	Mulberry farm	3
	Extension centre	1
	Chawki rearing centres	4

These infrastructures created under state and Central Silk Board are supporting sericulture development at various stages of silk production value chain.

Marketing

There is no organized marketing system in Sikkim. However, the state government facilitates the farmers

to market the cocoons produced by them at identified locations in the state and invite reelers and other consumers to participate in open auction. This marketing system is not on a daily basis due to the reason that the sericulture activity in Sikkim is seasonal.

Way forward

- Emphasis has been laid for horizontal expansion of silk industry in all NE states mostly in the form of land-based activity for cocoon production.
- There is much attention required for value addition to the cocoons produced within NE in the backdrop of inherent strength of this region in weaving.
- To establish a separate department for sericulture.

Success story



Smt. Kavita Subba

W/o. Shri Bal Bahadur Subba
Village: Lower Beyond, Siktam
Post: Tikpur GPU, Sombaria
District: West Sikkim
Sikkim - 737 121
Mobile: 7872963047

Smt. Kavita Subba has expertise of raising kisan nursery since 2003-04 in 2.5 acre with around 10,000 mulberry saplings of Kosen, BC-259 varieties in two batches, gains an income of about Rs.20,000. She has been assisted for construction of rearing house and supply of rearing equipment under CDP and undertook an exposure visit to South Indian states during 2008-09 and training by DOS Sikkim staff.

“With returns from sericulture, I could construct house, purchase one acre of land, a television and other household goods. Now, my family is leading a better life.”





TAMIL NADU

 1,30,058 sq. km.
  7,21,47,030
  80.09 %

Introduction

Tamil Nadu is located in the southernmost part of the country surrounded by Andhra Pradesh, Karnataka, Kerala, Indian Ocean and Bay of Bengal. The state ranked as one of the top seven developed states in India based on a «Multi-dimensional Development Index».

Status of silk industry

Sericulture introduced in Tamil Nadu from the border areas of Karnataka during early 1960. Now, Tamil Nadu stands number one in bivoltine silk production in India. The weaving sector of Tamil Nadu comprises mostly of handlooms. Kancheepuram, Arni, Kumbakonam, Salem, Coimbatore, Madurai and Tirunelveli are important weaving centres in the state. The Government of Tamil Nadu upgraded the sericulture wing functioned under the Department of Industries & Commerce to function as a separate Department of Sericulture (DOS) headed by a Director of Sericulture during 1979 with its headquarters at Salem. After formation of the DOS, infrastructure facilities like seed farms, cocoon markets, silk reeling units, sericulture training centres and silk exchange were established.

At present (up to 31.03.2018), about 24,427 farmers are practicing sericulture in Tamil Nadu, cultivating mulberry in 46,570.25 acres. This gives employment opportunities to 2,32,850 persons. Tamil Nadu occupies fourth position in the country in silk production. During 2017-18, the state has produced 1984 MT raw silk, including 1775 MT of bivoltine raw silk. The state continues to occupy the leading position in cocoon productivity of 80 kg per 100 silkworm layings, against the national average of 60.24 kg.

Kanchipuram



Kanchipuram is a traditional centre for silk sarees, manufacturing with rich designs in pallu, body and the border of the saree. The sarees are woven, using pure mulberry silk yarn. Three shuttles are used to weave a Kanchipuram saree. The border colour and designs are quite different from the body. Sarees are distinguished by their wide contrast borders. Temple borders, checks, stripes and florals (buttas) are traditional designs found on a Kanchipuram sarees.

Seri Tourism Corridor

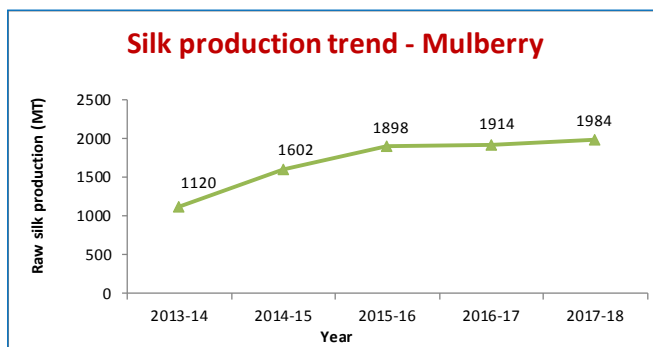
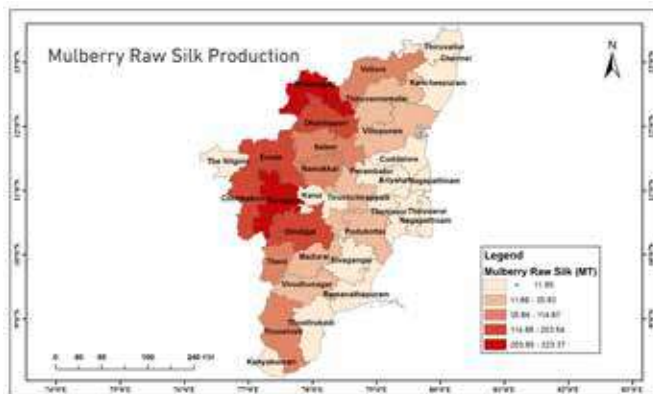


In order to popularize the sericulture activity among public, the Government of Tamil Nadu in association with Central Silk Board is establishing a *Seri Tourism Corridor* covering 6 acres of land at Yercaud, a tourist destination in Salem district to showcase sericulture activities from soil to silk to the tourists. Yercaud is a hilly destination, which attracts about 1.30 lakh tourists every year, both from inland and abroad.





Tamil Nadu



Silk production trends

Sericulture farmers of Tamil Nadu are in the fore front in adopting the latest technologies in mulberry cultivation and silkworm rearing. Thrust has been given to produce quality bivoltine silk in the state. The performance of the state for production of raw silk during the last five years is given below in the Table:

Variety	2014-15	2015-16	2016-17	2017-18
Mulberry plantation (ha)	16576	16160	17574	18854
Mulberry raw silk (MT)				
Bivoltine	1207	1532	1627	1775
Cross Breed	395	366	288	210
Mulberry Total (MT)	1602	1898	1914	1984

District-wise status of sericulture (2017-18)

#	District	Mulberry raw silk production (MT)		
		Bivoltine	Cross Breed	Total
1	Krishnagiri	227	113	340
2	Dharmapuri	127	14	142
3	Salem	98	11	109
4	Erode	195	17	212
5	Coimbatore	204		204
6	Thiruppur	167		167
7	The Nilgiris	2	0	2
8	Vellore	113	14	127
9	Kancheepuram	1		1
10	Thiruvallur	1		1
11	Thiruvannamalai	35	2	37
12	Namakkal	84	5	89
13	Karur	14	2	15
14	Trichy	37	4	41
15	Perambalur	3	1	4
16	Ariyalur	6		6
17	Pudukottai	23	2	25
18	Thiruvarur	5	1	6
19	Thanjavur	10	1	12
20	Nagapattinam	3	1	3
21	Villupuram	32	3	35
22	Cuddalore	12	1	13
23	Madurai	16	1	17
24	Theni	82	4	86
25	Virudhunagar	18	2	19
26	Ramnad	6	0	7
27	Sivagangai	10	0	11
28	Dindigal	155	1	156
29	Tirunelveli	67	6	73
30	Thoothukudi	11	1	12
31	Kanyakumari	11	1	12
	Total	1775	210	1984





Schemes of Government of India

The Department of Sericulture, Government of Tamil Nadu and the Central Silk Board are implementing various developmental activities under Catalytic Development Programme in IX, X, & XI Five Year Plan periods, ISDSI in 2015-16 & 2016-17 and Silk Samagra during 2017-18 to till date. Major support has been given for plantation development, irrigation, construction of rearing house, supply of rearing appliances, supply of quality disinfectants, production units for biological inputs/door-to-door service agents for disinfection and inputs supply & assistance for sericulture poly clinics, establishment of chawki rearing centres, strengthening of state seed infrastructure, establishment of multi-end & automatic reeling machines, twisting machines and dupion machines etc. Plan-wise fund released is given below in the table:

(Rs.in crore)

IX Plan (1997-2002)	X Plan (2002-2007)	XI Plan (2007-2012)	XII Plan (2012-2017)	Total
5.02	12.45	59.57	53.30	130.35

Silk Samagra

An Integrated Scheme for Development of Sericulture and Silk Industry viz., Silk Samagra, is under implementation from 2017-18 to 2019-20 for overall development of sericulture industry in the country. Central Silk Board is supporting the state for implementation of various components under mulberry, which catalyses the efforts of state government to improve quality, productivity and production of raw silk besides, generating employment opportunities particularly in the rural areas. The interventions cover major areas of (a) Development and expansion of host plant, (b) Strengthening and creation of silkworm seed multiplication infrastructure, (c) Development of farm and post-cocoon infrastructure, (d) Up-gradation of reeling and processing technologies in silk, and (e) Capacity Building through Skill Development/Enterprise development programme. The details of assistance are as below:

(Rs. in crore)

Year	Central assistance through CSB		Total
2014-15	14.09		20.78
2015-16	4.91 ISDSI		30.13
2016-17	9.49 ISDSI		27.4
2017-18	11.10 Silk Samagra		29.3
2018-19	Tentative allocation Rs.14.50 crore	Fund released Rs.6.22 crore	Total allocation Rs.28.67 crore

State Plan schemes

To protect the welfare of sericulture farmers, the state government continues to implement important schemes. Year-wise fund utilized/allocated under State Plan is given below:

(Rs. in crore)

2014-15	2015-16	2016-17	2017-18	2018-19	Total
6.69	25.22	17.91	18.20	14.17 (Allocated)	82.19

Convergence programme

(Rs. in crore)

Year	2013-14	2014-15	2015-16	2016-17	2017-18	Total
MGNREGA	0.25	0.44	--	0.04	--	0.73

Infrastructure under State and CSB

Infrastructure under State Sericulture Department

Units	No.
Head Quarters at Salem	1
Regional Offices	5
Sericulture training institute	1
Bivoltine seed grainages	3
Technical service centres	105
ADS Offices	19
Seed farms	19
State grainages	11
Government silk farms	31
Tamil Nadu Cooperative Silk Producers Federation Ltd., (TANSILK) with 6 branches	1





Tamil Nadu

Units	No.
Government cocoon markets	20
Reeling units	8
Private reeling units (1033 Nos. of reeling devices)	134
State chawki rearing centres	4
Private chawki rearing centres (Micro 100 + Macro 34)	134
Handlooms	1,04,000

Infrastructure under Central Silk Board

Units	No.
Regional Office, Salem	1
Regional Sericultural Research Station (RSRS), Salem	1
Central Sericultural Germplasm Resource Centre (CSGRC), Hosur	1
Satellite Silkworm Breeding Station, Coonoor	1
Research Extension Centre (REC)	4
Silkworm Seed Production Centre (SSPC)	3
Basic Seed Farm (BSF)	2
Silk conditioning & testing house, Kanchipuram	1

Post-cocoon sector

For strengthening post-cocoon sector, multi-pronged strategy has been adopted with a thrust for production of import-substitute bivoltine raw silk, establishment of more number of automatic/ multi-end/ automatic dupion silk reeling units, skill training for entrepreneurs in quality, productivity, cost minimization and silk waste management. It is proposed to give training in silk reeling to more number of silk reeling workers as well as entrepreneurs. For enabling the farmers to transact the cocoons they produced, the DOS has established 20 cocoon markets in various districts in the state. A committee consisting of buyer, reelers and farmers helps in fixing fair price for cocoon every day. The market staff facilitates the open auction and reelers are allowed to bid and procure the cocoons. Seed cocoons are purchased from seed rearers and supplied to grainages for commercial silkworm seed production. Three seed cocoon markets are

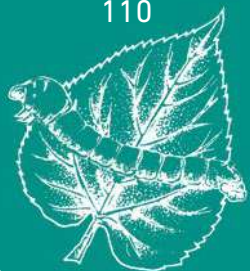
functioning to transact the seed cocoons. 0.75 % of cocoon transaction value is collected as levy from sellers and buyers. The performance of these cocoon markets for the past three years is given below:

Year	Cocoon transaction (MT)	Value (Rs. in lakh)	Levy (Rs. in lakh)
2015-16	1862.72	4728.44	71.66
2016-17	1753.80	6480.19	97.29
2017-18	1720.26	7787.54	117.06

Way forward

- Supporting small and marginal farmers by encouraging intensive cultivation.
- Creation of critical infrastructure facilities.
- Thrust on capacity building and training.
- Market intelligence, coordination and development.
- Strengthening sericulture extension system.
- Promotion of organic farming.
- Integration with other collaborative departments.
- Strengthening of silkworm seed infrastructure for self-reliance.
- Obtaining quality certification for grainages and training institutes.
- Technology up-gradation.
- To promote ericulture in the state, in view of creating employment opportunities to the economically weaker sections of the people, particularly, tribals and for the production of "Ahimsa Silk".
- 100% DBT compliance by the state.
- 100% FRDB updation by the state.
- No DCB pending with the state.





Success Story



Shri M. Ponraj

Village: Aathukinathu Patty, Kudimangalam Block

Taluk: Udumalpet

District: Tirupur

State: Tamil Nadu

Shri M. Ponraj (38 years) hails from Aathukinathu Patty Village, Kudimangalam Block, Udumalpet Taluk, Tirupur district, is a successful sericulture farmer since 2004. His wife Smt. Sudha (32 years) also assists him in silkworm rearing activities. He took training in sericulture activities at Tamil Nadu Sericulture Training Institute, Hosur.

He maintains his mulberry garden and silkworm rearing shed as per the latest techniques suggested by the sericulture staff and uses cost-effective methodologies like bio-fertilizers, neem cake and farm yard manure to enhance the soil health of his garden. He is recycling seri-bed wastes in the form of compost and using bleaching powder and newly developed 'Serifit' rearing house disinfectant. He procures chawki silkworm from nearby chawki rearing centres to ease the rearing efforts and reduce the rearing period. Shri M. Ponraj received state support for construction of a rearing house, rearing appliances and drip irrigation to ensure quality rearing. He rears 400-600 dfls per crop, obtains 90 to 95% yield every crop, and earns an average income of Rs.17.50 lakh/year/10 crops. He has built a house and owning a car, out of income from sericulture.

“Systematic and scientific way of practicing sericulture helped me to earn a decent income and lead a happy life”





TELANGANA



275,045 sq. km



84,580,777



67.02%

(United Andhra Pradesh, 2011 census)

Introduction

Telangana is situated in the central stretch of the eastern seaboard of the Indian Peninsula. The Deccan plateau is drained by two major Rivers, Godavari (79%) and Krishna (69%) and other minor Rivers such as Manair, Bhima, Dindi, Kinnerasani, Manjeera, Munneru, Moosi, Penganga, Praanahita, Peddavagu and Taliperu. Telangana comprises of 31 districts. It has its borders with Maharashtra, Karnataka and the residuary state of Andhra Pradesh (Seemandhra).

Telangana is a semi-arid area and has a predominantly hot and dry climate. Summers start in March and peak in May with an average high temperatures in the 42 °C (108 °F) range. The monsoon arrives in June and lasts until September with about 755 mm (29.7 inches) of precipitation. A dry, mild winter starts during late November and lasts until early February with little humidity and average temperatures in the 22-23 °C (72-73 °F) range and the climate is suitable for agriculture and allied activities. The majority of the people of Telangana are engaged in subsistence agriculture. Rice, corn, millet, pulses, cotton and sugar cane are the main crops and sericulture (silk cultivation) is also wide spread.

Status of silk industry

In Telangana, about 4256 farmers in 31 districts are practicing mulberry sericulture. The state has the advantage of having a large number of silk weaver pockets in Narayanpet, Pochampally and Kotha Kota. Reeling industry is well developed in Jangaon district. Telangana state is also bestowed with 4000 ha. of forest flora of

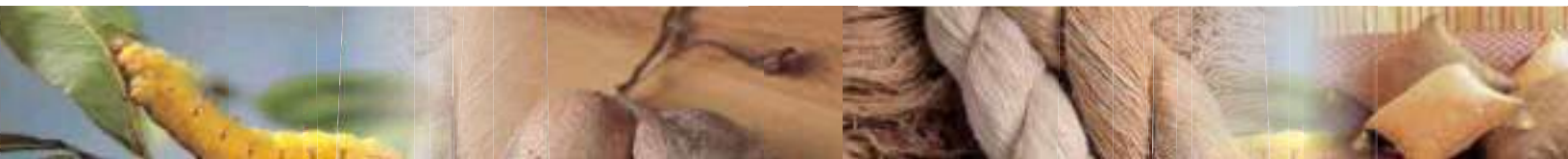
T. tomentosa and *T. arjuna* in the districts of Adilabad, Karimnagar, Khammam and Warangal with around 1300 households, mostly tribals, engaged in tasar silkworm rearing in the state. Reeling industry is well developed in Jangaon district and there is well established system of providing direct market to sericulture farmers in Government Cocoon Market established at Tirumalagiri of Secunderabad and Automatic Reeling Machine (ARM), Jangaon, where, the reelers purchase cocoons through a system of competitive bidding process. Government is also encouraging farmers with production incentives to the cocoons produced by them since 2014.

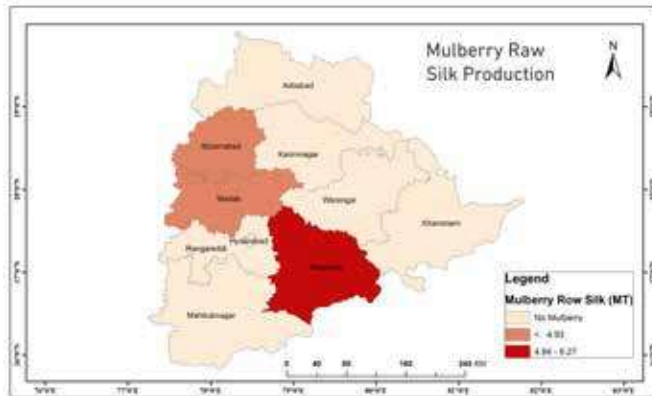
Gadwal saree



Gadwal saree is a handcrafted woven saree style in Gadwal of Jogulamba, Gadwal District. They are most notable for the zari on the sarees. The saree consists of cotton body with silk pallu.

Telangana is known for production of quality bivoltine silk. The hilly topography, socio-economic condition of the people, agro-climatic condition of the state with abundant availability of natural resources including natural mulberry wealth are favourable factors for development of sericulture in the state. Tasar activities are also carried out in the state at small level. However, this sector could not be established on commercial basis due to various reasons. Sericulture industry is looked after by





the Commissioner of Horticulture who is also in-charge of sericulture with headquarter in Hyderabad (recently the department has been merged with Horticulture Department of Telangana) and there is no separate directorate to look after exclusively sericulture activities in the state. Efforts of Central Silk Board and state departments in reaching farmers, reelers and weavers with appropriate and modern technologies create positive impact on quality bivoltine silk production.

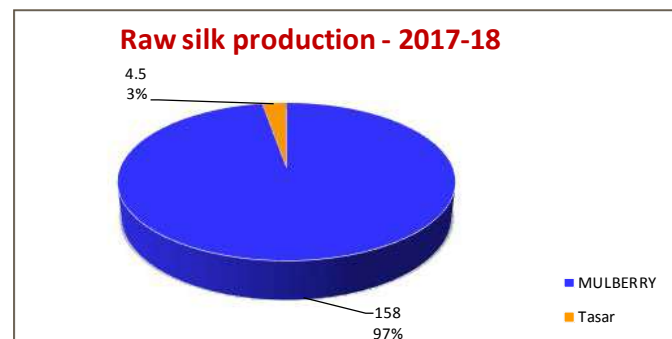
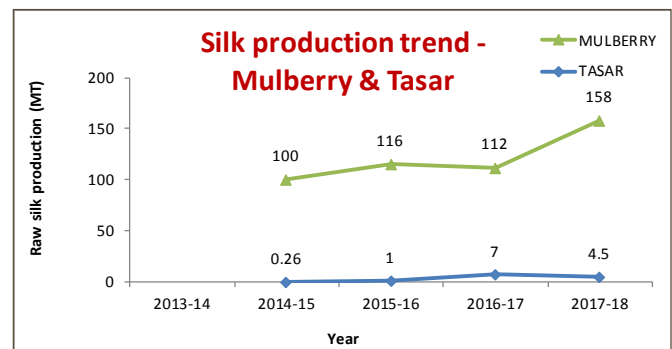
Telangana, though it is in non-traditional area, gradually, enhancing production of bivoltine cocoons to the tune of 1108 MTs during 2017-18. Most of these families belong to economically weaker sections of the society having marginal/small land holdings. Nalgonda district of Telangana is completely converted to bivoltine cocoon production and the farmers are getting remunerative price for the bivoltine cocoons than crossbreed cocoons. Medak, Nalgonda, Khammam, Karimnagar, Gadwal, Warangal, Mahabubnagar are the major cocoon producing districts in the state.

In the recent past, the department is emphasizing more on bivoltine raw silk production with implementation of CDP/CSS due to which on-farm & non-farm sectors are gaining momentum in Telangana. The goal of the department is production of International 2A and above grade bivoltine silk production duly sanctioning of ARMs in the state under private sector. The department is also concentrating on strengthening of marketing system

of bivoltine hybrid cocoons duly providing incentives on production of bivoltine cocoons to the farmers @ Rs.75 per kg. Out of the total population, 0.013% of families are involved in sericulture activities.

Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry area (ha)	1862	2509	2650	3517
II	Mulberry raw silk (MT)				
	Bivoltine	51	89	105	158
	Crossbreed	49	27	7	0.035
	Mulberry Total (MT)	100	116	112	158
III	Vanya silk (MT)				
	Tasar	0.26	0.756	7	5
	Grand Total (Mulberry + Vanya)	100	116	119	163





Telangana

District-wise cocoon and raw silk production during 2017-18

#	District	Mulberry area (ha)	Bivoltine	
			Cocoon production (MT)	Raw silk production (MT)
1	Mancherial	34	5.02	0.72
2	Nirmal	62.8	4.4	0.63
3	Karimnagar	216.8	81.94	11.71
4	Jagtial	132.8	7.88	1.13
5	Peddapally	28.8	4.95	0.71
6	Rajanna Sircilla	53.6	3.87	0.55
7	Nizamabad	25.6	2.38	0.34
8	Kamareddy	20.8	5.11	0.73
9	Warangal (U)	165.6	77.72	11.10
10	Warangal (R)	92.4	46.18	6.60
11	Jayashankar Bhupalpally	40.8	15.6	2.23
12	Jangaon	84.4	65.85	9.41
13	Mahabubabad	90	30.56	4.37
14	Khammam	211.2	27.79	3.97
15	Bhadradi Kothagudem	77.6	29.31	4.17
16	Medak	144.4	33.65	4.81
17	Sanagareddy	340.8	64.79	9.26
18	Siddipet	368.4	164.35	23.48
19	Mahbubnagar	178	23.54	3.36
20	Wanaparthy	92	33.08	4.73
21	Nagar Kurnool	41.2	2.34	0.33
22	Jogulamba Gadwal	104	72.21	10.32
23	Nalgonda	169.2	31.6	4.51
24	Suryapet	350	160.06	22.87
25	Yadadri Bhuvanagiri	135.2	76.15	10.88
26	Vikarabad	68.4	6.89	0.98
27	Medchal Malkajgiri	2.8		
28	Ranga Reddy	185.6	30.88	4.41
TOTAL		3517	1108	158

Schemes of Government of India

Government of India is providing continued support to Telangana for intensive development of sericulture in all its spheres for maximization of benefits from existing capacity as a part of consolidation efforts and for creating new infrastructure at farmers' level, common facility centres for farm mechanization, reeling, spinning and silk weaving activities, besides infrastructure for seed production for state governments. These interventions are expected to transform the state from the present level of silk production to *silk hub of India* in coming years by providing self employment opportunities in the hinterland, protect the heritage with ultimate aim of "Make in India" in an eco-friendly atmosphere.

Government of India has supported Telangana for implementation of Catalytic Development Programme (CDP), a centrally sponsored scheme from IX Plan to XII Plan. The CDP envisaged development of host plantations, post cocoon infrastructure, extension, up-gradation of silk reeling and processing facilities, capacity building, publicity, enterprise development, etc. Fund released by Central Silk Board to Telangana for implementation of the CDP from IX Plan to XII plan are as under:

(Rs. in crore)

IX Plan (1997-2002)	X Plan (2002-07)	XI Plan (2007-12)	XII Plan (2012-17)	Total funds released
			19.91	19.91
United Andhra Pradesh				

Based on the decision of Government of India to restructure centrally sponsored scheme, the CDP was discontinued during 2015-16.

Silk Samagra

Silk Samagra, a comprehensive central sector scheme of Central Silk Board under implementation from 2017-18 to 2019-20, for overall development of sericulture industry in the country, implemented directly as well as through state governments. Central Silk Board has been supporting the state towards implementation of various beneficiary oriented components under mulberry, vanya and post-



cocoon sectors. These interventions are important tools for transfer and adoption of improved technology packages developed by the research institutes of Central Silk Board. The programme catalyzes the efforts of state governments to improve the quality, productivity and production of raw silk besides, generating employment opportunities particularly in the rural areas. The interventions cover the major areas viz., (a) Development and expansion of host plant, (b) Strengthening and creation of silkworm seed multiplication infrastructure, (c) Development of farm and post-cocoon infrastructure, (d) Up-gradation of reeling and processing technologies in silk and (e) Capacity building through skill development/Enterprise development programme. The details of assistance are as below:

(Rs. in crore)

2015-16	2016-17	2017-18	2018-19
CSS		Silk Samagra	
4.32	2.04	2.10	4.060

State Plan schemes

State has directorate of sericulture for development of sericulture which looks after all issues relating to sericulture. Besides, the state has given matching share for implementation of the schemes/programmes under state plan as well as "Silk Samagra". In addition to the support from Government of India, state also has state-specific plans for maintenance of infrastructure created over various plan periods and for implementation of specific components, which are not covered under any of the Central Sector and centrally sponsored schemes. The state has limited manpower for implementation of centrally sponsored schemes, convergence and state specific sericulture programmes (the State is having 220 staff strength). Financial assistance provided by the state for maintenance of infrastructure and related activities under sericulture sector is:

(Rs. in crore)

During XII Plan (2012-17)	2017-18	2018-19
30.6328	2.64	7.64

The funds from the State Plan programmes were in respect of activities like plantation, silkworm rearing, and infrastructure development at beneficiary and state level, besides maintenance of infrastructure available in the state created over a period of time.

Convergence programme

While funding for the future development programmes could be with convergence from Ministry of Textiles, Agriculture and Rural Development, etc., in the state to consider sericulture as an important sector and provide matching state share besides creating a full-fledged sericulture department in the years to come. Table below gives details of assistance availed by the state under convergence:

(Rs. in crore)

Year	RKVY	MGNREGS	Others	Total
XII Plan (2012-17)	3.6722	2.2261	-	5.8983
2017-18	-	157.47	-	157.47
2018-19	-	2.1052	-	2.1052

Infrastructure under State and Central Silk Board

Central Silk Board has also established following Institutes/Units to supplement the efforts of state government for the development of sericulture:

Particulars	No.
Department farms	28
Basic seed farm	--
Grainages	1 (not functioning)
Chawki rearing centre	8 (private)
Cocoon market	2
Government reeling unit	3
Private reeling unit	4
Number of reelers	110
Number of weavers	606
Silk handloom	500 (Mulberry)
Spindles	5
Silk Park	1 (Private)





Telangana

Mulberry sector	Tasar sector
RSRS, Mulugu	BSMTC, Chinoor
REC, Vikarabad	RSRS, Warangal

Marketing

The Department of Sericulture, Government of Telangana established two government cocoon markets one each at Tirumalgiri of Secunderabad and another notified cocoon market at Jangoan to create marketing facilities to the cocoons produced by the sericulture farmers of Telangana. In order to provide remunerative prices for the cocoons produced by the farmers, the licensed reelers and government reeling unit in-charges are allowed to bid in the open market to create competition among the bidders. Government is also providing support price to the farmers for the cocoons produced by them @Rs.50 per kg & Rs.75 per kg for crossbreed and bivoltine hybrid reeling cocoons, respectively, in addition to market price. Besides, these markets, the government silk reeling units also purchase the local small lots to avoid the transportation expenditure of the farmers. Three government silk reeling units are functioning in the state at Shadnagar of Ranga Reddy district, Vikarabad district, Utnoor of Adilabad district. Andhra Pradesh, Karnataka states are also participating in the open auction for purchase of reeling cocoons brought by the farmers to the markets for competitive price to the farmers. At present, one ARM at Jangoan and seven 10-basin MERUs in Warangal, Ranga Reddy & Suryapet districts are functioning under private sector in the state. Two more MERUs are under establishment at Jangoan district.

Way forward

- As the poor tribals are practising the tasar activity foregoing the wage earning, there is a need to treat the rearing period on wage earning under MGNREGS scheme.
- Development of sericulture in the aspirational districts viz., Kammam, Warangal and Adilabad in the form of *soil to silk project*.
- The state has also got strong industrial base besides, traditional silk weaving pockets like in Narayanpet, Pochampally, Gadwal and Kotha Kota which are nationally renowned silk handloom weaving centers, encouraging the growth of sericulture industry in the state.
- To explore possibilities of creating seed multiplication facilities to match the raw silk production targets and to reduce outside dependency.
- Promote private entrepreneurs for industrial seed production and installation of cold storage units for commercial use to meet the bivoltine seed requirement.
- To strengthen farmers'-producer organization in sericulture and to open up new vistas in PPP.
- To focus more on convergence approach to dovetail funds from MGNREGS, TSMIP, NABARD, RKVY, etc.





Success story



Shri N. Krishna Reddy

R/o. Nandyalavarigudem,
Atmakur (S) Mandal,
Suryapet (District)

Shri N. Krishna Reddy resident of Nandyalavarigudem, Atmakur mandal, Suryapet district. He is a progressive and modern leading farmer of this area, who has taken up mulberry in 2.50 acres. The Department has sanctioned an amount of Rs.1,00,000 for construction of rearing shed under CDP and provided the rearing equipments. During 2012-13 he has taken up 5 bivoltine crops, one crossbreed crop and one bivoltine seed crop. Totally, he has brushed 2,000 dfls and harvested 1,532 kg and got an amount of Rs.5.30 lakh. The total expenditure was about Rs.75,000 and net profit for 2.50 acres/year was Rs.4,55,000. He has been awarded "Best Farmer" during 2012-13 and Rs. 5,000 cash award by the District Collector from ATMA funds with Shalvasanmanam and a memento on the eve of Ugadi festival. He got net profit Rs.6,27,690, Rs.3,62,000, Rs.3,15,108 from sericulture during 2013-14, 2014-15 & 2015-16, respectively. He has also motivated many other farmers to take up sericulture.

"Financial support from the Government made me to construct a rearing house. And now, with success in sericulture I'm an inspiration to the fellow farmers in my village."





TRIPURA

 10,486sq. km.
  36,73,917
  87.22%

Introduction

Tripura is a land of rolling hills, valleys, rivers and lakes. It is a hilly state in North-East India, bordered 3 sides by Bangladesh, Assam and Mizoram to the East and home to a diverse mix of tribal cultures and religious groups. Agriculture is the primary occupation of the rural populace, besides, horticulture and sericulture play an important role in providing subsidiary income. The art of silkworm rearing and silk weaving has been closely associated with the culture and tradition amongst the women folk. The state consists of eight districts namely Dhalai, North Tripura, Khowai, Gomati, Sepahijala, South Tripura, Unakoti and West Tripura. Mulberry sericulture is practised in all 8 districts. Tripura is famous for creating intricate designs in handlooms with 1,39,011 number of handlooms and 1,37,177 handloom weavers.

Status of silk industry

Tripura is the only state in NE where, the silk production is confined to development of mulberry silk. Here, sericulture is one of the major rural household activity and has a special significance for upliftment of women. Mulberry sericulture is practised in West Tripura, Khowai, Sepahijala, Gomati, South Tripura, Dhalai, North Tripura and Unakoti districts under various developmental schemes. The climatic condition in the state is conducive for commercial exploitation of mulberry.

Presently, 2,184 hectares of land is covered under silkworm food plantation in the state by involving around 14,500 farmers from 124 villages and 80 reelers. Tripura ranks third among NE states in mulberry silk production after Manipur and Mizoram. Mulberry is grown in all the districts.

Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	2426	3161	2450	2184
II	Mulberry raw silk (MT)				
	Bivoltine	33	22	75	28
	Cross Breed	15	31	-	59
	Total	48	52	75	87

District-wise details of sericulture (2017-18)

#	District	Mulberry raw silk production (MT)
1	West Tripura	58.35
2	Khowai	1.08
3	Sepahijala	2.5
4	Gomati	3.8
5	South Tripura	3.7
6	Dhalai	12.5
7	North Tripura	3.9
8	Unakoti	0.8
	Total	87.35

Schemes of Government of India

Government of India is providing continued support to Tripura for intensive development of sericulture in all its spheres for maximization of benefits from existing capacity as a part of consolidation efforts and for creating new infrastructure at farmers' level, common facility centres for farm mechanization, reeling, spinning and silk weaving activities, besides, infrastructure for seed production for state governments.

The Government of India supported the state for implementation of Catalytic Development Programme (CDP), a centrally sponsored scheme from IX Plan to first 3 years of XII Plan. The CDP envisaged development of host plantation and post-cocoon infrastructure, up-gradation of silk reeling and processing facilities, enterprise development, capacity building and publicity

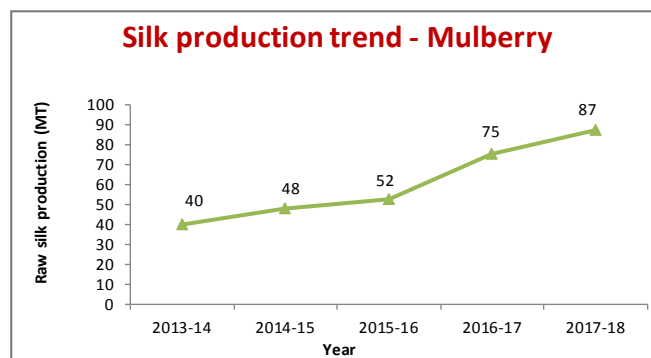
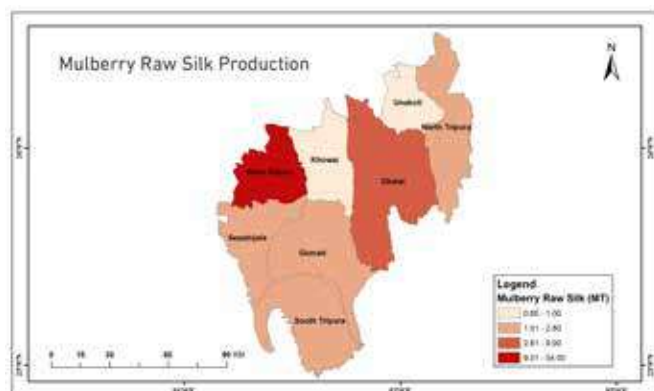




etc. Funds released by Central Silk Board to Tripura for implementation of the CDP from IX Plan to XII plan are as under:

(Rs. in crore)				
IX Plan (1997-2002)	X Plan (2002-07)	XI Plan (2007-12)	XII Plan (2012-13 to 2014-15)	Total funds released
0.93	5.79	25.03	23.07	54.82

With a view to restructure centrally sponsored scheme, the Government of India discontinued the CDP during 2015-16, and introduced Silk Samagra (ISDSI).



North East Region Textile Promotion Scheme (NERTPS)

Keeping in view the prospects and potential for sericulture development in Tripura and in the backdrop of CDP implemented from IX Plan to XII Plan, Government of India, under the umbrella scheme "North East Region Textile Promotion Scheme" (NERTPS) has focussed on sericulture development in Tripura under Integrated Sericulture Development Project (ISDP). The broad objective of the NERTPS is to develop and modernize the sericulture sector in the state by providing the required government support in terms of raw material, seed banks, machinery, Common Facility Centres (CFC), skill development, design and marketing support etc. Three sericulture projects have been approved under ISDP and IBSDP are under implementation. The details of the projects are as below:

Particulars	Project cost (Rs. in Cr.)	Gov share (Rs. in Cr.)	Project in	Project output	
				Benf. (No.)	Raw silk (MT)
ISDP (mulberry) (2014-18)	47.95	33.20	1 district & 9 blocks	3,432	275 MT during the project and 121 MT per annum thereafter
IBSDP (mulberry) (2015-18)	29.43	25.95	1 district & 6 blocks	1,144	27 MT during the project and 16 MT per annum thereafter
Silk printing (2015-18)	3.71	3.71	-	-	1.50 lakh MT/yr





Tripura

During 2017-18, assistance was provided to Tripura under NERTPS, hence assistance was not sought by the state under Silk Samagra.

Convergence programme

While funding for the future development programmes could be with convergence from Ministry of Textiles, Agriculture and Rural Development etc., the state needs to consider sericulture as an important sector and provide matching state share besides creating a full-fledged sericulture department in the years to come. The table below gives details of assistance availed by the state under convergence:

(Rs. in crore)

Year	RKVY	MGNREGS	Others	Total
2015-16		0.15		0.15
2016-17	-	0.17	-	0.17
2017-18	-	0.12	-	0.12

Infrastructure under state and Central Silk Board

To support development of sericulture in all its spheres, the following infrastructures have been created under State and Central Silk Board over different Plan periods. Central Silk Board established one Research Extension Centre in Agartala. Details of infrastructure created by DOS, Sikkim is here under:

#	Infrastructure	No.
1	Sericulture district office	7
2	Commercial state grainage units	1
3	Sericulture training institute	1
4	Silk reeling unit	4
5	Mulberry sericulture societies	11
6	Chawki rearing centre	18
7	Silk twisting unit	2
8	Powerloom unit	2
9	Silk processing & printing unit	2
10	Outlet of silk fabrics	2

These infrastructures created under state and Central Silk Board are supporting sericulture development in the state at various stages of silk production value chain.

Post-cocoon sector

The following infrastructure at state level and beneficiary level are available to support value addition of cocoons produced within the state:

Infrastructure	No.
Multi-end reeling units	5
Twisting units	4

Marketing

There is no organized marketing system in Tripura. However, the state government facilitates the farmers to market the cocoons produced by them at identified locations in the state and invite reelers and other consumers to participate in open auction. This marketing system is not on a daily basis due to the reason that the sericulture activity in Tripura is seasonal.

Way forward

- Emphasis has been laid for horizontal expansion of silk industry in all NE states mostly in the form of land-based activity for cocoon production.
- There is much attention required for value addition to the cocoons produced within NE.
- Development of sericulture in aspirational district-Dhalai in the form of *soil-to-silk* project.
- To establish a separate department for sericulture.

Tripura being an important state in the sericulture map of India contributing quality bivoltine silk production, Bivoltine Sericulture Development Project in Sepahijala district is proposed to the Ministry for consideration.





Success story



Smt. Ganga Rupini

W/o. Shri Purna Chandra Rupini

Village: Vrigudasbari, P.O.: Champaka nagar

Taluk: Mandai,

District: West Tripura.

Tripura – 737 133.

Mobile: 8257898611.

Smt. Ganga Rupini has been involved in mulberry cocoon production activity since last thirteen years. with two acres of mulberry garden of S1 and S-1635 varieties rears improved cross breed and bivoltine and takes five crops per annum. She earns a net income of Rs.93,500 by rearing 750 dfls and harvesting 375 kg cocoons. She has received assistance for various activities in sericulture and undergone training in mulberry plantation and silkworm rearing.

“Sericulture has earned me a respect in the society. It has also enabled me to purchase one acre land, lifestyle gadgets like furniture, TV and bicycle etc. I could also ensure health care for the family members and provide good education to my children.”





UTTAR PRADESH

 2,40,928 sq. km.
  19,98,12,341
  67.68%

Introduction

Uttar Pradesh is the rainbow land where, the multi-hued Indian culture has blossomed from times immemorial surrounded by Bihar in the East, Madhya Pradesh in the South, Rajasthan, Delhi, Himachal Pradesh and Haryana in the West and Uttarakhand in the North. Nepal touch the northern borders of Uttar Pradesh, it assumes strategic importance for Indian defense. Rich and tranquil expanses of meadows, perennial rivers, dense forests and fertile soil, garlanded by the Ganga and Yamuna, the two pious rivers of Indian mythology. Blessed with historical heroes like, Rama, Krishna, Buddha, Mahavira, Ashoka, Harsha, Akbar and Mahatma Gandhi.

Banarasi Brocade



A Banarasi saree is produced in Varanasi, a city also called as Banaras. The sarees are known for their gold and silver brocade or zari, fine silk and opulent embroidery. The sarees are made of finely woven silk and are decorated with intricate designs, and because of these engravings these sarees are relatively heavy.

Status of silk industry

Uttar Pradesh is one of the major mulberry raw silk producing state among the non-traditional states. Mulberry sericulture is practiced both on nature grown mulberry trees and plantation raised in private land in around 45 districts in the plain, and tarai regions of Uttar Pradesh. Tasar culture still remains as a subsidiary occupation of the tribals living in southern part of the state. Chandauli, Sonbhadra, Lalitpur and Fatehpur are the major districts identified for tropical tasar. Eri culture is introduced recently, in the state during 2003-04 under Catalytic Development Programme of Central Silk Board during X Plan and practiced in the districts of Kanpur, where, there is a vast potentiality of the sector for growth. Varanasi is one of the well-known silk weaving clusters in India known for its exquisite silk sarees and fabrics show casing the skill of the workmanship and rich cultural heritage. This city encompasses a wide canopy of weavers & textiles weaving clusters through-out the length & width. It is estimated that the around 3500-4000 MT of raw silk is consumed/annum by the Varanasi cluster at present. The silk banarasi saree with unique traditional intricate designing of pure zari commands the dream of every Indian bride. Varanasi specializes in brocade weaving. The weave-rich varieties of saree are, Jangla, Tanchoi, Vaskat, Cutwork, Tishu and Butidar. The main product of Banaras Handloom Cluster is saree, 10-15% are the other products viz., dress material, furnishing fabric, fashion accessories (stole, scarves) etc. Silk saree having butis, buttas, kalghamotifs, turanj, bells, geometrical designs, floral & animal motifs, charkhana, doriya, khanjari, salaidar, mothra and jal are the common patterns produced constitutes Banaras silk sarees. Approximately, 90% of weaver work force in Varanasi Cluster belong to minority community.

Uttar Pradesh has achieved the capacity to produce 292 MT of raw silk/annum at the end of 2017-18. Of this, 233 MT accounts for mulberry silk and 59 MT for vanya silk. The state is one of the major consumers of silk in the country, and consumes about 3000-3500 MT of silk per annum.





Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	3866	4199	4212	4044
II	Mulberry raw silk (MT)				
	Bivoltine	87	91	97	110
	Crossbreed	99	109	114	123
	Total (I)	186	200	211	233
III	Vanya silk (MT)				
	Tasar	18	20	22	22
	Eri	32	36	36	37
	Vanya Total (II)	50	56	58	58
	Grand Total (I+II)	236	256	269	292

District-wise silk production during 2016-17

#	District	Raw Silk Production (MT)		
		Mulberry	Tasar	Eri
1	Kushinagar	21.69		
2	Deoria	7.88		
3	Ballia	5.29		
4	Azamgarh	0.18		
5	Mau	0.62		
6	Maharajganj	10.73		
7	Gorakhpur	10.28		
8	Basti	10.02		
9	Siddharth Nagar	1.07		
10	Gonda	15.82		
11	Balrampur	10.87		
12	Bahraich	16.51		
13	Shravasti	5.94		
14	Sultanpur	0.58		
15	Barabanki	1.05		
16	Lucknow	1		
17	Jaunpur	2.11		
18	Varanasi	1.2		
19	Ghazipur	6.07		
20	Sant Ravidas Nagar	0.66		
21	Mirzapur	0.57	0.8	

#	District	Raw Silk Production (MT)		
		Mulberry	Tasar	Eri
22	Unnao	1.57		1.17
23	Kanpur Nagar	1.01		7.93
24	Kanpur Dehat	0.38		7.46
25	Auraiya	5.53		
26	Etawah	3.51		
27	Mainpuri	0.82		
28	Agra	0.9		
29	Sitapur	6.01		
30	Lakhimpur Kheri	13.19		
31	Pilibhit	12.83		
32	Shahjahanpur	3.85		
33	Bareilly	2.52		
34	Rampur	0.65		
35	Budaun	0.19		
36	Moradabad	0.04		
37	Amroha	0.22		
38	Firozabad	1.15		
39	Mathura	1.06		
40	Meerut	3.01		
41	Shamli	1.21		
42	Bijnor	5.09		
43	Saharanpur	16.2		
44	Sonbhadra		11.3	
45	Chandauli		6.12	
46	Chitrakoot		0.3	3.4
47	Jhansi		1.46	
48	Lalitpur		0.57	
49	Fatehpur		0.86	5.56
50	Banda		0.12	3.53
51	Jalaun			3.8
52	Hamirpur			3.18
	Total	211	22	36

Schemes of Government of India

The State is supported with a total assistance of Rs.16.95 crore during past 5 years. Details of year-wise financial support extended to the state under CDP/CSS are presented here. Government of India has been providing support to Uttar Pradesh for the overall development of





Uttar Pradesh

sericulture through critical components covering seed, cocoon and post-cocoon sector. The thrust on bivoltine development through cluster approach and establishment of automatic reeling units is fulfilling the objectives under "Make in India".

Government of India has supported Uttar Pradesh under the Catalytic Development Programme (CDP), a centrally sponsored scheme, from IX Plan to XII Plan. The details of funds released by Central Silk Board to Uttar Pradesh for the implementation of CDP from IX Plan to XII Plan are as under:

(Rs. in lakh)

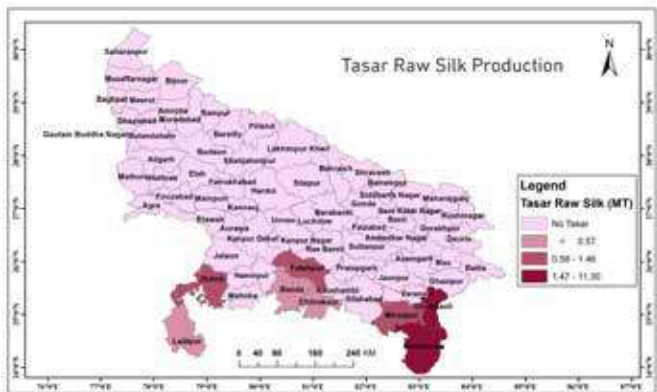
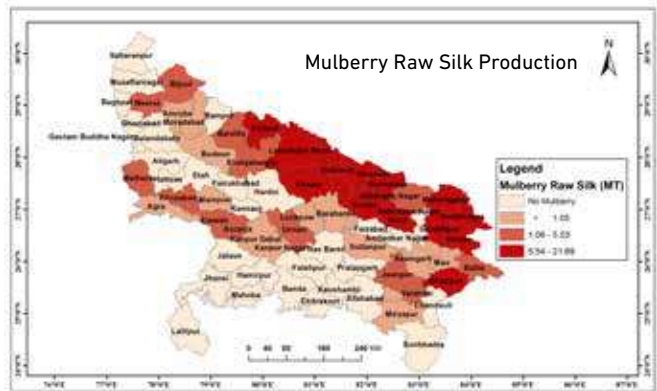
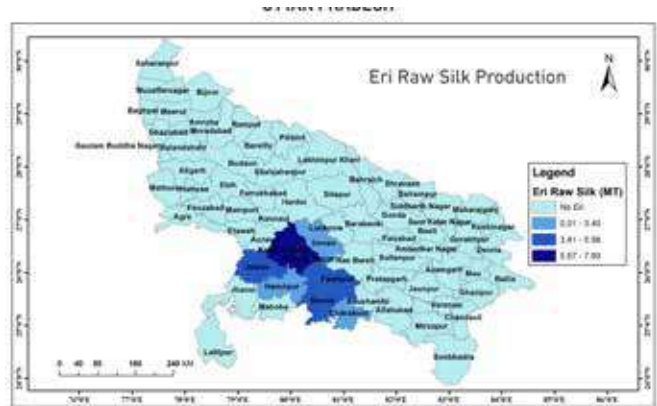
IX Plan (1997-2002)	X Plan (2002-2007)	XI Plan (2007-2012)	XII Plan (2012-2017)	Total
171.59	381.08	3104.62	2865.69	6522.9

Silk Samagra

With the discontinuation of CDP from 2014-15 onwards, the support for sericulture development continued as a central sector scheme, namely, Integrated Scheme for Development of Sericulture Industry (ISDSI), during 2015-16 & 2016-17. A comprehensive central sector scheme of Central Silk Board, namely, Silk Samagra, is under implementation from 2017-18 to 2019-20, for overall development of sericulture industry in the country. The interventions cover the major areas viz., (a) Development and expansion of host plant, (b) Strengthening and creation of silkworm seed multiplication infrastructure, (c) Development of farm and post-cocoon infrastructure, (d) Up-gradation of reeling and processing technologies in Silk, and (e) Capacity building through skill development/ Enterprise development programme. The details of assistance are as below:

(Rs.in lakh)

2015-16	2016-17	2017-18	2018-19
	ISDSI	Silk Samagra	
147.53	20.00	267.94	392.65 (2.52-General)





Convergence of RKVY & MGNREGA

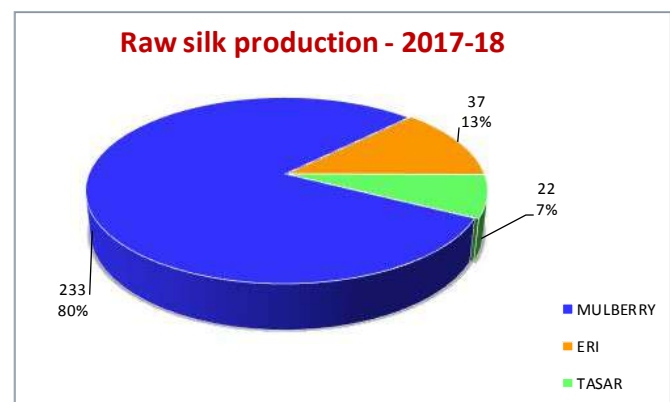
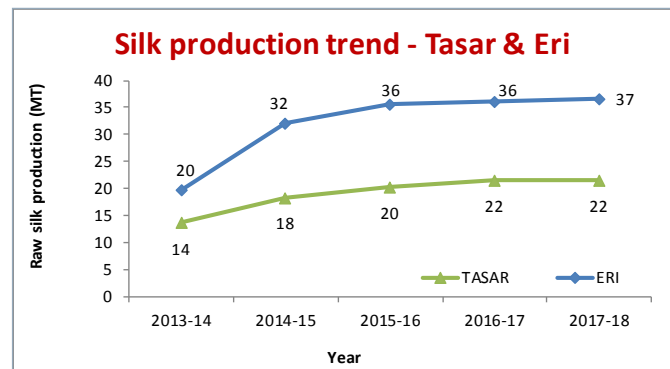
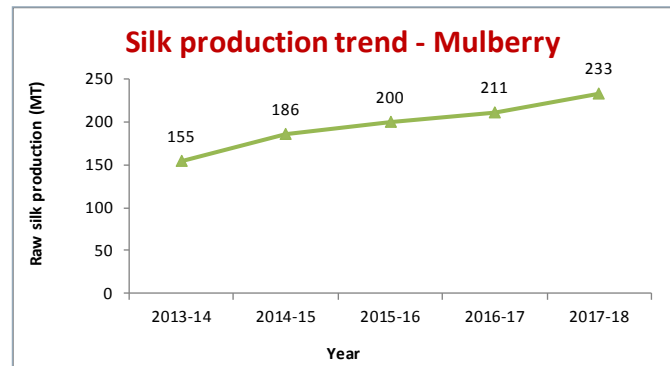
Year	RKVY (Rs. in lakh)		MGNREGA (Rs. in lakh)	
	Project sanctioned cost	Fund released	Project sanctioned cost	Fund released
2015-16	200.00	200.00	359.54	359.54
2016-17	1273.00	1139.00	31.54	19.54
2017-18	1198.00	524.34	307.47	34.99

State Plan scheme

The Textile Testing Laboratory (TTL) was established in Varanasi during 1996-97, in the premises of Indian Institute of Handloom Technology (IIHT), has been providing testing and quality assessment of various stakeholders like silk twisters, weavers, dyers and exporters.

TTL, Varanasi implemented CDP programme in the state covering establishment of 33 units of hot air dryer (100 kg capacity), 10 units of improved cottage basin/multi-end and 15 twisting units were installed; bivoltine incentive for 78.4 MT of bivoltine silk reeling provided, 318 spinning machine and 39 tasar reeling machine supported; 406 improved certified handlooms, improved jacquard support to 2860 existing looms, 20 shuttle-less looms, 163 units of Computer Aided Textile designing (CATD), 9 Common Facility Centres (CFCs), 11 units of tub dyeing, 3 units of arm dyeing and establishment of 2 cocoon bank/market support to mulberry and vanya sector.

The Ministry of Textiles, Government of India introduced a scheme for the protection of the interests of the consumers and other stake holders of the silk value-chain by bringing out *Silk Mark Scheme*. Under the scheme, more than 166 weavers/retailers /traders have been enrolled out of which, 100 members are only from Varanasi region. So far, more than 5.4 lakh of Silk Mark Labelled products have reached the market for the benefit of consumers in UP. To make the public aware about the Silk Mark, Central Silk Board has conducted more than 240 awareness programmes including road shows and organized 3 Silk Mark Expos in Lucknow.





Uttar Pradesh

Infrastructure under State and CSB for Post-cocoon sector sericulture development

#	Particulars	No.
A Mulberry		
	Sericulture districts	42
	State silk farms	160
	Area of farms [Acres]	1592.25
	Planted area [Acres]	1070.4
	Chawki rearing centres	160
	P1 centres	3 (Bahraich-Multivoltine, Balrampur and Saharanpur-Bivoltine)
	P2 centre	1-Shrawasti-Multivoltine
	Grainages	4 (Bahraich-10 lakh dfls capacity, Auraiya-3 lakh dfls, Gorakhpur-4 lakh dfls & Meerut-5 lakh dfls)
	Annual seed production capacity	22 lakh dfls
	Cold storage & incubation chamber	1 Nagrur, Bahraich
B Tasar		
	Districts	13
	Tasar state farms	63
	Area of farms	3656.62
	Grainage	9 (Sonbhadra-9, Chandauli-3 and Jhansi-1)
	Cocoon godown	2 (Sonbhadra & Jhansi)
	Cold storage	1 (Sonbhadra)
C Eri		
	Districts	5 (Kanpur Nagar-1, Kanpur Dehat-2, Hamirpur-1 and Jalaun-1)
	State farms	4
	Area of farms	17.24
	Grainage	4 (Kanpur Nagar-1, Kanpur Dehat-1, Fatehpur-1 and Unnao-1)

Man-power: Post sanctioned- 550, of which Post filled- 337 and Post lying vacant- 213.

At present, 15,000 handloom and 70,000 power loom units are working of which, 12,000 handlooms and 10,000 power loom units are working on silk in the cluster. In addition, there are hundreds of traders, dyers, designers, card-makers and ancillary support providers. Details of reeling units established:

1. V. K. Silk Udyog Ash 3/ 24, A-1 GilatBajar, Shivpur, Varanasi
2. Resham Keetpalan Evam Dhagakaran Audyogic Utpadan Sahkari Samiti Ltd., Garahaiya, Fazilnagar, Kushinagar
3. Banwasi Seva Ashram, Govindpur, Mayurpur, Sonbhadra

Infrastructural support of CSB

Name of Unit	NSP/ Plan	Nos.	Location	Function
Mulberry				
REC	Plan	1	Basti	Extension
REC	Plan	1	Bhadraasi	Extension
Tasar				
REC	Plan	1	Robertsganj	Extension
Eri				
REC	Plan	1	Fatehpur	Extension & seed production
TTL + Silk Mark + Eco Testing Lab	CSTRI	1	Varanasi	Silk testing & silk branding

Way forward

- Focus on integrated farming system to increase the income of stakeholders
- Strengthen marketing system for marketing of cocoons and post-cocoon sector
- Strengthen setting of improved ARMs & MRMs in mulberry sector & vanya reeling machines, like wet reeling machines, solar operated spinning machines, tasar reeling Machinery package, eri reeling packages under "Make in India" programme.
- Up-gradation of handlooms & fabric processing in convergence with NHDC.



Success story



Smt. Kalawati

W/o. Shri MotiLal
Village: Gajpatipur (Kothar)
Post: Tedwan (Basantapur)
District: Bahraich
Uttar Pradesh.

Smt. Kalawati (45 years) has been a traditional farmer, involved in sericulture since 1995 with one acre mulberry plantation, she harvests around 350 kg of CB/BV cocoons from close to 850 dfls and earns an average income of Rs.43,720 per year. She attributes increase in productivity to adoption of high yielding mulberry varieties like K2 and V1 and silkworm breeds like NB4D2 and SH6. She was supported her family in purchasing agricultural land, other basic amenities and construction of house with the income from sericulture.

“Sustained income from sericulture has given me lot of self-confidence besides, providing economic independence”.





UTTARAKHAND

 53,483sq. km.
  1,00,86,292
  79.63%

Introduction

Uttarakhand is the 27th state of India carved out from Uttar Pradesh in December, 2000 with Dehradun as the capital. The state is also known as the “Land of the Gods” divided into 13 districts with Official language Hindi. Major agricultural crops are paddy, wheat, sugarcane, maize, pulses and oilseeds, while, mango, litchi are the major fruits grown. Apart from horticulture and floriculture, medicinal and aromatic plants also grown in state's temperate zone.

Silk industry

Uttarakhand is unique in terms of practicing mulberry, oak tasar, eri and muga cultures. However, due to its quality bivoltine silk production, the state is referred as “Bowl of Bivoltine Silk”. The climate of the pocket in plains and Doon valley is congenial for sericulture with a temperature range of 4.5 to 40 °C and relative humidity between 26 and 95 %. Sericulture is practiced in all districts of the state except Champavat district.

Uttarakhand shares about 16% of raw silk produced in North-western states of India. In Uttarakhand, two crops (Spring and Monsoon/ Autumn) are practiced in mulberry. Spring is the major crop contributing season, 60% in total production. In tasar, one seed crop and two commercial crops are obtained. In eri, three crops and in muga, one crop is obtained per annum. Mulberry silk is practiced in Dehradun, Nainital, Udham Singh Nagar, Almora and Haridwar districts. Tasar is practiced in Rudraprayag, Dehradun and Pithoragarh districts. Eri in Udham Singh Nagar, Haldwani & Pauri and muga is practiced in Bageshwar and Nainital districts.

Silk production trends

Variety	2014-15	2015-16	2016-17	2017-18
Mulberry area (ha)	2774	2974	3029	3197
Mulberry raw silk production (MT)				
Bivoltine	29	30	31	33
Mulberry Total (I)	29	30	31	33
Vanya raw silk production (MT)				
Tasar	0.02		0.02	
Eri	0.23		3	2
Vanya Total (II)	0.25		3	2
Grand Total (I+II)	29	30	34	35

District-wise status of sericulture during 2017-18

#	District	Mulberry	
		Cocoon production (MT)	Raw silk production (MT)
1	Dehradun	141.86	18.91
2	Chamoli	15.28	2.09
3	Pauri	12.07	1.63
4	Rudraprayag	1.2	0.16
5	Tehri	3.96	0.52
6	Uttarkashi	3.1	0.42
7	Bageshwar	4.2	0.56
8	Almora	4.7	0.63
9	Nainital	4.02	0.54
10	Pithoragarh	3.9	0.53
11	US Nagar	26.1	3.56
12	Haridwar	25.2	3.45
	Total	246	33.18

Schemes of Government of India

Central Silk Board in association with the North Eastern Space Application Centre (NESAC), ISRO, Dept. of Space, Government of India, Shillong has taken up the Project on Application of Remote Sensing and GIS in sericulture development. In Uttarakhand, five districts viz., Dehradun, Pithoragarh, Nainital, US Nagar and Uttarkashi having



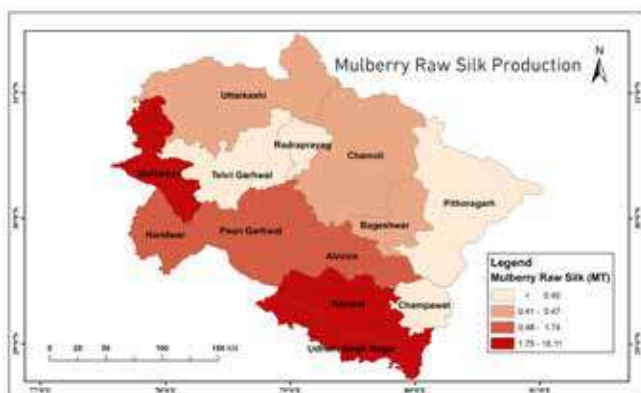
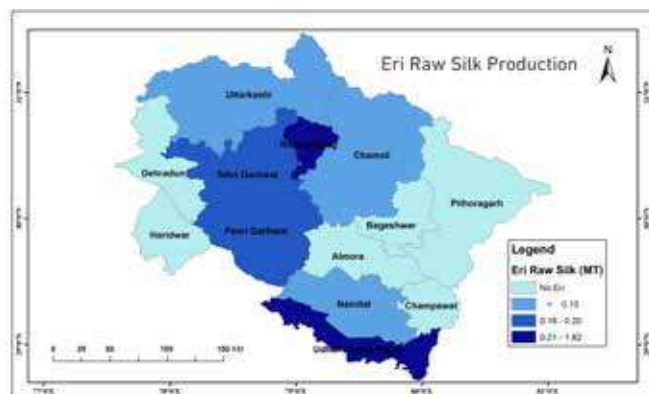


good potential and have been identified by NESAC. NESAC has also developed a network, Sericulture Information Linkage & Knowledge Systems (SILKS). DOS, Uttarakhand has utilized the benefit of the project for expansion of plantation in the identified districts.

CDP during XII Plan: Central share released, UC pending w.r.t. implementation of CDP components during first three years (2012-13 to 2014-15) in Uttarakhand is tabulated below:

(Rs. in lakh)

Fund release				
Years	2012-13	2013-14	2014-15	Total
Rev.	155.38	134.028	10.08	299.488
Cap.	338.72	632.29	311.15	1282.16



Silk Samagra

TSP project under Mulberry: "Intensive Bivoltine Sericulture Development Project" under Tribal Sub-Plan (TSP) is being implemented by DOS, Uttarakhand since 2016-17 in Bajpur Cluster of Udham Singh Nagar district.

TSP under Oak Tasar: DOS, Uttarakhand has submitted a mega project "Oak Tasar Development in Uttarakhand" under Tribal Sub-Plan (TSP) with total outlay of Rs.28.36 crore (Central Share - Rs.19.55 crore) for implementation during 2016-17 to 2019-20 in Dehradun, Bageshwar, Chamoli and Pithoragarh districts. Due to delay in release of funds and selection of implementing agencies, the project was launched in the month of June, 2018.

State Plan schemes

State is implementing "Empowerment of Scheduled Caste families through sericulture under Scheduled Caste Sub-Plan (SCSP)" project since 2016-17 with the financial support from Central Silk Board in Kotabagh-Ramnagar Cluster of Nainital district to assist 200 beneficiaries during 2016-17 and 140 beneficiaries during 2017-18. DOS, Uttarakhand is implementing project under Tribal Sub-Plan (TSP) both under mulberry and vanya sectors since 2016-17 to benefit Scheduled Tribes families with the support from Central Silk Board.

Convergence programmes

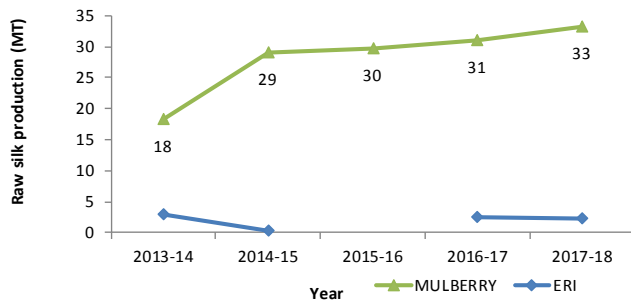
In view of limited fund availability under central sector scheme and to maintain close inter departmental linkages for effective implementation of developmental schemes, the Government of India emphasized the implementation of sericulture components by converging CSS programme with the developmental programmes of other departments/ministries like MORD, Agriculture etc. Accordingly, DOS, Uttarakhand has also availed the fund for sericulture development through various ministries of the Government of India under convergence programme viz., Special SGSY, MGNREGA, RKVY etc.



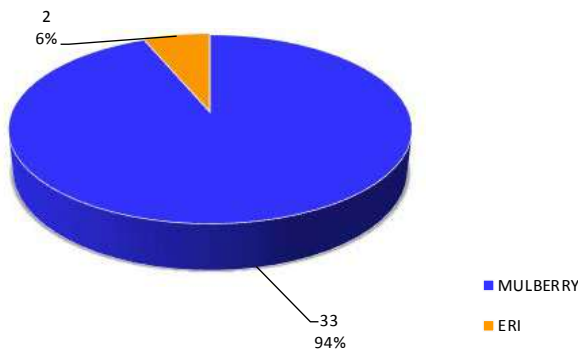


Uttarakhand

Silk production trend - Mulberry & Eri



Raw silk production - 2017-18



Infrastructure under state and Central Silk Board

Commercial seed production at state level was stopped from last decade in Uttarakhand and they became fully dependent on Central Silk Board in entire silkworm seed requirement. In order to become self sufficient to meet the requirement of silkworm seed at state level, initiatives had been taken both by DOS, Uttarakhand and Central Silk Board to start seed production at state level. Accordingly, the matter was discussed in the State Level Sericulture

Coordination Committee (SLSCC) and as per the decision taken in the meeting, DOS, Uttarakhand has formulated proposal under Central Sector Scheme for construction of Grainage Building and Cold Storage Plan during the year 2016-17 with a capacity to produce 10 lakh dfls per annum. Central Silk Board has provided financial assistance of Rs.3.73 crore for construction of grainage building and cold storage plant and revolving capital support of Rs.15 lakh. The construction of grainage building is under progress and is expected to start the grainage activities soon. The present dfls consumption of Uttarakhand is around 6 lakh dfls per annum. After construction of grainage building, the state will become self-sufficient to meet the entire requirement of silkworm seed.

Post-cocoon sector

Uttaranchal Cooperative Resham Federation (UCRF) is playing an important role in marketing of the cocoons and Silk Park provides the facilities of silk exchange, silk testing, training, consultancy, storing etc. to the entrepreneurs. Presently about 60-70% cocoons are consumed within the state. Uttarakhand has seven cocoon markets for disposal of cocoons and to ensure competitive price to the rearers in the state, 7 MRM, 1 Cottage Basin, 2 twisting units, 1 each of yarn and fabric dyeing units, 239 handlooms, 5 hot air dryers and 1 silk park is functioning.

Way forward

- Regular re-look on fixing of the cocoon price based on the production cost and to improve marketing system allowing more players and also local conversion by installing ARM.
- Focus on creation of seed production requirements to reduce dependency on outside agencies.





Success Story



Smt. Pushpa Devi,

W/o Shri Mahavir Singh Khandari,
Age 36 years, Village: Kurchola,
Block: Jakholi,
District: Rudraprayag,
Uttarakhand.

In 2010, with the sudden demise of her husband, Smt. Pushpa Devi (36) was faced with the difficult task of single handedly raising her two children and to provide for their education. With no employable skill, she was forced to move from place to place in search of odd jobs. Post the June'2013 disaster at Kedarnath; AT India established a weaving and training centre at Ganganagar- Agastmuni block with the objective of providing livelihood opportunities to the disaster affected families. In knowing the plight of Smt. Khandari, AT India contacted her to receive training and progressively start weaving. Smt. Khandari was reluctant to join the weaving centre as she would have to undergo a 3-6 months training for which she would not receive any remuneration.

She was in dilemma as to how she would feed her children during these 3-6 months. During this period, AT India decided to provide a stipend for a period of one year to new weavers who were undergoing training under the Christian Aid supported programme In Rudraprayag. With this assistance Smt. Khandari joined the Ganganagar Weaving Center and underwent extensive training on all aspects of weaving. Being, extremely dedicated and focused on her work, Smt. Khandari needed only 6 months to be declared as a trained weaver. As of today, Smt. Khandari earns an average of Rs.3,500 per month whilst also doing all her family duties. With the income earned from her weaving, her two children- 15 year old daughter and 13 year old son have both resumed their education at Agastmuni.

“Having lost my husband and with no employable skill but with dedication and focus in weaving, I am able to educate my children well and settle in life”





WEST BENGAL

 88,752sq. km.
  9,12,76,115
  76.26%

Introduction

West Bengal, stretching from the Himalayas in the North to the Bay of Bengal in the South and includes Darjeeling Himalayan hill region, Ganges delta, Rarh region and coastal Sunderban. The capital of the state is Kolkata, third-largest urban agglomeration and third-largest city in India. The state's cultural heritage, besides, varied folk traditions includes authors in literature, such as Nobel laureate Rabindranath Tagore.

Baluchari Sarees



Baluchari sarees or locally called Baluchuri silk is the traditional silk sarees of West Bengal. These sarees have depictions from scenes of Mahabharat and Ramayana. Usually, had a square design in the *pallu* with paisley motifs in them and depicted scenes from the lives of the *Nawab of Bengal* featuring women smoking hookahs, nawabs driving horse carriages, etc.

The state divided into 5 divisions with 23 districts. The Malda division consists of Malda, Uttar Dinajpur, Dakshin Dinajpur and Murshidabad. The Burdwan division consists of Birbhum, Hooghly, Paschim Bardhaman and Purba Bardhaman. The Jalpaiguri division consists of Alipurduar, Cooch Behar, Darjeeling, Jalpaiguri and Kalimpong. The Presidency division consists of Howrah, Kolkata, Nadia, North 24 Parganas and South 24 Parganas. The Medinipur division consists of Bankura, Jhargram, Purulia, Purba Medinipur and Paschim Medinipur.

Status of silk industry

Sericulture, an agro-based cottage industry, is an important rural avocation in West Bengal providing employment and livelihood to more than 1.2 lakh families, because of its relatively low requirement of fixed capital and higher returns at regular intervals. It also helps in shaping the economic status of tribal population especially, in case of semi-domesticated rearing in non-mulberry sector. The immense potentiality of sericulture in reconstructing rural economy and its labour intensive nature necessitated creation of a separate Directorate way back in 1975. At present, there are 65 farms, 16 egg production centres (grainages) and 59 technical service centres in mulberry, tasar, eri and muga sector throughout the state under Directorate of Textiles (Sericulture) to serve the sericulturists. The state has recorded a steady increase in the production of mulberry raw silk from 1090 MT in 1995-96 to 2540 MT in 2017-18. West Bengal is a traditional state of sericulture with all the 4 commercially exploited varieties of silk *i.e.*, mulberry, tasar, eri and muga of which mulberry and eri silkworm are domestic and tasar and muga are wild. Each of these silkworm species feeds on leaves of specific food plants as shown in the table below:



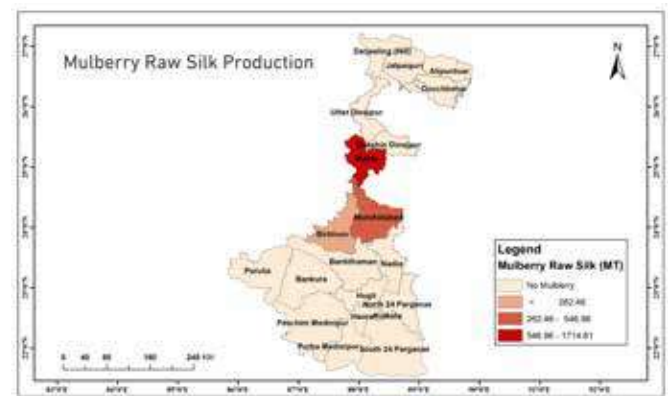
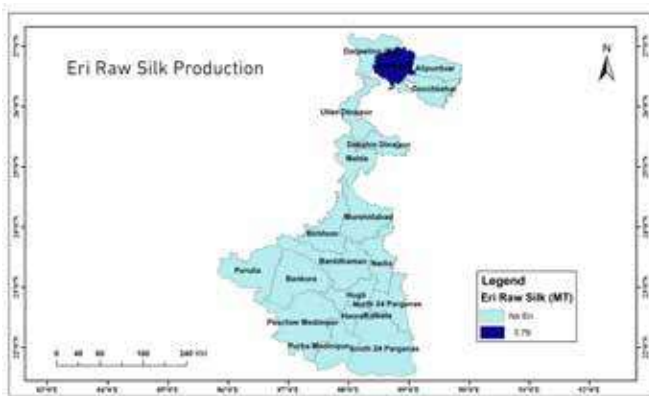
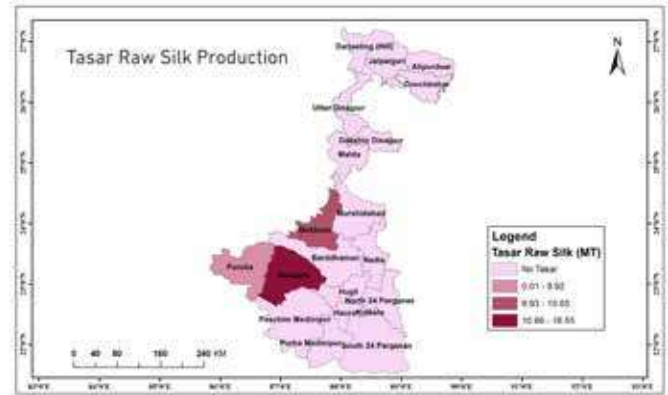
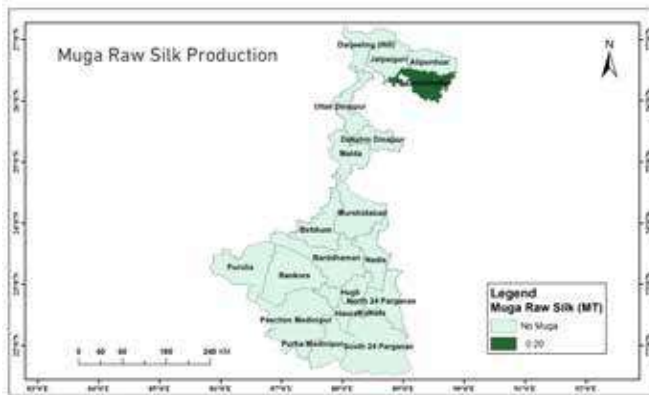


Type of silk	Name of the host plant	Distribution
Mulberry	Mulberry	Throughout the state except Howrah and East Midnapore district.
Tasar	Arjun, Asan & Sal	Bankura, Purulia, Birbhum, Paschim Midnapore & Part of Burdwan.
Eri	Castor	Jalpaiguri, D. Dinajpur, 24 PGs (W&S)
Muga	Som & Soalu	Cooch Behar, Jalpaiguri & Darjeeling

Presently, the state has 16,480 hectares mulberry plantation, 7,180 hectares of tasar food plantation, 816 hectares of eri food plantation and 644 hectares of muga food plantations involving around 1,20,860 sericulturists, 24,000 reelers and 31,088 weavers in 2,910 villages.

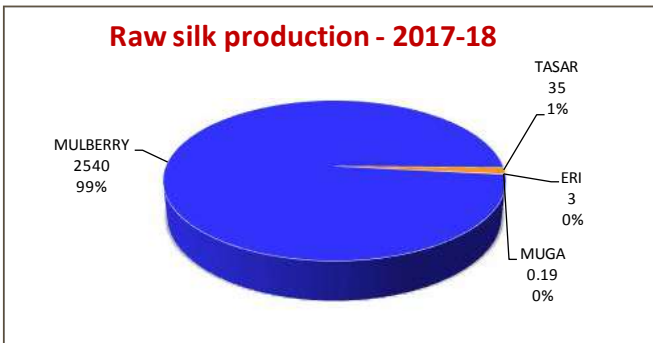
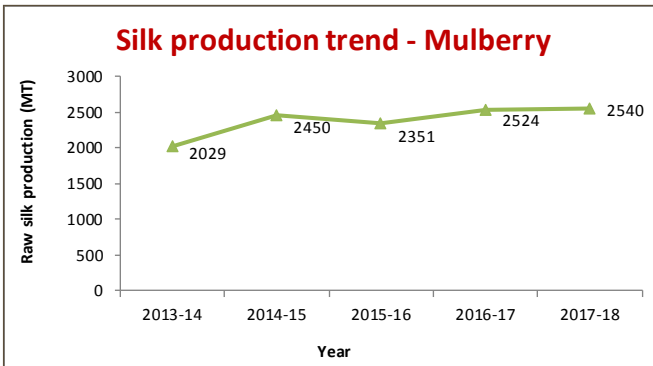
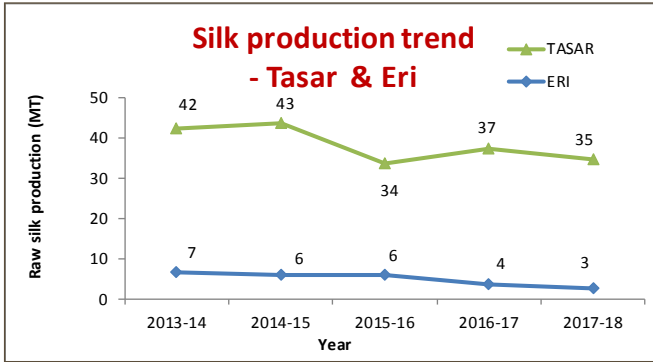
Silk production trends

#	Variety	2014-15	2015-16	2016-17	2017-18
I	Mulberry plantation (ha)	15153	15500	15990	16480
II	Mulberry raw silk (MT)				
	Bivoltine	27	31	38	36
	Crossbreed/ICB/MV	2423	2320	2486	2504
	Total (I)	2450	2351	2524	2540
III	Vanya silk (MT)				
	Tasar	43.5	33.50	37.12	34.50
	Eri	6.02	6.05	3.79	2.60
	Muga	0.27	0.21	0.20	0.19
	Total (II)	50	40	41	37
	Grand Total (I+II)	2500	2391	2565	2577





West Bengal



District-wise silk production during 2016-17

#	District	Mulberry	Tasar	Eri	Muga
1	Darjeeling (Hill)				
2	Kalimpong Sub Division				
3	Darjeeling (Plain)				
4	Jalpaiguri			3.79	
5	Coochbehar				0.2
6	Uttar Dinajpur				
7	Dakshin Dinajpur				
8	Malda	1714.62			
9	Murshidabad	546.96			
10	Birbhum	262.46	10.65		
11	Nadia				
12	24-Parganas (North & South)				
13	Midnapur (Purba & Pachim)				
14	Bankura		16.55		
15	Purulia		9.92		
16	Burdwan				
17	Hooghly				
18	Howrah				
19	Jhargram				
20	Kolkata				
21	Paschim (West) Burdwan (Bardhaman)				
22	Purba Burdwan (Bardhaman)				
23	Surajpur				
24	Surguja				
	Total	2524	37.12	4	0.2

Schemes of Government of India

A Tasar Sub Plan (TSP) project is being implemented in Bankura district since October, 2016 covering Raipur, Khatra and Hirbandh blocks to provide the livelihood to the poor tribal people of the area. Mahila Kisan Sashaktikaran Pariyojana (MKSP) is implemented in West Bengal from 2013-14 to 2016-





17 (continuing in 2017-18) in Binpur block-II (West Medinipur dist.) and Ranibandh block (Bankura dist.) by PRADAN, an implementing agency with close co-ordination from Department of Sericulture, Central Silk Board and WBSRLM. The total project cost is Rs.617.26 lakh will be shared by MORD (Rs.400.40 lakh) and Central Silk Board (Rs.133.60 lakh) and beneficiary (Rs.83.26 lakh) in the ratio of 64.9:21.6:13.5 in order to empower tribal women groups engaged in tasar culture. Under this project, 30 nursery farmers, 40 nucleus seed rearers, 155 basic seed rearers, 39 private graineurs and 1236 commercial rearers will be covered. It is also proposed to establish one basic seed production centres and 4 rearers' collectives. With this investment, it is proposed to raise 130 ha of tasar food plants, 805 ha of natural host flora would be regenerated, 0.5 lakh dfls of basic seed and 4.25 lakh dfls of commercial seed to be produced which will help in production of 267 lakh of reeling cocoons during the project period. Finally, an estimated 21,360 kg of tasar raw silk would be produced under this project. The project will nurture and promote 37 nos. of community resource persons for future expansion programmes. The progress reported by the PRADAN under MKSP during the last 2 years is as below:

Year	No. of commercial rearers	Area covered (ha)	Tasar dfls brushed (lakh No.)	Reeling cocoon production (No.)	Income from sale of cocoons (Rs.)
2016-17	1,386	-	1,89,000	82,98,700	2,15,76,620
2017-18	1,594	NA	3,00,651	1,20,51,774	2,88,57,141

Silk Samagra

State has not yet availed support from Silk Samagra scheme.

State plan schemes and convergence programmes

West Bengal was primarily producing Nistari cocoons but gradually transformed to brushing of improved crossbreed cocoons. Of late, the state is geared-up to produce bivoltine cocoons by brushing SK6xSK7 hybrid and production of bivoltine raw silk has reached 34.95 MT during the year 2017-18 from a meagre 3.69 MT produced in 2011-12.

(Rs. In lakh)

#	Particulars	Funds spent/allocated during								Funds allocated/sanctioned for 2018-19
		2014-15		2015-16		2016-17		2017-18		
		Project sanctioned	Fund released	Project sanctioned	Fund released	Project sanctioned	Fund released	Project sanctioned	Fund released	
A	State Plan									
1	Plan	32.18	29.77	33.78	32.09	28.89	26.08	26.89	21.73	32
2	Non-Plan	80.81	80.54	72.42	72.42	75.62	75.62	76.8	76.21	73.33
B	Convergence programmes	2.96	2.96	6.76	6.76	2.24	1.63	1.47	0.57	-
	Grand Total (A+B)	115.95	113.27	112.96	111.27	106.75	103.33	105.16	98.51	105.33

Infrastructure under State and Central Silk Board

Mulberry sector	
Mulberry nurseries	65
P2 seed farms	8

Government grainages	22
Technical service centre/PPC	59
Chawki rearing centre	110
Grainage-tasar	11
Grainage- eri	3
Grainage-muga	4





West Bengal

Post-cocoon sector

Mulberry sector		Tasar sector	
Cocoon markets	12	Reeling/twisting machines	224
Silk twisting spindle	118	Spinning wheel	201
Handloom	Mulberry 6760	Matka	876
	Tasar 956	Takli	1161
	Eri 48		
	Muga 04	Eri sector	
Powerloom	128	Takli	436
Reel. co-op. societies	32	Spinning wheel	264
Cottage basin	319	Ambar charka	47
Ghosh machine	2852	Muga sector	
Charka	5200	Reeling/twisting machines	30
Multi-end	28	Takli	35

Marketing

At present, 10 cocoon markets are available in West Bengal for marketing of silk commodities in mulberry sector and one cocoon market at Khatra in tasar sector.

Way forward

- Focus on deployment of Village Level Resource Personnel (VLRP) and engagement of SHGs & NGOs for continuous up-gradation of knowledge and skill development among the stake holders and building sustainable linkages.
- Refurbishing the glory of Murshidabad silk with Baluchari design with *Silk Park* at Malda and by integrating efforts with other agencies like WBIDC through developing *Silk Printing Park* at Serampore, etc.
- Co-ordinated and concerted efforts for development of tasar sector in the Jungle Mahal of the state under in collaboration with Central Silk Board, West Bengal SRLM & TDF.

Success story



Shri Mohima Ranjan Mondal

Village: Thengapur

District: Birbhum

West Bengal

Shri Mohima Ranjan Mondal used to depend on traditional agriculture practices as the only source of earning. His meagre qualification and poor skill were the main impediments. He gave emphasis on cultivation of paddy, oil-seed. His other family members put efforts to rear cows, hens and ducks as an alternative source of earning.

A departmental seminar in his village was the eye opener. He adopted sericulture due to easy indoor rearing process and low input cost. Initially, he insisted upon hardy silkworm race, *Nistari*. Gradually, he adopted rearing of high yielding cross breed and bivoltine rearing and HYV mulberry cultivation. As he passed through the farmers' training programme and exposure visit to other state, he acquired a professional mindset to raise successful crops. Now, he constructed rearing house with necessary amenities and a silk reeling unit under CDP. He owns 1 acre good mulberry garden and 3 acre other cultivable land. His total annual income has augmented to Rs.3.6 lakh, out of which, sericulture contributes Rs.1.65 lakh. Directorate of Textiles (Sericulture), West Bengal appreciates his consistent effort for successful sericulture crops and his average production recorded as 34 kg multivoltine x multivoltine cocoons and 45 kg multi x bivoltine cocoons from 100 dfls, respectively.

“High yielding varieties are added advantages to get successful crops ultimately gives profit to support my family economically”



ANNEXURES

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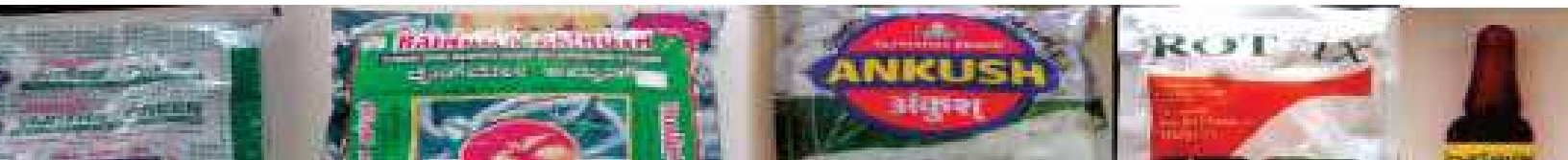
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DISINFECTION MASK SUPPLIERS

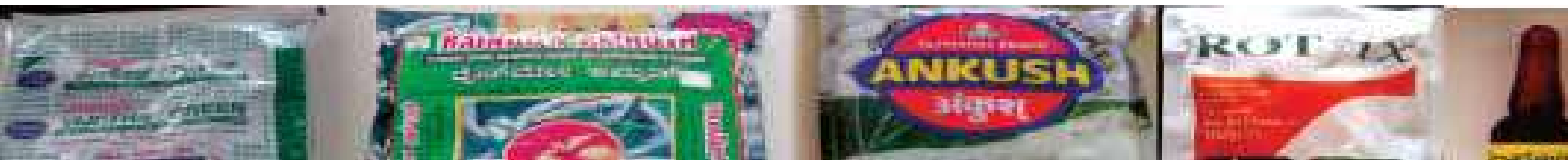
#	Name of the Firm	#	Name of the Firm
1	M/s. 3M India Limited Concord Block, UB City No.24 Vittal Mallya Road Bengaluru - 560 001 KARNATAKA Ph: 080- 22231414	2	M/s. Eagle Electricals Krishna Complex, M.G. Road Kodialbail Mangaluru - 575 003 KARNATAKA Ph: 0824-22224759
3	M/s. Tata Engineers # 1168/J,18th C Main Vatal Nagaraj Road, 5th Block Rajajinagar, Bengaluru - 560 010 KARNATAKA Ph: 080-2340 8317/23408318	4	M/s. Mysuru Pure Chemicals # 121A, Kantheraj Urs Road Ashoka Circle Mysuru - 570 004 KARNATAKA Ph: 0821-4241610
5	M/S. Vignesh Gears S.F.No.346/1A, Ondipudur Road Gandhi Nagar, Irugur Coimbatore- 641103 TAMIL NADU Ph: 0422- 6536559/2632339	6	M/s. Alfa Instruments QP-56, Maurya Enclave Pitampura NEW DELHI -110 088 Ph: 011-2732 1151
7	M/s. SKB System SF 230, Kamarajar Road Janatha Nagar, West Sivanandhapuram Saravanampatti Post Coimbatore - 641 035 TAMIL NADU Ph: 0422 - 2668299/2669999	8	M/S. Annisaroo Precision Industries # 120, KMM Matriculation School Road Gandhi Nagar Irugur Coimbatore- 641103 TAMIL NADU Ph: 0422-6540136/6505878
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13	M/s. Kendriya Bhandar Community Centre CPWD Quarters, Domlur Bengaluru - 560 071 KARNATAKA Ph: 080-25350333 Fax: 25352964	14	M/s. National Co-operative Consumers Federation of India Ltd. # 19, Rathan's Mansion 8th Main, 3rd Cross, Vasanthanagar Bangaluru - 560 052 KARNATAKA Ph. 080-22262634, Fax: 080 22254310



#	Name of the Firm	#	Name of the Firm
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HUMIDIFIER SUPPLIERS

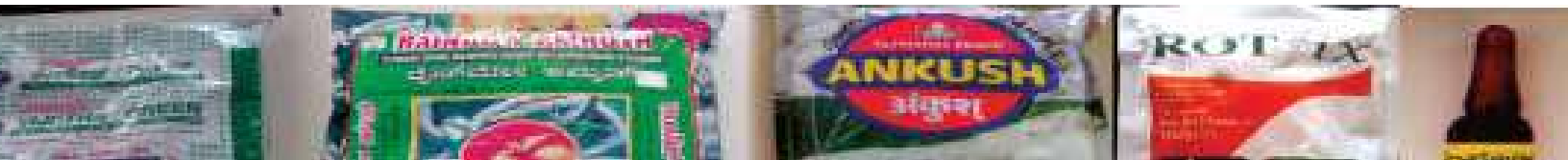
#	Name of the Firm	#	Name of the Firm
1	M/s. System Engineering # 40/1, Opp. Rapsri Industries Gowdanapalya, Subramanyapura Main Road Bengaluru-560 061 KARNATAKA Telefax: 080-26390957	2	M/s. Thermocon Instruments (P) Ltd. # 872, HAL, 3 rd Stage (Opp. BEML Gate) Bengaluru - 560 075 KARNATAKA Telefax: 080- 25281578/25285951
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9	M/s. Supreet Electrical Industries # 56, Burial Ground Road Near St. Anthony's Church Uttarahalli, Bengaluru - 560 001 KARNATAKA Ph: 080-22723411 Mob: 9844089097	10	M/s. National Co-operative Consumers Federation of India Ltd. No.19, Rathan's Mansion 8 th Main, 3 rd Cross, Vasanthanagar Bengaluru - 560 052 KARNATAKA Ph: 22262634 Fax: 080 22254310



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11	M/s. Kendriya Bhandar Community Centre C.P.W.D. Quarters Domlur Bengaluru - 560 071 KARNATAKA Ph: 25350333 Fax: 25352964	12	M/s. Humidifier Company, D.No.69/1, Kamarajar Street Janatha Nagar West Saravanampatti (Post) Coimbatore - 641 035 TAMIL NADU Mob: 08046084074

ROOM HEATER SUPPLIERS

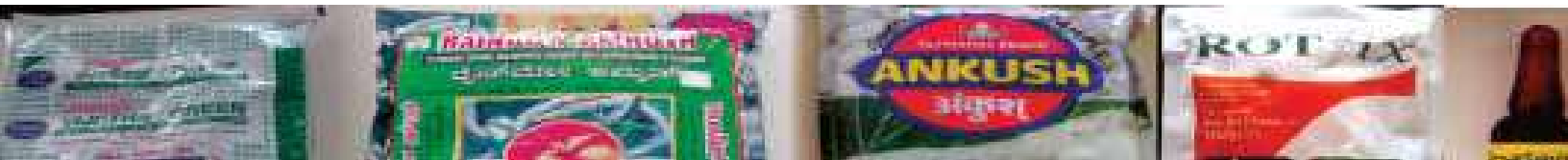
#	Name of the Firm	#	Name of the Firm
1	M/s. System Engineering # 40/1, Opp. Rapsri Industries Gowdanapalya Subramanyapura Main Road Bengaluru - 560 061 KARNATAKA Telefax: 080-26390957	2	M/s. Thermocon Instruments (P) Ltd. # 872, HAL, 3 rd Stage, (Opp. BEML Gate) Bengaluru - 560 075 KARNATAKA Ph: 2528 5951 Telefax: 080-2528 1578
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PLASTIC COLLAPSIBLE MOUNTAGE SUPPLIERS

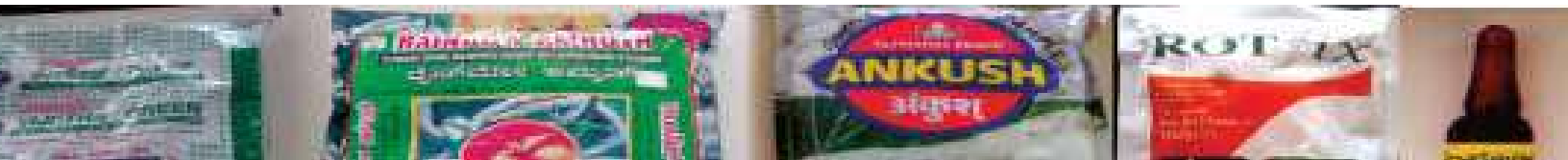
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1	M/s. Nilkamal Limited Mumbai # 201, II Floor Soundarya Paramount, 5 th Cross Malleshwaram Bengaluru - 560 003 KARNATAKA Ph: 080-23314879 FAX: 23316046	2	M/s. Eco Packaging Net Plot No.40, Amar Nagar MIDC Hingna Nagpur-440 016 MAHARASHTRA Ph: 09373801177
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7	M/s. SKB System SF 230, Kamarajar Road Janatha Nagar West Sivanandhapuram Saravanampatti Post Coimbatore - 641 035 TAMIL NADU Ph: 0422 - 2668299 / 2669999	8	M/s. Cooling Solutions Agarwal Lodge Building Modi No.3, Sitabuldl Nagpu - 440 012 MAHARASHTRA Ph: 0712-2522021 / 2520922 Mob: 09850568143
9	M/s. Akka Plastics # C-11/51/1 Krishna Industrial Estate Gorwa, Vadodara - 390 016 GUJARAT	10	M/s. Sailon India, # C-19/87, Krishna Industrial Estate Gorwa, Vadodara -390 016 GUJARAT Ph: 08265-220982



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13	M/s. Kendriya Bhandar Community Centre C.P.W.D. Quarters Domlur, Bengaluru - 560 071 KARNATAKA Ph: 080-25350333 Fax: 25352964		

PLASTIC TRAY SUPPLIERS

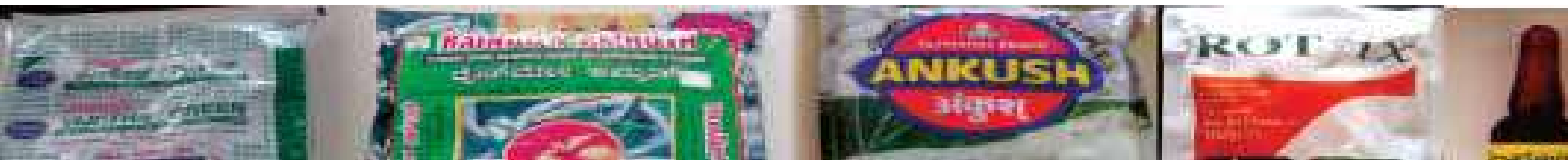
#	Name of the Firm	#	Name of the Firm
1	M/s. Nilkamal Limited, Mumbai # 201, II Floor Soundarya Paramount, 5 th Cross Malleshwaram Bengaluru - 560 003 KARNATAKA Ph : 23314879 Fax : 23316046	2	M/s. Maruthi Plastics I Floor, Bhavabthi Towers Bhavanthi Streets Mangaluru KARNATAKA
3	M/s. G.A.G. Trading Company # 21/1, Kumbarpet Main Road Bengaluru - 560 002 KARNATAKA Ph: 080-22239932 09341225640	4	M/s. Sailon India # C-19/87, Krishna Industrial Estate, Gorwa, Vadodara - 390 016 GUJARAT Ph: 918265 220982
5	M/S. Associated Engineers F-2, Top Class Enclave, I Floor Bhoidapada, Gokhivari Sativali Road, Vasai (East) , Thane - 401 208, Mumbai MAHARASHTRA	6	M/s. Supreme Industries Limited # 24, Pamadi Towers II Floor, # 19, I Main Road, Gandhinagar Bengaluru - 560 009 KARNATAKA
7	The Supreme Industries Limited S-17, Sipani Building, 6 th Floor New Market, Chatribari Road Guwahati ASSAM Ph: 0361-2731487	8	M/s. Times Technologies 3 rd Floor, Apollo Tower, Gaarali, Jorhat ASSAM Ph: 09435090099



#	Name of the Firm	#	Name of the Firm
9	M/s.Pavan Agritech Solutions # 1, Haralur, Nagenahalli Mallur Post, Devanahalli Taluk Bengaluru Rural Dist. KARNATAKA Mob: 9449979622	10	M/s. Eco Packaging Net Plot No.40, Amarnagar, MIDC Hingna, Nagpur - 440 016 MAHARASHTRA Mob: 09373801177
11	M/s. Pooja Associates Prasanti Path, #1 Beltola Road Guwahati - 781 028, ASSAM Mob: 8753928969	12	M/s. Ankush Agarwal Planet Poly Plast, # 247 Camal Road, Dharamapeth Nagpur - 440 010, MAHARASHTRA Mob : 09370020026
13	M/s. M. Tech Industries M-Tech House, Diamond Ind. Estate, Walive, Vasai - 401 208, Thane, Mumbai MAHARASHTRA	14	M/S. Akka Plastics # C-11/51/1, Krishna Industrial Estate Gorwa, Vadodara-390 016 GUJARAT
15	M/s. Pragathi Marketing Services # 398/1 Floor, I Stage, III Phase West of Chord Road, Opp: Power House Bengaluru - 560 010 KARNATAKA Ph: 080-23401130	16	M/s. Bukharies Enterprises Avqaft Building, Budshah Chowk Srinagar - 191 001

COCOON PRESERVATION/REARING STAND SUPPLIERS

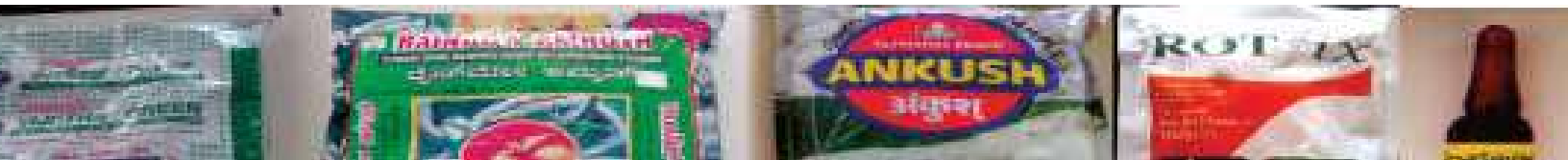
#	Name of the Firm	#	Name of the Firm
1	M/s. System Engineering # 40/1, Opp. Rapsri Industries Gowdanapalya, Subramanyapura Main Road Bengaluru - 560 061 KARNATAKA Telefax- 080-26390957	2	M/s. Thermocon Instruments (P) Ltd. # 872, HAL, 3 rd stage (Opp. BEML Gate) Bengaluru - 560 075 KARNATAKA Telefax : 080- 2528 1578/2528 5951
3	M/s. Tata Engineers # 1168/J18th C Main, Vatal Nagaraj Road, 5 th Block Rajajinagar, Bengaluru - 560 010 KARNATAKA Ph: 080-2340 8317/23408318	4	M/s. Anupam Fabs # 235 B, 5 th Main Road 4 th Stage, West of Chord Road Industrial Town, Rajajinagar Bengaluru - 560 044, KARNATAKA Mob: 98450 23170
5	M/S. Vignesh Gears S.F.No.346/1A, Ondipudur Road Gandhi Nagar, Irugur Coimbatore - 641 103 TAMIL NADU Ph: 0422-6536559/2632339	6	M/s. Alfa Instruments QP-56, Maurya Enclave Pitampura NEW DELHI -110 088 Ph: 011-2732 1151



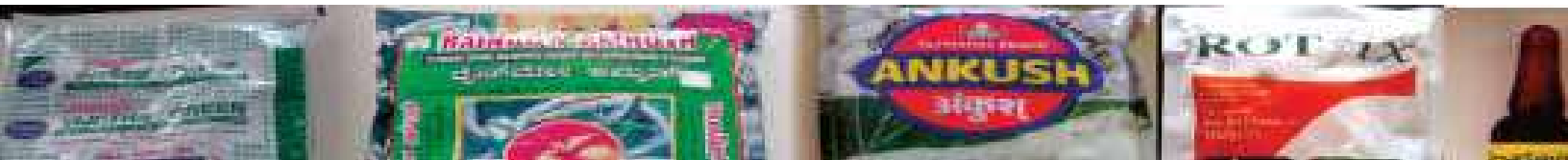
#	Name of the Firm	#	Name of the Firm
7	M/s. SKB System SF 230, Kamarajar Road Janatha Nagar West Sivanandhapuram Saravanampatti Post Coimbatore - 641 035 TAMIL NADU Ph: 0422- 2668299,2669999	8	M/s. Annisaroo Precision Industries # 120, KMM Matriculation School Road, Gandhi Nagar, Irugur Coimbatore - 641 103 TAMIL NADU Ph: 0422- 6540136,6505878
9	M/s. Supreet Electrical Industries No: 56, Burial Ground Road Near St. Anthony's Church Uttarahalli, Bengaluru - 560 001 KARNATAKA Ph: 080-22723411 Mob: 9844089097	10	M/s. National Co-operative Consumers Federation of India Ltd. # 19,Rathan's Mansion, 8 th Main, 3 rd Cross, Vasanthanagar Bengaluru - 560 052 KARNATAKA Ph: 080- 22262634 Fax: 080-22254310
11	M/s. Concept Components # 18,8 th Main Road Yadavagiri, Mysuru - 570 020 KARNATAKA	12	M/s. Humidifier Company # 69/1, Kamarajar Street Janatha Nagar West Saravanampatti (Post) Coimbatore - 641 035 TAMIL NADU
13	M/s.Kendriya Bhandar Community Centre, C.P.W.D. Quarters, Domlur Bengaluru - 560 071 KARNATAKA Ph: 080-25350333 Fax:25352964		

ACID TREATMENT BATH SUPPLIERS

#	Name of the Firm	#	Name of the Firm
1	M/s. S.R. Scientific & Services # 44, 5 th Cross, I Block Kar Mobilers Road, Peenya Bengaluru-560 058 KARNATAKA Telefax: 97423 13007/ Mob : 99006 45505	2	M/s. Thermocon Instruments (P) Ltd. # 872, HAL, 3 rd stage (Opp. BEML Gate) Bengaluru - 560 075 KARNATAKA Telefax : 080- 2528 1578/ 2528 5951

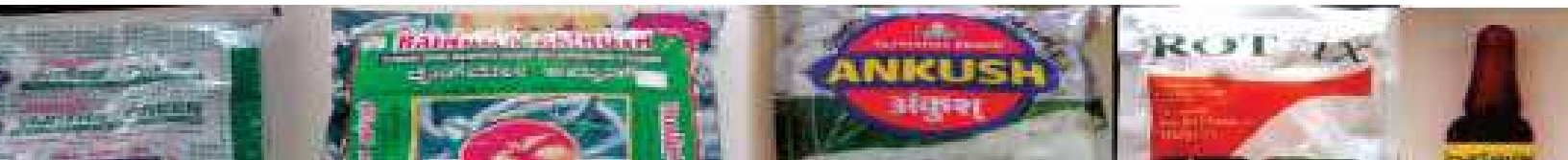


#	Name of the Firm	#	Name of the Firm
3	M/s. Tata Engineers # 1168/J,18 th C Main Vatal Nagaraj Road 5 th Block, Rajajinagar Bengaluru - 560 010 KARNATAKA Ph: 080-2340 8317/23408318	4	M/s. Anupam Fabs # 235 B, 5 th Main Road 4 th Stage, West of Chord Road Industrial Town, Rajajinagar Bengaluru - 560 044 KARNATAKA Mob: 98450 23170
5	M/s. Vignesh Gears S.F.No.346/1A, Ondipudur Road Gandhi Nagar, Irugur Coimbatore - 641 103 TAMIL NADU Ph: 0422 6536559/2632339	6	M/s Alfa Instruments QP-56, Maurya Enclave Pitam Pura NEW DELHI - 110 088 Ph: 011-2732 1151
7	M/s. SKB System SF 230, Kamarajar Road Janatha Nagar West Sivanandhapuram Saravanampatti Post Coimbatore - 641 035 TAMIL NADU Ph: 0422 - 2668299 / 2669999	8	M/s. Annisaroo Precision Industries # 120, KMM Matriculation School Road, Gandhi Nagar, Irugur Coimbatore - 641 103 TAMIL NADU Ph: 0422 - 6540136 / 6505878
9	M/s. Supreet Electrical Industries, # 56, Burial Ground Road Near St. Anthony's Church Uttarahalli Bengaluru - 560 001 KARNATAKA Ph: 080-22723411 Mob:9844089097	10	M/s. National Co-operative Consumers Federation of India Ltd. # 19,Rathan's Mansion, 8 th Main 3 rd Cross, Vasanthanagar Bengaluru - 560 052 KARNATAKA Ph:080-22262634 Fax: 080 22254310
11	M/s.Kendriya Bhandar Community Centre C.P.W.D. Quarters, Domlur Bengaluru - 560 071 KARNATAKA Ph:080-25350333 Fax:25352964	12	M/s. Humidifier Company D.No.69/1, Kamarajar Street Janatha Nagar West Saravanampatti (Post) Coimbatore - 641 035 TAMIL NADU



PLASTIC TRAYS/COLLAPSIBLE MOUNTAGE SUPPLIERS

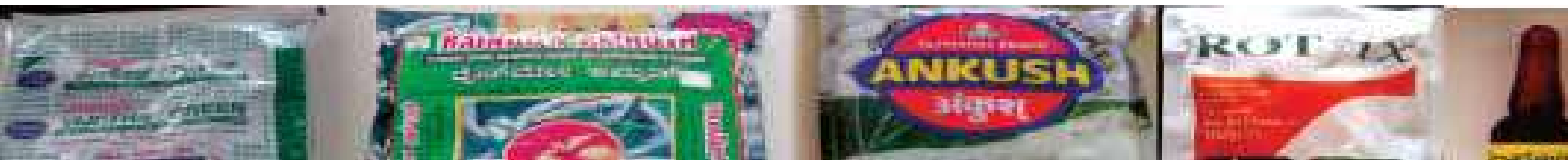
#	Name of the Firm	#	Name of the Firm
1	M/s. Nilkamal Limited, Mumbai # 201, II floor, Soundarya Paramount, 5 th Cross Malleshwaram Bengaluru - 560 003 KARNATAKA Ph: 080-23314879 Fax : 23316046	2	M/s. Maruthi Plastics I Floor, Bhavabthi Towers Bhavanthi Streets Mangaluru KARNATAKA
3	M/s. Serind (India) Bhuyan Complex, Dr. J.C.Das Road, Panbazar Guwahati - 781 001 ASSAM Mob: 94351 99240	4	M/s. Planet Polyplast #247, Canal Road Dharampeth Nagpur - 440 010 MAHARASHTRA
5	M/s. Associated Engineers F-2, Top Class Enclave, I Floor Bhoidapada, Gokhivari Sativali Road, Vasai (East) , Thane - 401 208 MAHARASHTRA	6	M/s. Supreme Industries Limited # 24, Pamadi Towers II Floor, 19, I Main Road Gandhinagar Bengaluru - 560 009 KARNATAKA
7	The Supreme Industries Limited S-17, Sipani Building, 6 th Floor New Market, Chatribari Road Guwahati ASSAM Ph: 0361- 2731487	8	M/s. Times Technologies 3 rd Floor, Apollo Tower Gaarali, Jorhat ASSAM Mob: 09435090099
9	M/s.Pavan Agritech Solutions # 1, Haralur, Nagenahalli Mallur Post, Devanahalli Taluk Bengaluru Rural Dist. KARNATAKA Mob: 9449979622	10	M/s. Eco Packaging Net Plot No.40, Amar Nagar MIDC, Hingna Nagpur - 440 016 MAHARASHTRA Mob: 09373801177
11	M/s. Pooja Associates Prasanti Path, # 1 Beltola Road Guwahati - 781 028 ASSAM Mob: 08753928969	12	M/s. B.N. Trading Co. Valliyil Building, Kallumala P.O., Mavaelikara, Dist. Alleppey Kerala
13	M/s. M Tech Industries M-Tech House Diamond Ind. Estate Walive, Vasai - 401 208 Thane, Mumbai MAHARASHTRA	14	M/s. Planet Polyplast Flat No.5, Shiv Sampada Apartment # 247 Canal Road, Dharampeth Nagpur - 400 010 MAHARASHTRA Mob: 09370020026



#	Name of the Firm	#	Name of the Firm
15	M/s. Pragathi Marketing Services 398/1 Floor, I Stage, III Phase West of Chord Road Opp: Power House Bengaluru - 560 010 KARNATAKA Ph: 080-23401130	16	M/s. Akka Plastics C-11/51/1 Krishna Industrial Estate Gorwa Vadodara -390 016 GUJARAT
17	M/s. Sumeru and Sehri # 67, Industrial Area Phase-1 Panchkula -134 113 HARYANA Mob: 9417011660	18	M/s. ARD Poly Packs (P) Ltd. # 67, Industrial Area, Phase - I Panchkula -134 113 HARYANA Ph: 172-2560205 / 2560540 Mob: 09417011660 E-mail : ardpl2004@yahoo.co.in

POWER SPRAYER SUPPLIERS

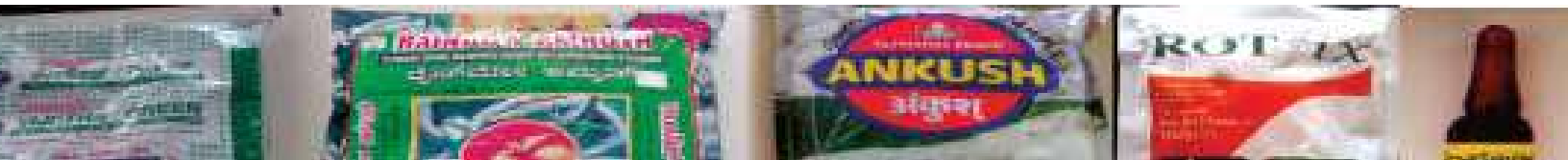
#	Name of the Firm	#	Name of the Firm
1	M/s. Suntech Agri Tech (INDAI) Pvt. Ltd., # 50/A, Main Road New Timber Yard Layout, Mysuru Road, Bengaluru - 560 026 KARNATAKA	2	M/s. Ratnagiri Impex Pvt. Ltd. Annapurna House, # 1/G, 7 th Cross New Guddadahalli, Mysuru Road Bengaluru - 560 026 KARNATAKA
3	M/s. Thermocon Instruments (P) Ltd. # 872, HAL, 3 rd Stage (Opp. BEML Gate) Bengaluru - 560 075 KARNATAKA Telefax: 080 - 25281578/ 25285951	4	M/s. SR Scientific & Services # 44, 5 th Cross, I Block Kar Mobilers Road, Peenya Bengaluru - 560 058 KARNATAKA Telefax - 9742313007 Mob: 9900645505
5	M/s. Raj Enterprises # 1265, 1 st Stage, Hebbal Mysuru - 570 016 KARNATAKA	6	M/s. CS Medical (P) Ltd. 7 th Cross, Vajpayam Garden Ashoknagar Bengaluru - 560 050 KARNATAKA
7	M/s. Alfa Instruments QP-56, Maurya Enclave Pitampura NEW DELHI - 110 088 Ph: 011-27321151	8	M/s. Supriya Enterprises Amala Mansion, # 143, Infantry Road Bengaluru - 560 001 KARNATAKA



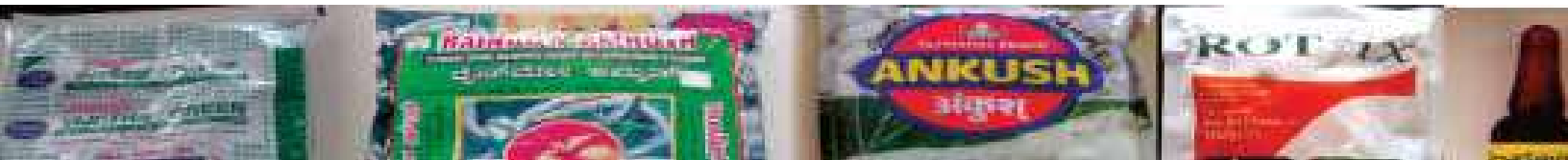
#	Name of the Firm	#	Name of the Firm
9	M/s. Humidifier Company # 69/1, Kamarajar Street Janatha Nagar West Saravanampatti (Post) Coimbatore - 641 035 TAMIL NADU	10	M/s. Supreet Electrical Industries # 56, Burial Ground Road Near St. Anthony's Church Uttarahalli Bengaluru - 560 001 KARNATAKA Ph: 080-22723411 Mob: 9844089097
11	M/s. Remi Sales & Engineering Ltd. No. 195,7(11), 13 th Cross 1 st Main Road, Vasanthnagar East Bengaluru - 560 052 KARNATAKA	12	M/s. Kendriya Bhandar Community Centre C.P.W.D. Quarters, Domlur, Bengaluru - 560 071 KARNATAKA Ph: 080-25350333, Fax: 25352964
13	M/s Balaji Agencies # 153/1, Ramavilas Road K R Mohalla Mysuru - 570 024 KARNATAKA	14	M/s. S V Rangaswamy & Company Ltd. # 2, 2 nd Cross, Kalasipalyam New Extension, P.B.No. 6539 Bengaluru - 560 002 KARNATAKA
15	M/s. Anupam Fabs # 235 B, 5 th Main Road 4 th Stage, West of Chord Road Industrial Town, Rajajinagar Bengaluru - 560 044 KARNATAKA Mob: 98450 23170	16	M/s. National Co-operative Consumers Federation of India Ltd. # 19, Rathan's Mansion 8 th Main, 3 rd Cross, Vasanthanagar Bengaluru - 560 052 KARNATAKA Ph: 080-22262634 Fax: 080 22254310
17	M/s. SKB System SF 230, Kamarajar Road Janatha Nagar West Sivanandhapuram Saravanampatti Post Coimbatore - 641 035 TAMIL NADU Ph: 0422 - 2668299 / 2669999		

WOODEN LOOSE EGG BOX SUPPLIERS

#	Name of the Firm	#	Name of the Firm
1	M/s. Serajual Islam Brohmothor Village PO Choto Sujapur P.S. Kaliachak Dist. Malda - 732 206 WEST BENGAL	2	M/s. Sajir Alirajual Islam Village & PO Choto Sujapur PS Kaliachak Dist. Malda - 732 206 WEST BENGAL



3	M/s. Md. Ashu Momin Village Agamilki PO Shershahi - 732 201 P.S. Kaliachak Dist. Malda WEST BENGAL	4	M/s. R.K. Enterprises Prop. Rajan Poddar Vivekananda Pally Malda - 732 101 WEST BENGAL
5	M/s. Wastiram & Sons # 149, Jakhan Rajpur Road Dehradun - 248 001 UTTARAKHAND	6	M/s. Vikas Enterprises # 65/8, Rajpur Road Dehradun - 248 001 UTTARAKHAND
7	M/s. Md. Ashak Alli Balpur Villaage, PO Sujapur PS Kaliachak Dist. Malda - 732 206 WEST BENGAL	8	M/s. Serajul Islam Agamilki (Sirkitola) Village PO Shershahi PS Kaliachak Dist. Malda- 732 201 WEST BENGAL
9	M/S. Ismail Ali Village & PO Mosimpur Via- Sujapur PS Kaliachak Dist. Malda -732 206 WEST BENGAL	10	M/S. Chasi Bhai Grainage Prop. Md.Dilwar Hossain, Village & PO Dakshin Lakshmipur PS Kaliachak Dist. Malda - 732 206 WEST BENGAL
11	M/s. Md.Mortuja Ali Balupur Village PO Sujapur Dist. Malda - 732 206 WEST BENGAL	12	M/s. Rezwan Momin PO Sujapur PS. Kaliachak Dist. Malda - 732 206 WEST BENGAL
13	M/s. Oberai Industries # 149/2, Rajpur Road Dehradun - 248 001 UTTARAKHAND	14	M/S. Farida Silk Enterprises Agamilki (Sirki Tola) Village & PO P.O. Shershahi - 732 201 P.S. Kaliachak Dist. Malda -732 206 WEST BENGAL
15	M/s. Vikash Enterprises # 65/8, Rajpur Road Dehradun – 248 001 UTTARAKHAND	16	Shri Praveen Agrawal Partner, M/s. Das and Kumars # D 63/10, Mahmoorgunj Varanasi - 221 010 UTTAR PRADESH (Plastic egg laying boxes virgin quality)
17	Shri Khitish Pandaya, M/s. Eco Stitch, F-394, Sector-63, Noida - 201 301 UTTAR PRADESH (Student Microscope, HL-33 model with wooden box (Make- Weswox)	18	Shri Gopi Garodia, Proprietor, M/s. Jai Shree Wire Products # 14/2, Raja Bagan, Kanke Road Ranchi- 8 JHARKHAND (Chawki rearing equipments (nylon nets)



MANUFACTURERS / SUPPLIERS OF COTTAGE BASIN AND MULTI-END REELING MACHINERY PACKAGE

Name of the firm	Contact
M/s. Aryan Engineering Near Vani Theatre Mahatma Gandhi Road Kanakapura - 562 117 Ramanagara District KARNATAKA	D. BALAKRISHNA ARYA
	080-27522439
	080-27522439
	9449646620 aryaneng.silk@gmail.com
M/s. Gajalakshmi Industries # 61, 2 nd Main Road Seshadripuram, Behind Govt. Primary High School Bengaluru-560020 KARNATAKA	K. VENKATESH MURTHY / GOPAL
	080-28367148
	080-23349265
	9886216161 / 9886111555 gajalakshmiind@gmail.com
M/s. Silk Tex Dharmaraja Workshop South Road, Opp. Yellamma Dasappa Kalyana Mantapa Off. M. G. Road Kanakapura-5862117 Ramanagara District KARNATAKA	D.Y. SNMATHI ARYA
	080-27522539
	aryaneng.silk@gmail.com
M/s. Silmac Industries # 14-D, Sivasakthi Colony Near LIC colony, SIDCO (PO) Coimbatore – 641 021 TAMIL NADU	R. VENKATAPATHY
	0422-2679989
	9443382114 silmacindustries@gmail.com
M/s. Sri Gajalakshmi Engineering Works, Plot No.556 3 rd Main Road, 2 nd Stage Peenya Industrial Estate Bengaluru – 560 058 KARNATAKA	VINOD
	080-28367060
	080-28367061
	9880023277/ 9844032913 sgewsilks@rediffmail.com
M/s. R.K. Industries # C-17, Industrial Estate B.M. Road Ramanagara-562159 KARNATAKA	HYDERALI KHAN
	080-27307151
	080-27275060
	9036469006 chyderalikhan@gmail.com

Name of the firm	Contact
M/s. Sri M.V.R. Industries # 403, 2 nd Cross Srirampura, Mysuru Road Kanakapura-562117 Ramanagara District KARNATAKA	GURU SIDDAPPA
	9448525144 / 9740475301
	gurumvr@gmail.com
M/s. Lalit Engineering Works Plot No.R-0701, 1 st Gate M. T. Sagar, Industrial Estate Gokul Road, Hubli -580 030 KARNATAKA	UTTAM SAIT
	0836-4259042
	9845613174 uttamshet@yahoo.co.in
M/s. Das & Kumars # D-73/10, Mahmoorganj Varanasi-221 010 UTTAR PRADESH	0542-2220414 / 2220521
	0542-2223199
	daskumars@yahoo.com
M/s. Jamuna Engineering Industries, # 37 Railway Station Main Road Ramanagaram -562 159 Ramanagaram District KARNATAKA	RIYAZ AHMED
	080 27271221 / 080 27271221
	9900888084
	jamunaengineeringindustries@gmail.com
M/s. Shree Innovative Engineering Industries, # 27, 23 rd Cross Kebbehalla Main Road Srigandhadakaval, Sunkadakatte Bengaluru-560 091 KARNATAKA	SUNILKUMAR
	9741733795 9964415915
	shreeinnovative9@gmail.com
M/s. K A Reeling Machine & Wooden Furniture Mfg. Industry Village & P.O. Gayesh Bari Dist. Malda WEST BENGAL – 732 206	MD. AHSANUL HOQUE
	0351-2246803
	9733166182



MANUFACTURERS / SUPPLIERS OF TWISTING MACHINERY PACKAGE

Name of the firm	Contact
M/s. S L N Industry #28, Azeez Sait Industrial Town Nayandahally Mysuru Road Bengaluru – 560039 KARNATAKA	RAGHAVENDRA
	080-23184552
	9341210282/ 9590009404 lnindustry.01@gmail.com
M/s. Hitech Textile Engg. Co. 53, Cubbonpet Main Road Bengaluru – 560 002 KARNATAKA	RAJENDRANATH.S
	080-22228310
	9342411570 / 9845119910 sue.raj@hotmail.com
M/s. Latha Industries # 78/15, Shankarappa Garden 8 th Cross, Right Side Magadi Road Bengaluru – 560 023 KARNATAKA	MANI
	080-23382906
	9342816028 / 9845046700 mani@lathaindustries.co.in
M/s. Latha Texmech Industries # 45/1/1, Gubbanna Industrial Estate, 6th Block, Rajajinagar Bengaluru - 560 010 KARNATAKA	SMT. SHRIDEVI, PROPRIETOR
	9342816028
	www.lathatexmach.com
M/s. Gajalakshmi Industries # 61, 2 nd Main Road Seshadripuram, Behind Govt. Primary High School Bengaluru - 560 020 KARNATAKA	K.VENKATESH MURTHY GOPAL
	080-28367148
	080-23349265
	9886216161 / 9886111555 gajalakshmiind@gmail.com

Name of the firm	Contact
M/s. Sri Gajalakshmi Engineering Works, Plot No.556 3 rd Main Road, 2 nd stage Peenya Industrial Estate Bengaluru – 560 058 KARNATAKA	VINOD
	080-28367060
	080-28367061
	9880023277 / 9844032913 sgewsilks@rediffmail.com
M/s. Silmac Industries # 14-D, Sivasakthi Colony Near LIC colony, SIDCO (P.O.) Coimbatore – 641 021 TAMIL NADU	R.VENKATAPATHY
	0422-2679989
	9443382114 silmacindustries@gmail. com
M/s. Sri M.V.R. Industries # 403, 2 nd Cross, Srirampura, Mysuru Road Kanakapura - 562 117 Ramanagara District KARNATAKA	GURU SIDDAPPA
	9448525144 / 9740475301
	gurumvr@gmail.com
M/s. Lalit Engineering Works Plot No.R-0701, 1 st Gate M T Sagar, Industrial Estate Gokul Road Hubli - 580 030 KARNATAKA	UTTAM SAIT
	0836-4259042
	9845613174 uttamshet@yahoo.co.in



MANUFACTURERS / SUPPLIERS OF IBR BOILER AND ACCESSORIES

Name of the firm	Contact details	Name of the firm	Contact details
M/s. Hitze Equipments (India) Pvt. Ltd., # 45-B, 2 nd Phase Peenya Industrial Area Bengaluru - 560 058 KARNATAKA	G. PURUSHOTHAMAN, PRASAD, RAGHUL	M/s. Bright Boilers SF.No.526/3 Near Zion Matriculation School Nataraj Colony Malumichampatti, Coimbatore - 641 050 TAMIL NADU	TITUS
	080-28395610 / 23722281 / 41171143		+91 422 2930490
	080-41171143		09994330600 / 09443030400
	9448083954 / 9343736558		brightboilers@gmail.com
	hitzindia@yahoo.com		
M/s. Souvenir Technologies Private Limited, #49, 8 th Cross I Main, Further Extn. of Mahalakshmi Layout Opp. Post Office Bengaluru – 560 086 KARNATAKA	V.A.DESHPANDE	M/s. Shanthi Boilers P-10-10, Road number 5 Industrial development area Nacharam, Secundarabad, TELANGANA – 500 076	AMIT
	9448919034		040-27174042
	souvenirtech@gmail.com		09490494915 sales@shantiboiler.com
M/s. V R & Brothers Plot No.118/B1 RBI Main Road Metagalli Industrial Area Mysuru - 570 016 KARNATAKA	0821-4280377	M/s. Firetech Boilers Private Ltd. Firetech House # 211, 2 nd Cross, 38 th Main BTM Layout, 2 nd Stage Bengaluru - 560 068 KARNATAKA	CHINMAY BHAT DIRECTOR
	info@vrb.co.in		080-26683921 Email-info@ firetechboilers.net

MANUFACTURERS / SUPPLIERS OF VANYA SILK REELING MACHINERIES

Reeling-Cum-Twisting, Re-Reeling, Wet Reeling, Two-In-One Reeling-Cum-Twisting, Tasar Cocoon Sorting Machine, Motorised-Cum- Pedal Operated Spinning Machines, Buniyad Reeling Machine

Name of the firm	Contact Details	Name of the firm	Contact Details
M/s. Sri Gajalakshmi Engineering Works, Plot No.556 3 rd Main Road, 2 nd stage Peenya Industrial Estate Bengaluru – 560 058 KARNATAKA	Vinod	M/s. Das & Kumars # D-73/10, Mahmoorganj Varanasi - 221010 UTTAR PRADESH	PRAVINKUMAR
	080-28367060		0542-2220414 / 2220521
	080-28367061		0542-2223199
	9880023277 / 9844032913		daskumars@yahoo.com
	sgewsilks@rediffmail.com		
M/s. Harsh Enterprises Mahmoorganj Varanasi - 221010 UTTAR PRADESH	9336911731 / 9648855500	M/s. R. K. Industries # C-17, Industrial Estate B. M. Road Ramanagara - 562159 Ramanagara District KARNATAKA	HYDERALI KHAN
			080-27307151
			080-27275060
			9848916394 chyderalikhan@gmail.com



Name of the firm	Contact Details
M/s. Sri Gajalakshmi Industries Plot No.556, 3 rd Main Road 2 nd stage, Peenya Industrial Estate, Bengaluru – 560 058 KARNATAKA	K.VENKATESH MURTHY
	080-28367148
	080-23349265
	9886216161 / 9886111555 gajalakshmiind@gmail.com
M/s. Silmac Industries # 14-D, Sivasakthi Colony Near LIC Colony, SIDCO (P.O.) Coimbatore – 641 021 TAMIL NADU	R.VENKATAPATHY
	0422-2679989
	9443382114 silmacindustries@gmail.com
M/s. Sri M V R Industries # 403, 2 nd Cross, Srirampura Mysuru Road Kanakapura - 562 117 Kanakapura - 562 117 Ramanagara District KARNATAKA	GURU SIDDAPPA
	9448525144 / 9740475301
	gurumvr@gmail.com

Name of the firm	Contact Details
M/s. Resham Sutra Pvt Ltd. Ashreya Behind Sirdi Sai Hospital Bariatu Ranchi - 834 009 JHARKHAND	KUNAL
	9810349640
	production@reshamsurtra.com
M/s. Pragjyothika Enterprise Chhabra Bhawan, M S Road Railway Gate No.4 Fancy Bazar Guwahati – 781 001 ASSAM	MANISH KUMAR JAIN
	03612510651
	9435145467 / 9435145451 9954497414 pragjyotika.mj@gmail.com

MANUFACTURERS / SUPPLIERS OF SOLAR OPERATED SPINNING MACHINE

Name of the firm	Contact Details
M/s. Sri Lakshmi Enterprises #120, Kempgowda Nagar Vishwaneedam Post Magadi Main Road Bengaluru – 560 091 KARNATAKA	RAJESH HA
	984513730 / 9845104437 / 8095965557
	Rajesh.ha@gmail.com

Name of the firm	Contact Details
M/s. Anu Solar Power Private Limited, # 248, 3 rd Cross 8 th Main, 3 rd Phase Peenya Industrial Area Bengaluru -560058 KARNATAKA	GEORGE KUTTY
	080-43550200
	9845529072
	info@anusolar.com george@anusolar.com

MANUFACTURERS / SUPPLIERS OF BUNIYAD REELING MACHINE

Name of the firm	Contact Details
Ramesh Kumar Dewangan Behind Water Tank, Nayapara Champa District, Janjgeer Champa CHHATTISGARH - 495671	RAMESH KUMAR DEWANGAN,
	9399713349

POST YARN DIVISION Ashu Machine

Name of the firm	Contact Details
M/s.Shankar Engineering Works # 11-13/1, Kranti Nagar PO & Mandal Alir Nalagonda District ANDHRA PRADESH	Chintakindi Mallesham
	08685-262128
	09247282778
	Malleshamchinthakindi_115@gmail.com



LOOM UPGRADATION

Name of the firm	Contact Details	Name of the firm	Contact Details
M/s. Prime Enterprises # .69-D/16A. A Road 1 ST Floor, Sarathas Complex, Near Old Bus Stand Salem - 636 003 TAMIL NADU	B.RAMESH KUMAR 0427-2262889 09994444459 primeenterprises.ramesh@gmail.com	M/s. Latha Texmach Industries # 45/1/1, 6 th Block, Rajajinagar Gubbanna Industrial Estate Bengaluru - 560 010 KARNATAKA	
M/s. Gokulam Engineering Stores Gokulam Tower # 29/41, Kallanguthu Street, Salem - 636 001 TAMIL NADU	P MURUGAN 0427-2268094 / 2268095 09842704321 gokulampumps@gmail.com	M/s. Sai Handloom Industries # 273/5A , Opp. Govt. High School, Kotnur Hindupur - 515 201 Anathapur - District ANDHRA PRADESH	9440263703
M/s. Indo Global # 274, Mysuru Road New Guddadahalli Bengaluru - 560026 KARNATAKA	SAVITHA VENKATESH 9845942586 savithavenkatesh25@gmail.com	M/s. Weavers Machinery Mart Mfrs Jacquard Dobby Kandi Machine Bajrang Nagar, Lotha, Varanasi - 221 107 UTTAR PRADESH	97940707398 weaversmachinerymart@gmail.com
M/s. Nanjundeswara Industries Gowribidanur Rd., Tubugere Hobli, Gollahalli Village, Doddaballapura Taiuk, Bengaluru - 561 203 KARNATAKA	BASKAR 9481357056	M/s A Cube(Equip) Engineers # 16/6, Saravana Thottam (Behind Annapoornamma Kalyan Mandapam), Panaickenpallyam Road Thudiyalur Coimbatore - 641 034 TAMIL NADU	9942039138 acube@india.com
M/s. Sri. Manjunatha Traders # 14-431, PRT- Street, Dharmavaram ANDHRA PRADESH	9985162177	M/s. B C M # 3/88-A, Soundarajna Colony Valasaiyur Salem - 636 122 TAMIL NADU	9865740819
M/s. Sri. Balaji Industries #38 Sundaram Street Kosapalayam Arni-632 301, TAMIL NADU	9894119842	M/s. Bhunkar Traders Textile Machinery Production and Suppliers, Qasim Pura Sonia Bada, Maunath Bhajan Dist. Mau - 275 101 UTTAR PRADESH	09889133300
M/s. Srivaru Industries #12/7C, Avaram Palayam Road Peelamedu Post, Coimbatore - 641 004 TAMIL NADU	0422-2565671 98947 06611 srivaru_ind@yahoo.co.in		
M/s. Kanan Jacquard Industries, # 7B/5-A, Thiruvalluvar Street New Ramanad Street Madurai - 625 009 TAMIL NADU	0452-2311105 9842172520 kannanjacquard@gmail.com		



COMPUTER AIDED TEXTILE DESIGNING (CATD)

Name of the firm	Contact Details	Name of the firm	Contact Details
M/s. Cybiean Artigence Tech Private Limited, # 6-F, 159 Sugavaneswara Street Balajinagar Salem-636 004 TAMIL NADU	P. SEKAR 9443128785 / 9487528785 support@cybiean.com, cybiean@gmail.com	M/s. Aruna Industries #20-4-3333 Melapuram Hindupur - 515201 ANDHRA PRADESH	C.SRINIVASA REDDY ANILKUMAR REDDY 08556224104 9440263703 / 9440552331 arunahandloomind@gmail.com
M/s. Woven Technologies # 397, Trichy Main Road 1st Floor, Gugai Salem - 636 006 TAMIL NADU	0427-2469868 9443210808 manibhaskaran@yahoo.com bhaskaranmani@gmail.com	M/s. Gurubrahma Technologies #99/100, Anjaneya Temple Street, Cubbonpet Bengaluru - 560 002 KARNATAKA	TL SRINIVASA 09448110289 / 08792455762 tls.amaragiri@gmail.com
M/s. Kushal Designs #358C, 14th Main Shanthiniketan Layout, Arakere Bengaluru – 560 076 KARNATAKA	B.S. RAGHUNATH 9739297333 kushal_designs@rediffmail.com	M/s. Teckmen # J-18, S-Block, MIDC Bhosari, Pune-411 026 MAHARASHTRA	C. ASHOK KUMAR 020-27120764 / 020-27129371 020-27122663 020-2712261 teckmen@rediffmail.com
M/s. Vasu Winding Industries # 25, 'H'Cross, 3rd Main Shamanna Garden New Guddadahalli Mysuru Road Bengaluru-560 026 KARNATAKA	Y.E. VASUDEVARAO 080-26759109 9845476565 / 9342817077 vasuwinding@gmail.com	M/s. Suryateja Technologies # 23/B, 2nd Cross, Cubbonpet Bengaluru – 560 002 KARNATAKA	RAVIKUMAR.K. 080-22115138 9901222226 / 9901222225 suryatejatechnologies@yahoo.co.in
M/s.Udayaravi Enterprises #23, Ground Floor, 2nd Cross Cubbonpet Bengaluru – 560 002 KARNATAKA	K.RAVIKUMAR 9901222226 / 9902800896 ursenterprises@yahoo.com	M/s. Sujatha Industries #65/24, Bajanai Koil Street Mannurpet Chennai - 600 050 TAMIL NADU	D. DHANRAJ 944191255 sujatha_industries@yahoo.com

WET PROCESSING MACHINERY

Dyeing Machinery Package

Yarn Dyeing Tub, Arm Dyeing, Fabric Processing

Name of the firm	Contact Details
M/s. S K Equipments # C 305, Sector-10, Noida-201 301 UTTAR PRADESH	011 - 64634964 011 - 64634964 9818900247/9212324964 sk_eq@rediffmail.com info@skequipments.com

SS Tubs, Hydro Extractor, Winch Dyeing , Arm Dyeing Machine

Name of the firm	Contact Details
M/s. The Venus Engineering Company, # 10 Subhash Industrial Estate Near C T M Cross Road Ramol Road Ahmedabad-380 026 GUJARAT	079-25855874 079-25855857 079-25856250 venuseng@dataone.on



ARM DYEING MACHINE

Name of the firm	Contact Details
M/s. Amrut Industries Plot No.5/8, Gopal Estate B/H, Harshad Chambers Opp. Vallabhanagar Odhav Ahmedabad - 382 415 GUJARAT	Ph.No.91-79-22870571 amruthlooms@gmail.com
Somet Machinery(India) Plot No.-7, Gopal Estate B/H, Harshad Chambers Opp. Vallabhanagar Odhav Ahmedabad- 382415 GUJARAT	Panchal Kiranbhai Tribovandas Proprietor Ph.0 79-22870571 7922894577 sometindia@yahoo.co.in

Name of the firm	Contact Details
M/s. Amrut Industries Plot No.-5/8, Gopal Estate, B/H Harshad Chambers Opp. Vallabhanagar Odhav Ahmedabad- 382415 GUJARAT	Chragbhai Tribovandas Manager 7922870571 amruthlooms@gmail.com
M/s. Prabhat Iron Works Opp. Hanuman Mandir, 74/1, G I D C Vatva Ahmedabad -382 445 GUJARAT	Ketan Bhai Markand Bhai Panchal 7925890897 prabhatiron@sify.com

TUB DYEING UNIT (8 COMPONENTS)

M/s .V K Enterprises 17th Cross Krishnappa Building Kondappa Layout, Yelahanka Bengaluru – 560 064 KARNATAKA

FABRIC DYEING UNIT 250 KG. CAP.

M/s. R. N. Engineering # 240, 8th Cross J. C. Industrial Area Off. Kanakapura Road Bengaluru - 560 062 KARNATAKA

ARM DYEING MACHINE, WINCH DYEING MACHINE & HYDRO EXTRACTOR, WATER TANK STEEL TUBS, BOILER, WATER SOFTENING PLANT

Name of the firm	Contact Details
M/s. Onleo Global Solutions Pvt. Ltd., # 3411, ML Corner Service Road (Next to BTS Depot) Vijayanagar Bengaluru – 560 040 KARNATAKA	NARENDER BHARADWAJ J PRABHU 080 23183411 9980039788 info@onleogl obal.com



EFFLUENT TREATMENT PLANT

Name of the firm	Contact Details
M/s. Austro Chemicals & Bio Technologies Pvt. Ltd. # 2/896-B, S.R. Nagar, North Nethaji 3 rd Street Mangalam Road Tirupur - 641 687 TAMIL NADU	SURESH KUMAR BABU
	0421-2263140
	7829087222 9585536138
	austrochemicals@gmail.com, info@austro.in
M/s. Hydro Chemtech Private Limited P.B.No.2127, #3618/26 3 rd Cross, (Old 9 th Cross) Gayathrinagar Bengaluru - 560 021 KARNATAKA	
M/s. Apa Heuristic #816, First Floor, Sivan Street Chendurapuram Kattuppakkam, Porur Chennai - 600056 TAMIL NADU	T. Gopinath, Chief Operating officer.
	9840755598
	apaheuristic@gmail.com
M/s, Quality Water Management Systems Pvt Ltd., Flat.No.6 Kamatkshi Apartments, # 32, 10 th Avenue, Ashok Nagar Chennai- 600 083 TAMIL NADU	044- 23710574
	gwms2001@vsnl.in

Name of the firm	Contact Details
M/s Hydro Chemtech Pvt. Ltd. Mr. Sharma # 3618/26 3 rd Cross, Gayathrinagar Bengaluru - 560021 KARNATAKA	SHARMA
	9900028200
M/s Aqua Specialists # 9, Manjunath Layout Nanjappa Garden, RT Nagar Bengaluru - 560032 KARNATAKA	9945710339 9740361128
	aquaspawater@gmail.com
M/s. Incompressible Fluid Control Systems, # 4728, 1st Floor Anna Salai, West Saidapet Chennai - 600 035 TAMIL NADU	9840755598
	icfcs.india@gmail.com arasu@apaheuristic.co.in



SERICULTURAL STATISTICS IN INDIA - A GLANCE

Particulars	Unit	2013-14	2014-15	2015-16	2016-17	2017-18
Mulberry Plantation	ha.	203023	219819	208947	216810	223926
Production of reeling cocoon						
Bivoltine	MT	17270	25572	30743	34202	38945
Cross Breed	MT	125217	133687	121044	121486	122739
Total	MT	142487	159259	151787	155688	161684
Production of Raw Silk						
Bivoltine	MT	2559	3870	4613	5266	5874
Multivoltine	MT	16917	17520	15865	16007	16192
Total	MT	19476	21390	20478	21273	22066
Vanya						
Production of						
Tasar Reeling Cocoon	Lakh No.	21032	21253	22871	23674	22435
Tasar Silk Yarn	MT	2619	2434	2819	3268	2988
Eri Cut Cocoon	MT	5464	6087	6623	7060	9968
Eri Spun Yarn	MT	4237	4726	5060	5637	6661
Muga Reeling Cocoon	Lakh No.	7170	7829	8284	8450	9645
Muga Raw Silk	MT	148	158	166	170	192
Total Production (Vanya Silk)	MT	7004	7318	8045	9075	9840
Total Raw silk Production	MT	26480	28708	28523	30348	31906
Exports						
Foreign Exchange Earnings	Crore Rs.	2480.89	2829.95	2495.98	2093.42	1649.48
	Mn. US\$	410.61	462.86	381.24	312.13	255.93
Import						
Raw Silk	MT	3260	3489	3529	3795	3712
	Crore Rs.	896.44	970.82	1006.16	1092.26	1218.14
	Mn. US\$	148.37	158.79	153.68	162.85	189.01
Employment	Lakh Person	78.5	80.3	82.5	85.1	86.04



Particulars	Unit	2013-14	2014-15	2015-16	2016-17	2017-18
PRICES						
Mulberry						
Reeling Cocoon (CB) *	Rs /kg	327	286	246	353	398
Reeling Cocoon (BV) *	Rs. /kg	384	324	287	421	492
Raw Silk (#) **	Rs. /kg	2899	2605	2218	2864	3500
Silk Waste (Filature) ***	Rs. /kg	510-700	575-770	420-690	500-625	540-650
Vanya						
Tasar						
Reeling Cocoon (Daba-Grade1)	Rs./1000 No.	1675-1910	1785-4500	2000-4500	2100-3400	2200-3700
Reeling Cocoon (Raily)	Rs./1000 No.	2000-3200	2500-6000	4000-6300	3500-5800	3800-5800
Raw Silk (Reeled Yarn)	Rs. /kg	2400-3200	2200-5000	4300-4800	3200-4600	3200-3500
Raw Silk (Ghicha Yarn)	Rs. /kg	800-1700	1150-3000	1600-2900	1200-2500	1800-2100
Eri						
Cut Cocoon (Superior Quality)	Rs. /kg	300-570	260-650	400-730	420-775	720-800
Raw Silk (Spun Yarn)	Rs. /kg	1200-1600	1400-2800	1600-3300	1800-2600	2250-2600
Muga						
Reeling Cocoon	Rs./1000 No.	1400-2000	2000-2250	1500-2150	1600-3500	1800-2600
Raw Silk (Warp)	Rs. /kg	10000-15000	14000-18000	12500-15500	14200-18000	18000-22000
Raw Silk (Weft)	Rs. /kg	8000-12000	12000-16000	11000-14000	12500-15500	17000-20000

Note: *: refers to Ramanagaram Cocoon Market, **: refers to Karnataka Silk Exchange, #: Filature/ Cottage Basin

***: refers to month-end price of Siddalaghatta area



STATE-WISE RAW SILK PRODUCTION DURING 2017-18

State	Mulberry Plantation (Hectare)	Mulberry Silk			Vanya Silk(MT)				Total (Mul+Vanya) (MT)
		Bivoltine Hybrid	Cross Breed	Total	Tasar	Eri	Muga	Total	
Andhra Pradesh	36638	1216	5559	6775	3.48			3	6778
Arunachal Pradesh	140	2	0.30	2		50	1.5	52	54
Assam & BTC	8594	59		59		4645	157	4802	4861
Bihar	557	5	12	17	36	10		46	63
Chhattisgarh	261	0.3	8	9	523			523	532
Haryana	94	0.70		1					1
Himachal Pradesh	2454	32		32					32
Jammu & Kashmir	8104	132		132					132
Jharkhand	472		3	3	2217			2217	2220
Karnataka	98135	1651	7671	9322					9322
Kerala	149	15		15					15
Madhya Pradesh	2765	71	14	85	18			18	103
Maharashtra	4327	350	3	353	19			19	373
Manipur	3590	84	8	92	5	290	1	296	388
Meghalaya	3209	39		39		1007	30	1037	1076
Mizoram	4094	61	14	75	0.05	8	0.76	9	84
Nagaland	290	11	1	12	0.002	602	1	603	615
Odisha	464	2	1	3	106	7		113	116
Punjab	1129	3		3					3
Sikkim	185	0.001		0.001					
Tamil Nadu	18854	1775	210	1984					1984
Telangana	3517	158	0.04	158	4.5			4	163
Tripura	2184	28	59	87					87
Uttar Pradesh	4044	110	123	233	22	37		58	292
Uttarakhand	3197	33		33		2		2	35
West Bengal	16480	36	2504	2540	35	3	0.19	37	2577
Grand Total	223926	5874	16192	22066	2988	6661	192	9840	31906

Source: Compiled from MIS reports received from State Departments.



STATE-WISE RAW SILK PRODUCTION DURING 2016-17

State	Mulberry Plantation (Hectare)	Mulberry Silk			Vanya Silk(MT)				Total (Mul+Vanya) (MT)
		Bivoltine Hybrid	Cross Breed	Total	Tasar	Eri	Muga	Total	
Andhra Pradesh	33156	1056	4914	5970	1			1	5971
Arunachal Pradesh	100	2		2		42	1	43	45
Assam & BTC Bodoland	7898	52		52		3619	139	3758	3811
Bihar	421	6	18	23	44	10		53	77
Chhattisgarh	322	0.32	7	8	353			353	361
Haryana	183	0.68		1					1
Himachal Pradesh	2245	32		32					32
Jammu & Kashmir	8444	145		145					145
Jharkhand	372		1	1	2630			2630	2631
Karnataka	91492	1488	8083	9571					9571
Kerala	126	11		11					11
Madhya Pradesh	5597	30	54	84	26			26	111
Maharashtra	3480	228	3	231	27			27	258
Manipur	7548	149	12	161	5	363	1	369	529
Meghalaya	3209	28		28		872	27	899	927
Mizoram	4009	47	18	65	0.017	11	0.26	11	76
Nagaland	290	7	1.37	8	0.08	669	1	670	678
Odisha	686	3	0.11	3	116	6		122	125
Punjab	1129	3		3					3
Sikkim	198	6		6		3	0.17	3	9
Tamil Nadu	17574	1627	288	1914					1914
Telangana	2650	105	7	112	7			7	119
Tripura	2450	75		75					75
Uttar Pradesh	4212	97	114	211	22	36		58	269
Uttarakhand	3029	31		31	0.02	3		3	34
West Bengal	15990	38	2486	2524	37	4	0.20	41	2565
Grand Total	216810	5266	16007	21273	3268	5637	170	9075	30348



EXPORT EARNINGS FROM SILK

Items	2013-14		2014-15		2015-16		2016-17		2017-18	
	Creore Rs.	Mn. US \$	Creore Rs.	Mn. US \$	Creore Rs.	Mn. US \$	Creore Rs.	Mn. US \$	Creore Rs.	Mn. US \$
Cocoons	0.16	0.03	0.06	0.01	2.47	0.38	0.32	0.05	0.05	0.01
Raw Silk	4.49	0.74	0.69	0.11	1.43	0.22	0.44	0.07	NE	
Silk Yarn	31.6	5.23	24.66	4.03	26.41	4.03	14.57	2.17	15.61	2.42
Fabrics & Made-ups	1455.63	240.92	1465.44	239.69	1280.6	195.6	1051.65	156.8	864.81	134.18
Readymade Garments	874	144.65	1214.01	198.56	1078.39	164.71	864.33	128.87	650.48	100.93
Silk Carpet	15.71	2.6	15.97	2.61	16.88	2.58	63.78	9.51	17.34	2.69
Silk waste	99.3	16.43	109.12	17.85	89.8	13.72	98.33	14.66	101.19	15.7
TOTAL	2480.89	410.61	2829.95	462.86	2495.98	381.24	2093.42	312.13	1649.48	255.93

NE:No Exports

Source: DGCI&S, Kolkata

IMPORT DETAILS OF SILK AND SILK GOODS

Items	2013-14		2014-15		2015-16		2016-17		2017-18	
	Creore Rs.	Mn. US \$	Creore Rs.	Mn. US \$	Creore Rs.	Mn. US \$	Creore Rs.	Mn. US \$	Creore Rs.	Mn. US \$
Raw Silk	896.44	148.37	970.82	158.79	1006.16	153.68	1092.26	162.85	1218.14	189.01
	(3260 MT)		(3489 MT)		(3529 MT)		(3795 MT)		(3712 MT)	
Silk Yarn	100.07	16.56	103.78	16.97	81.66	12.47	76.66	11.43	111.85	17.35
Fabrics & Made-ups	315.32	52.19	239.01	39.09	249.46	38.1	241.74	36.04	292.77	45.43
Readymade Garments	16.07	2.66	18.2	2.98	15	2.29	12.37	1.84	17.41	2.7
Silk Carpet	0.63	0.1	0.43	0.07	0.05	0.01	0.11	0.02	0.23	0.04
Silk waste	28.96	4.79	25.91	4.24	36.77	5.62	15.03	2.24	11.99	1.86
TOTAL	1357.49	224.67	1358.15	222.14	1389.10	212.17	1438.17	214.42	1652.39	256.39

Note: Figures in paranthesis indicate quantity of raw silk imported

Source: DGCI&S, Kolkata





Central Silk Board

Ministry of Textiles – Government of India
BTM Layout, Madiwala
Bengaluru – 560 068, INDIA

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