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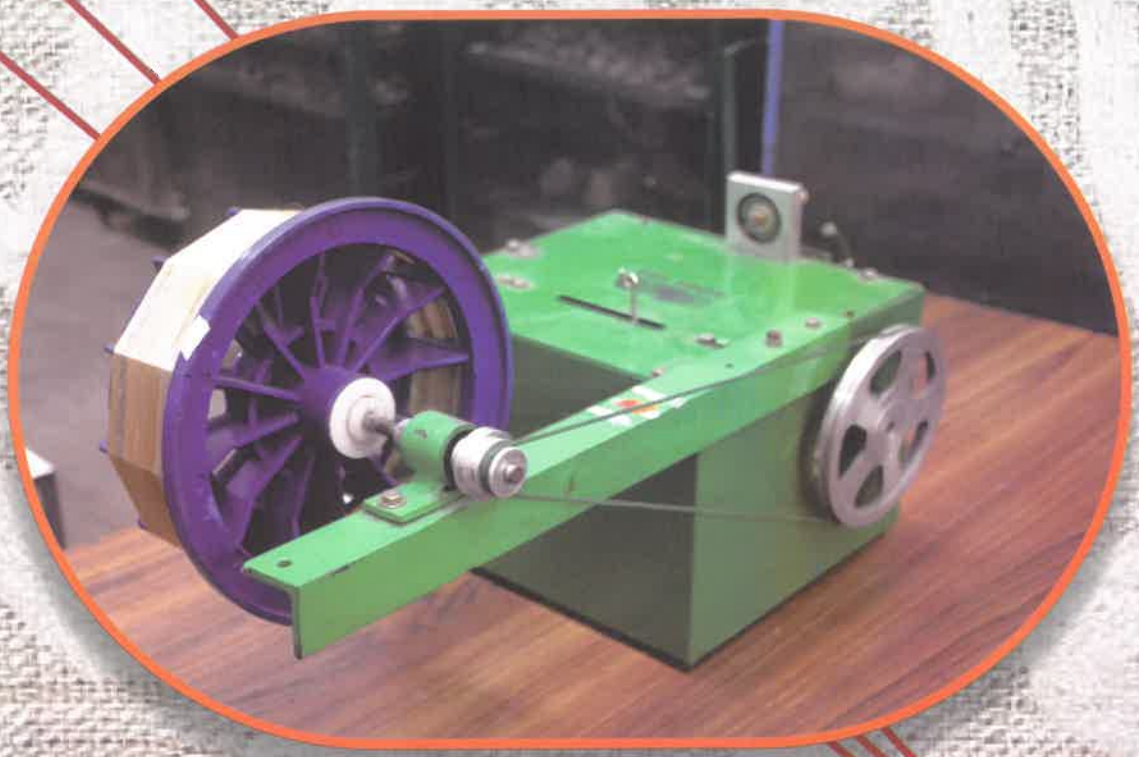

HIGHLIGHTS OF ACHIEVEMENTS OF CENTRAL SILK BOARD

HIGHLIGHTS OF ACHIEVEMENTS OF CENTRAL SILK BOARD

INDIAN SILK INDUSTRY PERFORMANCE

- Total raw silk production in the country by the end of 2017-18 stands at 31,906 compared to 30348 MT in 2016-17, thereby recording an increase of 5.1%.
- Out of the cumulative raw silk production in the country, mulberry sector contributed, a total of 22066 MT (BV-5874 MT and CB-16192 MT) compared to 21273 MT (BV -5266 MT and CB -16007 MT) in 2016-17.
- The Vanya sector, comprising of tasar, eri & muga silks, produced 9840 MT of raw silk with 6661 MT of eri, 2988 MT of tasar and 192 MT of muga during 2017-18.
- Production of import-substitute Bivoltine mulberry silk increased from 5266 MT (2016-17) to 5874 MT during 2017-18, an increase of 11.5%.
- Fabrics, made-ups and readymade garments continued to be the major items of India's silk exports, accounting for about 91.86% of the total silk-goods export. The industry, despite the global recession and shifting preference for other fibres, managed export earnings of Rs.1649.48 crore (provisional) from silk and silk-goods during 2017-18.

RESEARCH & DEVELOPMENT

Mulberry Sector

- Authorized mulberry varieties, 'G4' for tropical & sub-tropical climate and irrigated conditions with a potential yield of 60 MT/ha/year.
- Developed and commercialized three chemical formulations *viz.*, ANKUR, an organic and inorganic nutrient supplement for soil fertility and health; ANKUSH, an ecological & user-friendly silkworm body and rearing bed/seat disinfectant and ROT FIX, a broad-spectrum eco-friendly formulation for control of root-rot disease in mulberry.
- Identified C-9, a high yielding mulberry genotype, suitable for low input soil with annual leaf yield of 49.89 MT/ha/yr, as compared to the control variety S-1635 (44.13 MT/ha/yr).
- Identified 30 promising mulberry genotypes suitable for moisture stress conditions yielding better than the existing rainfed varieties with significantly higher leaf yield.
- Developed C-1360, a powdery mildew disease resistant mulberry variety and is included in the next phase of the All India Coordinated Experiment on mulberry.
- Developed two molecular markers of 182 bps (MM68) and 190 bps (MM128) size having strong correlation with powdery mildew resistance.
- Developed a micro-propagation protocol for Goshoerami, an exotic and temperate mulberry variety, with a success rate of 83%.
- Issued 18640 Soil Health Cards to mulberry sericulture farmers indicating the soil status of their respective fields for convenience in input planning.
- Authorized bivoltine hybrid B.Con.1 x B.Con.4 and the Multi x Bi hybrid M6DPC x (SK6 x SK7) for commercial use.
- Authorized G11 x G19, a bivoltine double hybrid with yield potential of 68 kg cocoons/100 dfls, suitable for sub-optimal conditions and for commercial exploitation

in Andhra Pradesh, Karnataka, Kerala, Maharashtra, Tamil Nadu and Telangana.

- Developed a thermo-tolerant bivoltine double hybrid (N21 x N56) with yield potential of 72 kg cocoons/100 dfls with 21.5% shell, through molecular marker-assisted selection breeding.
- Two new productive bivoltine hybrids *viz.*, CSR-52N x CSR-26N and (CSR-52N.S-8N) x (CSR-16N.CSR-26N) with BmNPV tolerance were developed.
- Developed two new improved cross breeds ICB17 x S8 and ICB 14 x N23 with a yield potential of 70 kg /100 dfls to produce 2A-3A grade silk.
- Developed LAMP - a technique to detect *Nosema bombycis* causing pebrine disease in mulberry silkworms and validated with seed stocks. This technique can be used in muga sector also.
- Developed sex-pheromone based "Uzi-lure", in collaboration with NBAIR, Bengaluru which was evaluated for effective management of uzifly in the laboratory and field conditions.
- Developed two new hybrids HTH-3 × HTH-6 and HTH4 × HTH9, tolerant to high temperature and high humidity.
- Developed bivoltine single hybrids BHP-2 x BHP-8 and BHP-3 x BHP-8 with higher cocoon yield over ruling hybrids SK-6 x SK-7 and B.Con.1 x B.Con.4.
- Developed 16 new breeding lines and the 'Line-14' recorded an average fecundity of 530 with 98.86% hatching and cocoon yield of 74.75 kg/100 dfls.
- Identified three Oval x Oval hybrids [*viz.*, CSR46 × APS9 (O1), APS9 × BBE 198 (O2) and APS5 × APS9 (O3)] and one Dumbbell x Dumbbell hybrid (SK6 × SK7) suitable for Autumn rearing in North India.

Vanya Sector

- Tested 10 accessions of *T. arjuna* for drought tolerance and accession No.525 and No.523 were found superior in terms of higher stress tolerant index with better plant growth, physiological and bio-chemical characters.
- Isolated 57 Azotobacter isolates from different tasar rearing regions of West Singbhum district in Jharkhand and tested the effect on plant growth and leaf nutrient content of tasar host plant in forest and block plantation.
- Standardized the protocol for testing phosphate solubilization in Phosphate Solubilizing Bacteria (PSB) isolates using bromophenol blue dye.
- Assessed 19 morphological traits along with leaf moisture, protein and phenol content to develop a comprehensive nutrient management package for the muga silkworm host plant 'Som'.
- Isolated and identified antagonistic bacteria from Castor (eri host plant) rhizospheres and found it effective against the disease *Alternaria blight* of castor.
- Identified bio-surfactant producing bacteria *viz., Bacillus* sp., *Enterococcus* sp., *Pseudomonas* sp., *Staphylococcus* sp. and *Serratia* sp. from hydrocarbon contaminated soils of muga growing areas in Upper Assam.
- Developed Pebrine Visualization Solution (PVS) to detect pebrine easily by enhancing the clarity of smear (by removal of cellular debris) and hence visibility of pebrine spores.
- Tested CTR-14, a new breed of *Antheraea mylitta*, at three locations and the result showed 20-22% gain over control in productivity.
- Collected information on the availability of wild cocoons in different eco pockets and

prepared a predictive map using GIS and Remote Sensing data on availability of wild tasar populations.

- Standardized the technique of purification and characterization of sericin from cocoons of different eco-races of tasar silkworm.
- Undertook mass-scale field trial of Tasar Amrit (Semi-synthetic diet for tasar silkworm) at farmer level in different states.
- Muga silkworm mitochondrial genome has been sequenced, mapped and published.
- Developed two new combinations of eri silkworms *viz.*, YP x GBZ and GBS x GBZ superior to the existing commercial breed.
- Established the world's first *in-situ* conservation site of muga silkworm and other wild silk moths at Golaghat, Assam.
- Tested solar LED trap with lure for controlling insect pests in muga silkworm rearing.
- Surveyed the potential muga growing areas in Upper Assam districts to determine the possible loss of muga crop due to insecticide spray.
- 1048 Soil Health Cards issued to tasar & muga sericulture farmers.

Post-cocoon Sector

- Developed a conveyor cocoon drying machine for hot air drying of cocoons with a capacity of 1.2 MT cocoons/day.
- Developed a new reeling machine "Sonalika" to replace 'Bhir reeling' of muga cocoons.
- Developed eri cocoon opening device, pre-treatment equipment for cocoon cooking and baby dyeing machine, to address issues related to the industry.
- Developed steaming technique for improving the winding performance of raw silk skeins.
- Developed technology for development of diversified silk knitwear products / garments using international quality silk.
- Developed technology for extraction of sericin from silk yarn using HTHP method.
- Developed 'Tasar Plus' – a cocoon softening chemical recipe for efficient cooking of tasar cocoons.
- Developed protocol for systematic purification of 'mulberry silk sericin' for topical skin applications.

Patents & Commercialization

- Application submitted for Patent of Rot Fix, a broad spectrum eco-friendly formulation for control of root-rot disease in mulberry.
- Commercialized i) ANKUR, an organic and inorganic nutrient supplement for Soil Fertility and Health; ii) ANKUSH, an eco-friendly chemical formulation for silkworm body and rearing seat disinfection and iii) Rot fix, a broad spectrum eco-friendly formulation for control of Root Rot disease in mulberry.
- Two patents obtained in Post-cocoon sector:
  I. Improved handloom using pneumatic lifting mechanism for jacquards &
  II. Improved reeling-cum-twisting machine.

Capacity Building and Training

- A total of 17292 persons were trained during 2017-18 against the set target of 15270 persons. In addition, a total of 2128 college students and school children were exposed to sericulture.
- Seven batches of Trainers' Training Programmes were organized under NERTPS covering 181 DoS officers/officials from North-eastern states.
- A total of 1077 farmers covering all the sub-

sectors of silk were taken for exposure visit to developed sericulture clusters and R&D Centers for inspiring them and broadening their vision and knowledge levels.

- A total of 31 candidates, enrolled during 2016-17, successfully completed the Post Graduate Diploma in Sericulture (PGDS) and a total of 35 persons were enrolled for 2017-18 session. Twenty persons were admitted at CSR&TI, Berhampore for PGDS (mulberry) and fifteen persons at CTR&TI, Ranchi for PGDS (vanya).
- With a view to facilitate farmer-to-farmer contact for information sharing and technology demonstration, a total of 12 Sericulture Resource Centres were established in different Seri-Clusters including NE region during 2017-18, in addition to the existing 11 SRCs (total of 23 SRCs.)
- IGNOU in association with CSB runs a six-month Certificate course in Sericulture since 2008. During the year, 254 new enrolments took place taking the total enrolments to 1068 so far.
- CSB, on request & funding from DoS, Karnataka, had organized three batches of Entrepreneurship Development Programme (EDP) focusing on silk reeling through CSTRI, Bengaluru covering 73 potential entrepreneurs.

IT Initiatives

- *m-Kisan:* Provided scientific advisories to farmers using m-Kisan Web Portal.
- 'SMS Service' on mobile phones on day-to-day market rates of silk and cocoons for the benefit of farmers and other stakeholders of the industry.
- SERI-5K database to maintain and monitor Bivoltine cluster farmers throughout the country.
- Full-fledged video conference facility in CSB offices at Bengaluru, Mysuru, Berhampore, Pampore, Ranchi, Lahdoigarh and New Delhi launched.
- Making the official website "csb.gov.in" bi-lingual (English & Hindi) for dissemination of information for the benefit of common citizen.
- Facility for submitting online applications for various posts, making it easy and effective for job aspirants to submit their applications.
- Aadhaar enabled bio-metric attendance system in around 81 CSB units.
- Developed Windows-based Accounting Software package.
- Creation of National Database of sericulture farmers and reelers in association with State Departments.
- Design & development of database for management of grievances and VIP references.

Seed Organization

The seed organizations of CSB under mulberry and vanya (tasar, muga & eri) sectors have effectively contributed towards raw silk production in the country through supply of quality basic and commercial seeds to states and other agencies for distribution among farmers. NSSO produced a total quantity of 388.36 lakh dfls of commercial mulberry seed (Bivoltine hybrids: 314.24 lakh dfls and Cross-breed: 74.12 lakh dfls). Similarly, Vanya Seed organizations (BTSSO, MSSO & ESSO) have produced and distributed a total quantity of 52.06 lakh dfls of basic seed (tasar: 38.10 lakh; muga: 7.08 lakh; eri: 6.88 lakh).

Special Events

Shri Narendra Modi, Prime Minister of India, showing keen interest in the Buniyaad Reeling Machine at Textiles India 2017, held from June 30 - July 2, 2017, at Gandhinagar, Gujarat.

Smt. Smriti Zubin Irani, Union Minister of Textiles at the Silk Pavilion organized by the Central Silk Board at the Exhibition Hall of the Textiles India 2017 at Gandhinagar, Gujarat.

CSB signed three Memoranda of Understanding (MoUs) at the Textiles India 2017. MoU with Chinese Government on advanced technology and exchange of genetic material signed by Mr. Xie Dong, Deputy Director (General), Department of Agriculture of Guangxi Zhuang, Autonomous Region, China P.R. Ms. Deepika Govind, Designer, Bengaluru inked another MoU for jointly developing new designs and cluster-based products for commercialization. Ms. Bharati Devarajan, Managing Director, Five P Venture India Private Limited, Erode, Tamil Nadu signed MoU for development and commercialization of silk handloom products developed by CSB.

Smt. Smriti Zubin Irani, Union Minister of Textiles distributing cash incentives and seri-equipments under welfare scheme of the Ministry to beneficiaries belonging to SC community in a programme organized by MoT on the occasion of Baba Bhimrao Ambedkar Jayanti on April 14, 2017 at Vigyan Bhawan, New Delhi.

Central Silk Board observed Swachhata Pakhwada from May 1-15, 2017 under Swachh Bharat Mission.

Smt. Draupadi Murmu, Governor of Jharkhand inaugurating 54th Foundation Day celebrations of the Central Tasar Research & Training Institute, CSB, Ranchi organized on June 19, 2017. She also inaugurated the Gene Bank and Training Hostel.

Shri K.M. Hanumantharayappa, Chairman, CSB discussed development of sericulture industry in Uttar Pradesh with Chief Minister, Shri Yogi Adityanath on June 12, 2017.

Shri Ajay Tamta, Minister of State for Textiles, chaired the 24th meeting of the Hindi Advisory Committee of MOT held at Thiruvananthapuram, Kerala on June 17, 2017.

FUNCTIONS & ORGANIZATIONAL SET-UP

FUNCTIONS & ORGANIZATIONAL SET-UP

Introduction

Central Silk Board (CSB), constituted in April, 1949, by an Act of Parliament (Act No.LXI of 1948), is a statutory body under Ministry of Textiles, Government of India, established for the development of sericulture and silk industry in the country. It is under the administrative control of Ministry of Textiles, Government of India and is an apex agency to oversee the growth and development of silk industry in India. The vision of CSB is "To see India emerge as the global silk leader" and aligned to this vision statement, the Board has planned its programmes and strategies for all the three distinct sectors *viz.*, (a) Silkworm Seed Production, (b) Farm Sector / Pre-cocoon Sector and (c) Industry or Post-cocoon Sector. The focus of sericulture sector during 2017-18 among other priorities was to increase production of quality bivoltine raw silk.

The functions/activities of CSB include research and development, frontline demonstration, maintenance of four-tier silkworm seed production network, leadership role in basic and commercial silkworm seed production, standardizing and instilling quality parameters in various production processes, promotion of Indian Silk in domestic and international markets and advising the Union Government on all matters concerning sericulture and silk industry. A network of 286 units located in different states is carrying out these activities. Organizational Chart of CSB and details of its units are at Annexure I (A & B).

Functions

CSB coordinates and assists in:

- Promotion of the development of silk industry by such measures as it thinks fit.
- Undertaking, assisting and encouraging scientific, technological and economic research in sericulture and silk sector.
- Production of basic and commercial silkworm seeds for supplementary assistance to various states.
- Improvement of raw silk marketing and brand promotion.
- Advising the Union Government on all matters relating to the development of silk industry including import and export of raw silk.
- Collection of sericulture statistics from various states.
- Preparation of reports related to silk industry for Ministry of Textiles, Government of India.

Constitution of the Board

The Board of CSB is comprised of 39 members appointed as per the powers and provisions conferred by Sub-Section-3 of Section-4 of the CSB Act 1948, for a period of 3 years. The new members nominated during 2017-18 are detailed in Table 2.1.

Table 2.1: New members nominated during 2017 -18			
#	Name and designation of nominated members	Period of nomination	Notification details
1.	Shri Rajit Ranjan Okhandiar, IFS Member Secretary	06.11.2017 to 05.11.2020	25011/14/17-Silk dtd. 21.12.2017 under section 4(3)(b)
2.	Shri P.C. Mohan Member of Parliament (LS)	10.08.17 to 09.08.2020	25012/5/2017-Silk dtd. 28.08.2017 under section 4(3)(c)
3.	Shri Nimmala Kristappa Member of Parliament (LS)	10.08.2017 to 09.08.2020	25012/5/2017-Silk dtd. 28.08.2017 under section 4(3)(c)
4.	Shri Jugal Kishore Sharma Member of Parliament (LS)	10.08.2017 to 09.08.2020	25012/5/2017-Silk dtd. 28.08.2017 under section 4(3)(c)
5.	Dr. Mahendra Nath Pandey Member of Parliament (LS)	21.12.2017 to 20.12.2020	25012/5/2017-Silk dtd. 31.01.2018 under section 4(3)(c)
6.	Shri M. Maheshwar Rao, IAS Secretary, Horticulture, Agriculture & Sericulture Dept., Govt. of Karnataka	31.01.2018 to 30.01.2021	25011/4/2017-Silk dtd. 31.01.2018 under section 4(3)(d)
7.	Shri K.S. Manjunath, IAS Commissioner for Sericulture Dept., & Director of Sericulture, Govt. of Karnataka	31.01.2018 to 30.01.2021	25011/4/2017-Silk dtd. 31.01.2018 under section 4(3)(d)
8.	Shri Yogesh, S/o Shri Shivananjappa, Arakalagudu, Hassan Dist., Karnataka	31.01.2018 to 30.01.2021	25011/4/2017-Silk dtd. 31.01.2018 under section 4(3)(d)
9.	Shri K. Mudde Gowda, S/o Shri Kempe Gowda, Kempaiana Hundi, T. Narasipura TQ., Mysuru, Karnataka	31.01.2018 to 30.01.2021	25011/4/2017-Silk dtd. 31.01.2018 under section 4(3)(d)
10.	Shri P. Somanna, S/o Late Puttaswamy, Nanjangud TQ., Mysuru, Karnataka	31.01.2018 to 30.01.2021	25011/4/2017-Silk dtd. 31.01.2018 under section 4(3)(d)
11.	Tmt. P. Sri Venkada Priya, IAS Director of Sericulture, Govt. of Tamil Nadu, Salem, Tamil Nadu	27.10.2017 to 26.10.2020	25011/4/2017-Silk 27.10.2017 under section 4(3)(e)
12.	Smt. Madhumita Choudhury, IAS Commissioner of Textiles & Sericulture, Govt. of West Bengal, Kolkata, WB	31.01.2018 to 30.01.2021	25011/4/2017-Silk dtd. 31.01.2018 under section 4(3)(f)
13.	Shri Chiranjiv Choudhary, IFS Commissioner of Sericulture, Govt. of Andhra Pradesh, Guntur, AP	31.01.2018 to 30.01.2021	25011/4/2017-Silk dtd. 31.01.2018 under section 4(3)(g)
14.	Shri Mukta Nath Saikia, ACS Director of Sericulture, Govt. of Assam, Guwahati, Assam	08.12.2017 to 07.12.2020	25011/4/2017-Silk dtd. 08.12.2018 under section 4(3)(g)
15.	Shri Saket Kumar, IAS Director, Handloom & Seri. Department, Govt. of Bihar, Patna, Bihar	08.12.2017 to 07.12.2020	25011/4/2017-Silk dtd. 08.12.2018 under section 4(3)(g)
16.	Dr. Madhu Khare, IAS Commissioner of Sericulture, Govt. of Madhya Pradesh, Bhopal, MP	27.10.2017 to 26.10.2020	25011/4/2017-Silk 27.10.2017 under section 4(3)(g)
17.	Shri Mohmaad Afzal Bhat, IAS Principal Secretary, Govt. of J & K, Srinagar, J & K	31.01.2018 to 30.01.2021	25011/4/2017-Silk dtd. 31.01.2018 under section 4(3)(h)

List of Members of the Board as on 31.03.2018 under different sections is at Annexure–II. During the period under report, one Standing Committee Meeting and one Board Meeting were held on 23.01.2018 at Guwahati, Assam.

Changes in Senior Level Officers

Shri Rajit Ranjan Okhandiar, IFS has assumed the charge of Member Secretary, Central Silk Board on 06.11.2017 as per DoPT Order No.10/9/2017-EO/SM-1, dated 09.10.2017. Consequent upon the superannuation of Dr. Kalidas Mandal, Director (Tech), Dr. R.K. Mishra, Director, NSSO, has taken over additional charge of Director (Tech) at the Secretariat, Central Silk Board, Bengaluru on 28.03.2018.

Staff Strength

The group-wise sanctioned strength and working strength of CSB as on 31.03.2018 is indicated in Table 2.2.

Table 2.2: Central Silk Board staff strength as on 31.03.2018

Group	Sanctioned	Filled	Gen	SC	ST	OBC	PWD	Total
A	725	557	334	109	49	62	3	557
B	1358	1241	798	232	121	75	15	1241
C	1289	1131	559	307	146	104	15	1131
D	6	6	4	1	1	--	--	6
Total	3378	2935	1695	649	317	241	33	2935
%			57.75	22.11	10.80	8.21	1.12	100

The Board has recruited 18 officers and staff in different categories (Group A - 3, Group B - 3 and Group C - 12) against existing vacancies. During the same period, 239 officers and staff in different categories (Group A - 71, Group B - 91 and Group C - 77) superannuated/resigned/expired/voluntarily retired from the Board's services.

Implementation of Reservation Policy

Central Silk Board has been following the reservation policy as per the directions of Government of India for persons belonging to Scheduled Castes, Scheduled Tribes and Other Backward Classes under direct recruitment and also for promotions. Apart from the above, the reservation policy is also extended to the Persons with Disabilities for direct recruitment in all groups and for promotion under Group 'C' category under the Equal Opportunities, Protections of Rights and Full Participation Act, 1995 of Government of India.

Vigilance

a) Measures taken to strengthen Preventive Vigilance by streamlining of procedures

The units of Central Silk Board, which are considered sensitive, have been identified and measures, for preventive vigilance, surveillance and detection, have been taken. Besides, Chief Vigilance Officer of Central Silk Board, the Directors / Officers-In-Charge of Central Silk Board stationed at different zones have been entrusted with the task of carrying out surprise inspections of the units / sensitive areas, clearly demarcating their areas of jurisdiction. The Inspection Reports, as and when received are scrutinized and action taken wherever necessary. However, during the period 2017-18, there arose no necessity to initiate any disciplinary proceeding based on such reports. An Internal Audit Wing, supported by Zonal Audit Teams of different zones, has been conducting the internal audit on the accounts of the units. The Directors of the Research Institutes / Research Stations and the officers of the rank of Scientist-D holding independent charge of the various units have been delegated with powers to function as Disciplinary Authority in respect of certain categories of officials. The complaints and petitions received are examined and action taken as and when a prima facie case is established. During the period under reference, 37 complaints were received, out of which, 35 were disposed off and as on 31.03.2018, two complaints were pending for disposal.

b) Expediting completion of Preliminary Investigations / Oral Inquiries

Preliminary investigations, wherever ordered, are being carried out as early as possible and action is being taken on the findings of the Preliminary Investigation Officers. As on 31-03-2018, two disciplinary cases were pending for disposal. For the disciplinary cases initiated in Central Silk Board under Rule-14 of Central Civil Services (Classification, Control & Appeal) Rules, 1965, *viz.,* Major Penalty Proceedings, serving as well as retired officers of Central Silk Board are being appointed as the Inquiry Officers, with instructions to complete the inquiry process within the specified time limit. Five Retired Judicial Officers (Retired District Sessions Judges) have been empanelled to be appointed as the Inquiry Officers, as and when disciplinary cases crop up.

c) Sexual Harassment Complaints

As regards complaints relating to sexual harassment at work places received from women employees / women farm workers of Central Silk Board, Complaints Committees have been constituted both at Secretariat and Institutes' level to act as Inquiring Authority in cases involving such complaints.

d) Observance of Vigilance Awareness Week

In accordance with the guidelines issued by the Ministry / Central Vigilance Commission, Vigilance Awareness Week was observed at Central Silk Board's Secretariat and at all its subordinate units between 30-10-2017 and 04-11-2017.

e) Implementation of Right to Information Act, 2005

Under the Right to Information Act 2005, 37 CPIOs and 215 APIOs have been designated at CSB Secretariat and field units. During the year, the Public Information Cell has received 153 applications from the public, of which, 10 applications were pending for disposal as on March 31, 2018. Twelve appeals were also received during the year, of which, two appeals were pending as on March 31, 2018. Copies of applications received and replies furnished to the citizen were uploaded in CSB's website www.csb.gov.in.

Parliament Related Matters

a) Parliamentary Questions

During the year 2017-18, CSB furnished reply materials for 71 Parliamentary Questions that were related to Ministry of Textiles, as per the break-up given in Table 2.3.

Table 2.3: Reply furnished to Parliamentary Questions

House of Parliament	Monsoon Session July-August	Winter Session December-January	Budget session February-March	Total
Lok Sabha	18	9	16	43
Rajya Sabha	6	6	16	28
Total	**24**	**15**	**32**	**71**

b) Parliamentary Committee Meetings

- Parliamentary Standing Committee on Subordinate Legislation held a meeting with the representatives of CSB/MOT at Bengaluru on 27.05.2017.
- Department related Parliamentary Standing Committee on Commerce visited Bengaluru on 19.01.2018 for an interaction meeting with the representatives of CSB on the subject "Impact of cheap Chinese goods on Indian Industry".

Tariff on Silk Products & Anti-Dumping Duty

a) Goods & Services Tax (GST)

Silk and silk products were not under tax structure all these years. However, silk and silk products, except silkworm egg (seed), cocoon, raw silk and silk waste, have been brought under tax

structure in the recently introduced Goods & Service Tax (GST). GST on different silk products is indicated in Table 2.4.

Table 2.4: GST on different silk products

#	Item	ITC HS Code	GST (%)
1	Silkworm egg	5001	0
2	Cocoon	5001	0
3	Raw Silk	5002	0
4	Silk waste	5003	0
5	Silk yarn	5004/05/06	5
6	Silk fabric	5007	5
7	Silk Testing Services	9983	18
8	Silk Garments	6101- 6117	5% & 12% *
9	Silk Machinery	8445	18
10	All other Services (job works)	9988	5

** 5% if the unit price is upto Rs.1000 & 12% if the unit price is above Rs.1000*

b) Customs Duty on import of silk Items

Basic Customs duty and total duty including IGST on import of various silk products are indicated in Table 2.5.

Table 2.5: Customs Duty on import of Silk Items

#	Product	ITC HS Code	Basic Duty (%)	IGST (%)	Total Duty* (%)
1	Cocoon suitable for reeling	5001	30	0	30.09
2	Raw Silk	5002	10	0	10.30
3	Silk Waste	5003	15	0	15.40
4	Silk Yarn	5004-5006	10	5	15.82
5	Silk Fabric	5007	20	5	25.82
6	Silk Machinery **	8445	5	18	24.74

** Inclusive of Cess; ** Concessional Customs Duty of 0% on import of automatic reeling machinery*

c) Anti-dumping Duty

Anti-dumping duty of US $ 1.85 per kg is in place on import of raw silk of 3A Grade and below, originated in or exported from China PR, vide Gazette Notification Extraordinary, Part I, Section 1, Notification number 14/17/2014-DGAD, dated December 4, 2015. The above anti-dumping duty shall be in force till December, 2020. At present, there is no anti-dumping duty on import of silk fabrics from China PR.

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PROJECTS & SCHEMES

PROJECTS & SCHEMES

CENTRAL SECTOR SCHEMES

Integrated Scheme for Development of Silk Industry (Silk Samagra)

CSB is implementing a Central Sector Plan Scheme entitled "Integrated Scheme for the Development of Silk Industry" (ISDSI-Silk Samagra) aimed to increase the quality and productivity of silk and thereby enhance the income of the stakeholders. The scheme consists of following 4 components:

A. Research & Development, Transfer of Technology, Training and IT initiatives
B. Seed Organization
C. Coordination and Market Development
D. Quality Certification System

The scheme is implemented through nested units of CSB located in different states in close co-ordination with State Sericulture Departments. The component-wise details with year-wise break of allocation approved by Govt. of India are given in Table 3.1.

Scheme Objectives

All the Components of Silk Samagra are interlinked and aimed at a common goal. While the R&D units develop technology packages,

Table 3.1: Component and year-wise break-up of allocation under ISDSI (Silk Samagra)

(*Rs. in crore*)

#	Scheme Components	Fund Allocation (Central Share)			
		2017-18	2018-19	2019-20	Total
1	Research & Development, Training & IT Initiatives	309.37	394.05	378.49	1081.91
2	Seed Organization	178.16	245.47	217.07	640.70
3	Co-ordination & Market Development	139.96	156.64	132.27	428.87
4	Quality Certification System and Export/Brand promotion & Technology Up-gradation	2.50	3.60	4.10	10.20
Total		629.99	799.76	731.93	2,161.68
	Of which provision for Beneficiary oriented Components implemented by States (Including SCSP,TSP and NE) (Provisional)	*93.22*	*155.68*	*174.10*	*423.00*

Note: The Scheme outlay of Rs.2161.68 crore includes a provision of Rs. 1400 crore towards administrative/establishment expenditure like payment of salaries & allowances, wages, pension & retirement benefits etc. for CSB employees and pensioners and balance Rs.761.68 crore is towards development of silk industry. This encompasses Rs.423 crore for releasing to States for implementation of Beneficiary oriented interventions.

impart training on improved technology programmes to stake holders and transfer the technology to the field through front line demonstration, the seed production units produce basic and commercial seed of the improved silkworm breeds developed by the Research Institutes. Central Silk Board conceives and implements the developmental schemes in coordination with the State Govt. to ensure that the output generated from these R& D programmes are disseminated to the stake holders for the development of silk industry. The units under the Quality Certification System support to maintain and certify the quality standards set by the R&D units for silkworm seed, cocoon, raw silk and silk products covering the entire silk value chain.

The Silk Samagra also comprises of various beneficiary oriented components under Mulberry, Vanya and Post-cocoon Sectors. The programme is continued from XII Plan for implementation, with certain modifications, for implementation in a project-mode during 2017-18 to 2019-20. The programme catalyses the efforts of State Governments to improve the quality, productivity and production of raw silk, besides generating employment opportunities, particularly in the rural areas.

(a) Research & Development, Transfer of Technology, Training & IT Initiatives

- Ongoing Research and development in nine main Research Institutes (core research), its nested 22 Regional Sericulture Research Stations (fine tune the technology for local needs and front line demonstration of technologies).
- Undertake Research and Development (R&D) activities through developing improved food plants, silkworm breeds, standardization of silkworm seed production techniques, improved package of practices for silkworm rearing.
- Developing post cocoon technologies and machineries in post cocoon operations, by-product utilization, product development & diversification.
- Technology dissemination to identified clusters through Cluster Promotion Programme (CPP), Institute Village Linked Programme (IVLP).
- Trainers training, technology up-gradation programme, resource development programme, beneficiary empowerment, capsule training for farmers / reelers, krishi mela, *etc.*
- To utilize IT applications in disseminating technologies, exchanging information, dissemination through SILKS (Sericulture Information Linked Knowledge System) portal, Farmers Reelers Data Base (FRDB), price details through SMS.

(b) Seed Organization

- Maintain the four tier seed multiplication network, supply of nucleus and basic seeds to own units and state seed production units.
- Leadership role in bivoltine commercial seed production and private participation for enhanced seed production.
- Promotion of private graineurs in vanya silks.
- Technical support to the state seed production units, private graineurs.
- Institutionalization of quality certification to own units and facilitate the same for state and private units.

- Holistic implementation of Silkworm Seed Act for instilling quality parameters in the seed production network.

(c) Co-ordination & Market Development

- Conceiving, implementing and monitoring of plan programmes through CSB HQ and Regional Offices.
- Forging effective synergies in dovetailing assistance from schemes of other Ministries through convergence.
- Statistical analysis of silk production, import and export.
- Publicity, accounts management, internal audit, Official language implementation.
- Coordination with Ministry and State Sericulture Departments.
- Price stabilization of tasar and muga cocoons through Raw Material Banks, administrative and financial managements of CSB units.

(d) Quality Certification System and Export / Brand promotion & Technology Up-gradation

- Institution and promotion of quality in silkworm seed, cocoon and raw silk.
- Ensuring quality and purity of silk in the traded end products by way of promotion of pure silk products through Silk Mark.
- Cocoon Testing Centres to promote quality based pricing to fetch better price for the primary producers.
- Raw silk Testing Centres to promote value based product thereby creating an impetus towards quality improvement of raw silk. The testing of raw silk will benefit reelers/ twisters/weavers in producing quality products.

(e) Beneficiary Oriented Schemes under R&D and Seed Organization

Under R & D and Seed Organization components of Silk Samagra, certain beneficiary oriented critical interventions for promotion of mulberry, vanya and pos-cocoon sectors are implemented. These interventions are important tools for transfer and adoption of improved technology packages developed by the Research Institutes of CSB. The beneficiary oriented interventions covers the major areas namely (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.

Scheme Highlights

1. Emphasis on collaborative research to strengthen genetic base and hybrid vigour.
2. Promote R&D to increase crop cycles, increase systematic plantation of vanya silks for controlled rearing.
3. Promote horizontal expansion of sericulture in non-traditional areas including North-East through cluster approach.
4. Promote soil testing and issue of Soil Health Card for beneficiaries.
5. Promote organic farming and eco-friendly silk- Vanya Silk.
6. Provide critical input support to the beneficiaries for productivity and quality improvement from kisan nursery to fabric production.
7. Use of silkworm by-products (pupa) for

poultry feed, sericin for cosmetic applications and product diversification into non-woven fabrics, silk denim, silk knit etc., for added value realization.

8. Upgrade State Seed Multiplication facilities and encourage private participation in seed production to match the raw silk production target.
9. Strengthen Seed Act through registration and reporting by seed production centres, basic seed farms and extension centres automated by developing web based software.
10. Upgrade reeling technology and promote indigenously developed ARM & improved vanya reeling devices under "Make in India" programme.
11. Promote credit flow to sericulture to promote SHG / Cluster approach.
12. Brand promotion – Generic promotion of Indian Silk and create global image for Indian Silk products.
13. Extension of single window based SILKS (Sericulture Information Linked Knowledge System) portal to cover more districts for sericulture expansion.
14. Ensure development of sericulture Database for better planning. Free SMS service on cocoon & raw silk price to all registered farmers & reelers, and state functionaries.
15. Provide Mobile apps, audio-video spots to farmers under Institute Village Linked Programme (IVLP) and Cluster Promotion Programme (CPP).

Expected Outcome from the Scheme

i. To increase the silk production from the level of 30348 MT during 2016-17 to 38500 MT by the end of 2019-20.
ii. Production of mulberry (multivoltine and bivoltine) silk to increase from 20478 MT to 27000 MT including bivoltine silk from 5266 MT to 8500 MT.
iii. Vanya (muga, eri and tasar) silk production to increase from 9075 MT to 11500 MT.
iv. Increasing production of 4A grade mulberry (bivoltine) silk from about 15% to 25%.
v. The productivity of mulberry raw silk to increase from 100 kg/ha/year to 111 kg/ha/year.
vi. Increase in employment from 85 lakh persons to 100 lakh by 2019-20.
vii. To develop 453 kisan nurseries for raising saplings of improved varieties of mulberry to cover new plantation.
viii. For enhancing the quality of cocoon and their harvest, 131 new Chawki Rearing Centres (CRCs) will be established for scientific handling of silkworm eggs and rearing of young age silkworm larvae under controlled conditions.
ix. To facilitate improved reeling, 81 Hot air driers will be established for cocoon drying.
x. To facilitate efficient and quality silk production and improving the working conditions in the reeling segment, 162 motorized charkha / reeling devices and 130 multi-end reeling machines will replace traditional reeling machinery.
xi. In order to give more thrust on production of bivoltine silk, 29 units of Automatic Reeling Machine, developed indigenously by the CSB, will be established.
xii. 19 Basic Seed Farms and 20 Silkworm Seed

Production Centres will be strengthened to enhance the silkworm seed production from 500 lakh disease free layings (dfls) in 2016-17 to 595 lakh dfls by 2020.

Sharing Pattern under Beneficiary Components

The funding pattern (%) for individual beneficiary oriented Silk Samagra components is given in Table 3.2.

Table 3.2: Silk Samagra - Sharing Pattern under Beneficiary Components

Category	GOI (CSB)	State	Benef-iciary
General States	50	25	25
General States – For SCSP & TSP	65	25	10
Special Status States & NE	80	10	10
SCSP/TSP	80	10	10
Group Activity	100%	--	--

However, 100% funding (CSB) is eligible for the group activities as these activities are very limited and proposed to be carried out / implemented by CSB institutes. The group activities are mainly meant for demonstration of latest technologies for adoption by farmers / stakeholders as a model, like CRC, CFC etc. The group activity can also be taken up by State Departments in their farms. If the group activities are implemented by states/NGOs, then the sharing pattern will be 75:25 by GoI & State / NGO / Beneficiary. The implementation of this is monitored by both CSB and states.

A statement indicating state-wise details of funds released to states under the beneficiary components of "Silk Samagra" during the years 2016-17 and 2017-18 is at Annexure-III.

Help Line

A helpline and exclusive e-mail Id, Facebook account & Twitter handles as under have been created to address the grievances of the stakeholders and to create awareness and sharing of information:

Helpline No: 080-26684431

Facebook: https://www.facebook.com/central.silkboard

Twitter : http://twitter.com/csbmot/

Website : http://www.csb.gov.in/

ISDSI Achievements

A. RESEARCH & DEVELOPMENT, TRANSFER OF TECHNOLOGY, TRAINING AND IT INITIATIVES

I. Research & Development

Research and Development Institutes of CSB have been striving to develop new host plant varieties, silkworm breeds, technologies, machineries to enhance the production and productivity of quality silk in the country. Considerable progress has been made both in mulberry and vanya silk sectors to provide necessary technical and scientific inputs to strengthen the silk industry thereby providing economic benefit to the stakeholders in all the areas of sericulture starting from egg to fabric production and marketing. CSB has also taken many steps to transfer the benefits of research and development to the end users, prominent among them are the Cluster Promotion Programme (CPP), Institute Village Linkage Programme (IVLP), Seri Model Village etc. These efforts have helped to boost the production of quality bivoltine silk to meet the demands of the domestic market.

The major institutes, which are engaged in R&D of mulberry silk sector are Central Sericultural Research & Training Institutes at Mysuru (Karnataka), Berhampore (West Bengal) and Pampore (Jammu & Kashmir) and those involved in vanya silk sector are Central Tasar Research & Training Institute at Ranchi (Jharkhand) and Central Muga Eri Research & Training Institute, Lahdoigarh (Assam). Further, Silkworm Seed Testing Laboratory at Bengaluru provides the technical support to the seed sectors of both mulberry and non-mulberry silks and Seri Biotech Research Laboratory at Bengaluru assists all the research institutes by carrying out research on biotechnological aspects. The Central Sericultural Germplasm Resource Centre, Hosur, Tamil Nadu maintains and provides genetic resources of mulberry silkworm and its host plants while, the Central Silk Technological Research Institute, Bengaluru looks after the R&D requirements of the post-cocoon sector of both mulberry and vanya silk industry. Some of the important activities and major outputs of the R&D activities of these institutes during 2017-18 are summarized below:

Central Sericultural Research and Training Institute, Mysuru (Karnataka)

This institute caters to the technological needs of mulberry sericulture in the states of Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Telangana, Maharashtra and Madhya Pradesh. The salient achievements made during the period are as follow:

Mulberry Crop Improvement, Production and Protection

- Authorized G4, a new mulberry variety with the leaf yield potential of 60 MT/ha/year, for commercial use in irrigated conditions.
- Identified 32 mulberry germplasm accessions immune to root-knot and root-rot and used in breeding to develop resistant varieties.
- Issued 12000 Soil Health Cards to sericulture farmers in Andhra Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Tamil Nadu and Telangana.
- Tested "Rot-fix" in the field for management of root-rot disease and found that it is capable of reviving 68-74% of infected plants.
- Tested Ankur, a combination of organic and inorganic nutrients, under a consultancy project with M/s. Seri-Con Technologies Pvt. Ltd., Bengaluru and observed 14% increase in mulberry leaf yield and 11% increase in cocoon yield.
- Established seed gardens of G2, G4, MSG2 and AGB8 varieties to supply seed materials to the farmers.

Silkworm Crop Improvement, Production and Protection

- Authorized G11 x G19, a bivoltine double hybrid with yield potential of 68 kg cocoons/100 dfls, suitable for sub-optimal conditions for commercial exploitation in Andhra Pradesh, Karnataka, Kerala, Maharashtra, Tamil Nadu and Telangana.
- Developed a thermo-tolerant bivoltine double hybrid (N21 x N56) with yield potential of 72 kg cocoons/100 dfls with 21.5% shell, through Molecular Marker Assisted Selection (MAS) breeding.
- Developed multi-viral resistant bivoltine

breeds/lines resistant to silkworm viruses (BmDNV1, BmNPV & BmIFV). Two new productive bivoltine hybrids were developed *viz.,* CSR-52N x CSR-26N and (CSR-52N.S-8N) x (CSR-16N.CSR-26N) with BmNPV tolerance.

- Utilizing the genetic resources obtained from Bulgaria, developed a new bivoltine double hybrid with high silk content (24%) and yield potential of 75 kg cocoon yield/100 dfls, which is under laboratory trials.
- Through directional selection, isolated two improved Pure Mysuru lines for higher productivity and silk quality.
- Developed two new improved cross breeds ICB17 x S8 and ICB 14 x N23 with a yield potential of 70 kg/100 dfls and 2A-3A silk.
- Undertaken large-scale field trials of Cauvery Gold (MV1 x S8), an ICB with 2A grade silk, and cocoon yield of 70 kg/100 dfls in Karnataka, Tamil Nadu and Andhra Pradesh.
- Developed LAMP-a technique to detect spores of pebrine, *Nosema bombycis*, and validated with seed stocks. The same technique is being tried on muga silkworms also.
- Identified and characterized sex pheromones (Z-11 hexadecenal, octadecane & Z-e-7, 11- hexadecenal acetate) for trapping mulberry leaf roller (*Diaphania pulverulentalis*) male insects.
- Developed sex-pheromone based "Uzilure", in collaboration with National Bureau of Agricultural Insect Resources (NBAIR), Bengaluru, and was evaluated for effective management of uzifly in the laboratory and field conditions.
- A scale-up mulberry silkworm pupa oil extraction protocol from dried pupal powder was established and higher levels of α-linolenic acid were recovered by chemical (92%) and enzymatic (83%) methods.

Patents and Commercialization

- Submitted application for Patent of Rot-fix – A broad spectrum eco-friendly formulation to control Root Rot disease in mulberry, through National Research Development Corporation (NRDC), New Delhi.
- Commercialized ANKUR, an organic and inorganic nutrient supplement for soil fertility and health through M/s. Seri-Con Technologies, Bengaluru.
- Commercialized ANKUSH, an eco & user-friendly silkworm body and rearing seat disinfectant through M/s. Pure Chemicals Laboratory, Bengaluru.
- Commercialized Rot-fix, a broad spectrum eco-friendly formulation for control of Root Rot disease in mulberry through M/s. Kamath, Chlorotech, Bengaluru.
- Renewed the license for commercialization of "Samruddhi" (Juvenile Hormone Analogue) JHA for enhancing cocoon production to M/s. Seri-Gro Products, Bengaluru.
- Renewed the license for commercialization of "Serimore", silkworm growth promoter to M/s. Healthline Pvt. Ltd. [Sericare], Bengaluru.
- Renewed the license for commercialization of "Sanitech Super-40000 ppm", a general disinfectant to M/s. Healthline Pvt. Ltd. [Sericare], Bengaluru.

Central Sericultural Research and Training Institute, Berhampore (West Bengal)

Central Sericultural Research and Training Institute, Berhampore with 3 Regional Sericultural Research Stations (RSRSs) and 13 Research Extension Centers (RECs) take care of sericulture industry in the Eastern and North-eastern regions by providing necessary technical and scientific inputs. The major achievements made during the year 2017-18 are as follows:

Mulberry Crop Improvement, Production and Protection

- Identified C-9, a high yielding mulberry genotype, suitable for low input soil with annual leaf yield of 49.89 & 34.01 MT/-ha/yr, respectively, as compared to the control variety S-1635 (44.13 & 26.84 MT/-ha/yr, respectively) under full and half fertilizer dose application.
- Identified 30 promising mulberry genotypes under moisture stress condition that can yield better than the existing rainfed varieties with significantly higher annual leaf yield (>1.963 kg/ plant) over C-2038 (1.88 kg/yr) along with better physiological traits *viz.,* specific leaf area (<250 g cm-2), chlorophyll content (>15 µgcm2), leaf size (>150 cm2) and moisture content (>75%).
- Foliar spray of seaweed extract (*Ascophyllum nodosum* @ 0.5 ml/L; two sprays on 21 and 28 days after pruning) increased leaf yield by 11% as compared to that of the control variety S-1635 (328.33 g/plant).
- Studied the carbon capturing ability of mulberry and found that mulberry under moderate tillage with grass cover condition captured carbon @ 632 kg/ha/crop and the same in intensive tillage without grass cover was 576 kg /ha/crop.
- Issued 5640 Soil Health Cards.
- A powdery mildew resistant, C-1360, developed and included in the next phase of the All India Coordinated Experiments on mulberry.
- Identified two bacterial leaf spot (BLS) resistant lines exhibiting ~ 9-16% more leaf biomass than C-2038 (50-53 MT/ha/yr).
- Developed two molecular markers of 182 bps (MM68) and 190 bps (MM128) size having strong correlation with powdery mildew resistance.
- Evaluated 154 mulberry accessions and identified 10 accessions relatively tolerant to white fly infestation for their utilization in breeding.

Silkworm Improvement, Productivity and Protection

- Authorized bivoltine hybrid B.Con.1 x B.Con.4 and the Multi x Bi hybrid M6DPC x (SK6 x SK7) for commercial use.
- Developed two new hybrids HTH3 × HTH6 and HTH4 × HTH9 tolerant (>65%) to high temperature and high humidity (35 ± 1°C & 85 ± 5%).
- Developed two new bivoltine single hybrids BHP-2 x BHP-8 and BHP-3 x BHP-8 with higher cocoon yield over SK-6 x SK-7 and B. Con.1 x B. Con.4.
- Developed five breeds with diapause Inhibiting (Id) characters *viz.,* 1. M.Con.4Id (Pseudo pigmented Diapause Inhibitor Yellow Oval shaped cocoon), 2. M.Con.4 Id (Non pseudo Diapause Inhibitor Yellow

Oval shaped cocoon), 3. M.Con.4 Id (Pseudo Pigmented Butter Colour cocoon), 4. B.Con.4 Id (Pseudo Pigmented Butter Colour cocoon) and 5. BHB Id (Pseudo Pigmented White Colour Oval &Dumbbell). Using them, two cross breeds (Bivoltine x Multivoltine) developed, seeds of which showed more than 90% hatching without acid treatment.

- Extracts of three phototrophic bacterial strains belonging to the genera *Rhodovulum*, *Rhodobacter* & *Rhodopseudomonas* were tested for disease management in silkworm and no toxic effect on survival, cocoon shell weight and filament length was observed.
- Cloned full length lipoprotein gene in *Pichia pastoris* and cultured in liquid media to extract proteins from both cells and supernatants. The recombinant protein is used for antibacterial assay.
- Tested thermo-tolerant abilities of 11 bivoltine breeds on the basis of survival, pupation and reactive oxygen species (ROS) stabilisation abilities at 35°C with 75% RH against the control of 25°C. Three breeds (B.Con.4 > B.Con.1 > BHR-3) showed thermo-tolerance on the basis of survival and superoxide dismutase (SOD) activity. Highly-significant correlation of SOD activity with survival indicated that this enzyme can be used as marker to select thermo tolerant silkworms.

IT Initiatives: Development of data base and technology

- Created database of 1349 farmers and through the *m-Kisan* portal sent 123 messages in different languages (*viz.*, Bengali, Hindi, Oriya, Nepali, Manipuri, Khasi in English script) on forewarning and preventive measures.
- Enrolled 4534 farmers in "Seri-5k" Portal, and up-loaded the crop-wise data.
- Uploaded in the institute website (www.-csrtiber.res.in) all on-going and concluded research projects for e-monitoring of R&D activities.
- Prepared and distributed two videos on Tour to CSR&TI, Berhampore & History of Silk in Murshidabad and also uploaded in the institute website (http://www.-csrtiber.res.in/awareness_media.html).
- Broadcast 24 episodes of "Resham Katha" through All India Radio on sericulture improvement for dissemination of modern technologies to the farmers.
- Participated 8 times in TV programmes to popularize the technologies developed by the institute.
- Uploaded in the institute website http://www.csrtiber.res.in/Brochure_pamphlets/ Brochure.htm all brochures/ pamphlets published recently in different vernaculars
- Uploaded in the website 3 success stories *viz.*, Anisur Rahaman - A role model of young sericulturist; Women power shows the way to success in sericulture and Women - a major player in sericulture.
- Organized 381 extension communication programmes *viz.*, Awareness Programmes, Audio-visual Programmes, Exhibitions, Field demonstrations etc., at the farmers' level with a multi-fold approach of dissemination of farmer friendly technologies,

catering to the farmers' needs and also pre-warning the farmers of any upcoming field problem and sensitized 21416 stake holders.

Central Sericultural Research & Training Institute, Pampore (Jammu & Kashmir)

Mulberry Crop Improvement, Production and Protection

- Developed a new mulberry variety PPR-1. 1600 saplings of PPR-1 were planted for multiplication and 10000 cuttings were planted in nursery beds for raising the saplings.
- Developed a technology for the management of root-rot disease in Kashmir region.
- Protoplasts isolated from four superior temperate mulberry varieties were fused in different combinations and callus was induced from the fused protoplasts.
- Developed a micro-propagation protocol with a success rate of 83% for the variety Goshoerami. The cost of production of one-year old single plant was worked out to be Rs.9 against Rs.14 for the same through root graft and Rs.18 through poly house techniques.
- Analyzed biochemical characters of seven mulberry varieties suitable for J&K during Spring and Autumn. The variety KNG showed higher concentrations of protein and Ichinose and Tr-10 showed higher chlorophyll content.
- Issued 1000 Digital Soil Health cards and uploaded on the web portal. 500 more soil samples were collected and analyzed.

Silkworm Improvement, Productivity and Protection

- Developed 16 new breeding lines and the Line-14 recorded an average fecundity of 530 with 98.86% hatching and cocoon yield of 74.75 kg/100 dfls.
- Identified three Oval x Oval hybrids [*viz.*, CSR46 × APS9 (O1), APS9 × BBE 198 (O2) and APS5 × APS9 (O3)] and one Dumbbell x Dumbbell hybrid (SK6 × SK7) suitable for autumn rearing in North India. APS9 × BBE 198 (O2) x (SK6 × SK7) and its reciprocal yielded 81 kg cocoon / 100 Dfls and 84 kg cocoon for APS5 × APS9 (O3) x (SK6 × SK7) at Salem (TN).
- Supplemented amino acids through fortified mulberry leaf to silkworms. 12-13% increase in larval weight, shell weight (0.39 g), SR% and silk filament length (916 m) was noticed as compared to control.
- Prepared BmNPV antigen for the production of poly clonal antibodies to develop an antibody based biosensor for early and rapid detection of silkworm viruses at CRCs.

Central Sericultural Germplasm Resources Centre, Hosur (Tamil Nadu)

Central Sericultural Germplasm Resources Centre, Hosur is the premier Seri-germplasm Institute in India conserving both silkworm and host plants. It is recognised by National Bureau of Plant Genetic Resources, New Delhi and National Bureau of Agricultural Insect Resources, Bengaluru as National Active Germplasm Site (NAGS) for mulberry and silkworm germplasm, respecti-vely. The major achievements made during the year 2017-18 are as follows:

- Standardized the collection and processing of sperms from seminal vesicle, recovery of semen from Bursa copulatrix & spermatheca and *A. mylitta* for *cryopreservation*. Artificial insemination with preserved semen recorded 25% hatching of the egg.
- Collected 55 new mulberry accessions from Karnataka, Arunachal Pradesh, Rajasthan and Jammu & Kashmir.
- Added 16 new mulberry accessions into the *ex-situ* field gene bank to take the total number of accessions being conserved to 1292 (285 exotic and 1007 indigenous)
- Supplied 1125 mulberry accessions to 32 indenters for research purpose.
- Added 9 new silkworm accessions [4 BV, 3 mutants and 2 MV] to the silkworm germplasm stock to take the total to accessions to 475 (83 MV, 369 BV and 23 mutants)
- Supplied 177 bivoltine silkworm accessions to nine indenters in 26 spells and 274 multivoltine accessions to 11 indenters.

Seri Biotech Research Laboratory, Bengaluru (Karnataka)

Seri Biotech Research Laboratory, Bengaluru carries out intensive basic and applied research on silkworms and their host plants using modern biotechnological tools to improve productivity and quality of silk. The institute carries out cuting-edge research through a multi-disciplinary approach. The major achievements made during the reporting year are as follows:

- Screened 48 productive bivoltine silkworm accessions using nsd-2, a receptor gene, to identify DNV-2 resistant breeds.
- Introgressed DNV-2 resistance to CSR6 and CSR26 through marker assisted selection breeding.
- Developed two high yielding bivoltine silkworms breeds MASN6 and MASN7 tolerant to BmNPV and introduced DNV-2 resistance to it through nsd-2 marker assisted selection breeding.
- Analyzed 14 antifungal genes in selected 14 multivoltine and 14 bivoltine breeds and found differential expression of five genes *viz.,* amidase, gloverin, glucose transporter and neutral lipase the among races and were correlated with antifungal traits.
- Produced large quantities of dsRNA of lef1 gene in bacteria *E. coli* and fed to NPV infected silkworms to induce resistance. The results revealed silkworms fed with dsRNA showed 30-40% survivability upon challenged with NPV.
- Identified three molecular markers *viz.,* BGIBMGA009925, fib-L, and gfl1 associated with silk filament characters. Cloning and sequencing revealed deletions/insertions in gene sequence of gfl-1 in multivoltine races and no such variation noted in bivoltine races. NCBI BLAST showed 86% similarity of gfl-1 with the fibroin heavy chain in *Bombyx mandarina* intron/exon region.
- Produced silk fusion protein (fibroin and cecropin) in *Pichia pastoris* yeast.
- Evaluated the NPV-resistant silkworm breeds (MASN4, MASN6 & MASN7) developed through marker assisted selection breeding in fields and observed 75 – 90% survival except in summer season while maintaining good rearing and reeling characters.

- Sequenced whole genome of muga silkworm, *Antheraea assamensis* and it revealed the genome size is ~500 Million bases (Mb).
- Isolated the virus associated with tiger-band disease in oak tasar and LAMP technique was standardized to detect the virus at an early stage of development.

Silkworm Seed Technology Laboratory, Bengaluru (Karnataka)

Silkworm Seed Technology Laboratory, Bengaluru carries out R&D work to tackle various silkworm seed related problems and to develop suitable technologies for improving the quality of silkworm seed. The major achievements made during the reporting year are as follows:

- Developed silkworm seed preservation technology for nine multivoltine breeds / races *viz.,* three Nistari lines (Chalsa, Balapur and Debra) and six multivoltine races M12W, L14, APDR15, MH1, PM and Sarupat for preservation schedule of 30-40 days .
- Twelve host plant volatiles extracted at Indian Institute of Horticulture Research (IIHR), Bengaluru were screened for FC1 x FC2 hybrids at the time of oviposition. Three preliminary trials were conducted and promising volatiles has been shortlisted for further confirmation and chemical synthesis.
- Standardized the protocols for muga silkworm embryo isolation. Identification of different embryonic stages was carried out.
- 16 disease monitoring surveys were conducted in Karnataka, Andhra Pradesh and Tamil Nadu involving Karnataka State Sericulture Research and Development Institute, Thalaghattapura, CSR&TI, Mysuru and Andhra Pradesh State Sericulture Research and Development Institute , Hindupur in different BSFs / Seed area.
- The egg shell's samples, larvae and moths received from BSFs / SSPCs of NSSO and BV clusters / RSPs were tested. At CSGRC, Hosur, P3BSF, Mysuru and Hassan tested 1010 lots with 12603 samples.
- Quarantine testing was conducted for 6000 dfls received from M/s. VSSPC, Bengaluru and certified for export to USA.
- Twelve multivoltine breeds / Nistari lines (Debra, Chalsa and Balapur), M12W, Pure Mysuru, Sarupat, L14, APDR15 Mcon1, Mcon4, M6DPC, MH1; 4 Bivoltines breeds SK6, SK7, BCON1, BCON4 (West Bengal) and 1 Univoltine breed Barpat (J&K) were maintained true to their breed characters.
- Thirteen programmes were conducted on disease control and disinfection, mother moth examination, application of fertilizers and soil testing, hibernation schedules, embryo isolation technology, package of mulberry garden for seed crop rearing etc., and also conducted awareness programme on muscardine disease control. A total of 579 beneficiaries were exposed.

Central Tasar Research and Training Institute, Ranchi (Jharkhand)

Central Tasar Research and Training Institute is an ISO 9001:2008 accredited Institute, recognized as Centre of Excellence by the Ministry of Textiles in conducting Research & Development work and generation of skilled manpower to cater to the need of tasar sector,

both tropical and temperate. It develops technologies and transfers them to the field to improve the socio-economic status of the stakeholders associated with tasar culture. It provides support to all tasar growing states through its extension network of seven Regional Tasar Research Stations, ten Research Extension Centres and three P4 Silkworm Breeding Stations. The achievements of the Institute and its nested units during the year are as detailed below:

Host Plant Improvement, Production and Protection

- Issued 440 Soil Health Cards to tasar sericulture farmers.
- Tested 10 accessions of *T.arjuna* for drought tolerance and accession No.525 and No.523 were found superior in terms of higher stress tolerant index with better plant growth, physiological and bio-chemical characters.
- Isolated 57 Azotobacter isolates from different tasar rearing regions of West Singhbhum and tested the effect on plant growth and leaf nutrient content of tasar host plant in forest and block plantation.
- Protocol for testing phosphate solubilisation in PSB isolates using bromophenol blue dye was standardized.

Silkworm Improvement, Production and Protection

- Developed Pebrine Visualization Solution (PVS) to detect pebrine easily by enhancing the clarity of smear, removing of cellular debris, liberation and visibility of pebrine spores in the mother moth. Validated the efficacy of this technique in the field units in Andhra Pradesh, Chhattisgarh, Jharkhand, Maharashtra, Madhya Pradesh and Odisha.
- Developed two generations (S1 and S2) of thermo-tolerant lines by exposing at sub-lethal temperature. SCAR Markers were developed for identifying thermo-tolerant lines.
- Tested CTR-14 at 3 locations and the result showed 20-22% gain over control in productivity.
- Released 4,481 dfls of the tasar eco-race Andhra Local in core zone to conserve the eco race effectively and preserved 2100 seed cocoons.
- Produced 1,200 dfls of eco-race Bhandara under eco-race conservation and popularisation programme and preserved 12,430 seed cocoons.
- Produced 3,000 dfls of eco-race Sarihan and 2,200 dfls distributed to farmers and preserved 9,350 seed cocoons under eco-race conservation and popularisation programme.
- Preserved 10,005 seed cocoons of eco-race Sukinda.
- Morphometric analysis of cocoons and moths was done to assess the conservation status of tasar eco-races in Odisha.
- Collected information on the availability of wild cocoons in different eco pockets and prepared a predictive map using GIS and Remote Sensing data on availability of wild tasar populations. It is found that Keonjhar and Mayurbhanj districts are the main reservoir of wild tasar as well as the Nuapada area.

- Assessed single cocoon for cocoon, shell and pupal weight for male and female separately to develop tasar silkworm with high silk yield through recurrent selection.
- Purified and characterized sericin from cocoons of different eco-races of tasar silkworm. Studied the biological properties of sericin such as Hydrogen peroxide scavenging potential, DPPH scavenging potential, inhibition of LPX, anti tyrosinase and anti-elastase activity. Observed that sericin from Raily eco-race cocoons have higher quantity of tyrosin and anti-melanogenic activity as compared to sericin isolated from other eco-races and standard sericin available in the market.
- Undertaken mass-scale trail of Tasar Amrit (Semi-synthetic diet) at farmers' level in Hatgamharia, Kharsawan, Bengabad (Jharkhand), Baripada (Odisha), Kapistha (West Bengal) and Kathghora (Chhattisgarh). It reduces the brushing loss & early mortality due to pest infestation and 80-94% larval survival was observed during the initial five days.
- Extracted volatiles from tasar host plant and *Antheraea mylitta* at feeding and spinning stages to develop a technology to control Ichneumonid wasp. Studied the antennal responses of yellow fly to these volatiles using Electro-antennogram (EAG) and Olfactometer.

Tasar Post-cocoon Technologies

- For grading of tasar raw silk yarn, tasar yarn samples (control) of 60 denier (nominal) were prepared using Wet Reeling Machine as well as Motorized Tasar Reeling Machine (Charkha).
- Non-peroxide cocoon cooking trials for Daba cocoons was completed. It was observed that 5 g/l of Sodium Carbonate and Sodium Bicarbonate each with boiling time 30 min & steaming time 30 min facilitates best softening of Daba cocoons in respect of single cocoon quality characteristics as well as reeling performance.
- For utilizing solar energy in tasar post cocoon technology operations, 10 KWp Solar Power Plant was installed along with all equipments and accessories.

Central Muga Eri Research and Training Institute, Lahdoigarh (Assam)

The Central Muga Eri Research and Training Institute, Lahdoigarh, Jorhat along with its nested research stations and units *viz.*, RMRS, Boko; RERS, Mendipathar, RERS, Shadnagar and RECs located at Lakhimpur, Coochbehar, Tura, Diphu, Kokrajhar and Fatehpur provides R&D support to muga and eri sectors for the development sericulture especially in Eastern and North-Eastern regions of the country. The highlights of the R&D work carried out during the year are as follows:

Host Plant Improvement, Production and Protection

- Assessed 19 morphological traits along with leaf moisture, protein and phenol content to develop a comprehensive nutrient management package for the muga silkworm host plant Som.
- Isolated and identified antagonistic bacteria from Castor (eri host plant) rhizospheres and found effective against *Alternaria blight* of castor.

- Identified bio-surfactant producing bacteria *viz., Bacillus* sp., *Enterococcus* sp., *Pseudomonas* sp., *Staphylococcus* sp., and *Serratia* sp. from hydrocarbon contaminated soils nearby the muga growing areas in upper Assam.
- Issued 608 Soil Health Cards to farmers from Assam, Nagaland, Manipur, Meghalaya, Mizoram and Arunachal Pradesh.
- Raised 180740 muga host plants and supplied 27996.
- Raised 52500 eri host plants and supplied 13570 to the farmers.

Silkworm Improvement, Production and Protection

- Muga silkworm mitochondrial genome is sequenced, mapped and published.
- Two high yielding muga silkworm races CMR-1 & CMR-2 are now under testing.
- Developed two new combinations of eri silkworms *viz.*, YP X GBZ (shell weight 0.53 g; fecundity 352) and GBS X GBZ (shell weight 0.55g; fecundity 355) superior to the existing commercial breed.
- Developed a new chemical formulation for disinfecting the rearing field.
- Established the world's first *in-situ* conservation site of muga silkworm and other wild silk moths at Golaghat, Assam.
- Tested solar LED trap with lure for controlling insect pests in muga silkworm rearing and found effective.
- Developed the forecasting and forewarning system for pests and diseases of muga host plants and silkworms. During the year, SMSs were sent to 181035 farmers.
- Prepared 2000 no. of eri collapsible mountages using treated bamboo and distributed to farmers / beneficiaries in different location of Assam and Nagaland.
- Identified mid gut microbiomes associated with flacherie diseases in muga silkworm.
- Examined caterpillars from 30 other lepidopteran species to check any cross transmission of pebrine to muga silkworm (*Antheraea assamensis Helfer*) and observed presence of pebrine in 20 species.
- Surveyed the potential muga growing areas in upper Assam districts to determine the possible loss of muga crop due to insecticide spray.
- Established a weather station at Bogidhola farm of DoS, Assam.

Central Silk Technological Research Institute, Bengaluru (Karnataka)

Central Silk Technological Research Institute, a premier institute in the country is involved in the research and develop-mental activities related to silk technology. The institute has been awarded ISO 9001:2015 certification of the quality management system. Some of the important contributions made by the institute and its 23 sub-units during 2017-18 are as follows:

Research

- Developed a conveyor drying machine with a drying capacity of 1.2 MT cocoons per day.
- Developed a new machine "Sonalika" to replace 'Bhir Reeling' of muga cocoons.

- Developed eri cocoon opening machine, pre-treatment equipment for cocoon cooking and baby dyeing machine.
- Developed steaming technique for improving the winding performance of raw silk skeins.
- Developed technology for development of diversified silk knit wear products / garments using international quality Indian silk.
- Developed technology for extraction of sericin from silk yarn using HTHP method.
- Developed pre-treatment process for cocoon cooking and a cooking / softening chemical recipe for cooking of tasar cocoons called "Tasar Plus".
- Studied cohesion characteristics of multi-bivoltine raw silk & tasar silk using sericin / guar gum in reeling process and found that 3 gpl guar gum/sericin coating on multivoltine raw silk and 6 gpl guar gum/3gpl sericin coating on tasar silk in reel permeation process improved the cohesion characteristics significantly.
- Examined the sericin dissolution characteristics and its impact on reelability and observed that reelability can be calculated using UV Spectrophotometer absorbance by testing sericin dissolved liquor sample after boiling cocoon shells at 92°C for 5 min.
- Systematically purified mulberry silk sericin for topical skin applications by removing 100% of lead and cadmium, 94% chromium and 84% copper using activated carbon and bio-sorbents.

Patents

- Obtained patents for (i) Improved hand-loom using pneumatic lifting mechanism for jacquards and (ii) An improved reeling cum twisting machine.

Product Developed

- Mulberry single jersey plain & digitally printed ladies tops
- Mulberry interlock structure with tie & dye yarn
- Mulberry & cotton union knits with dye variation as design component
- Mulberry jacquard tuck knit designs for ladies tops
- Knits made of mulberry & cotton melange yarns

Testing

A total of 104120 sample lots of cocoon, raw silk, fabrics, dyes, water etc., were tested for physical, chemical and eco parameters.

II. TRANSFER OF TECHNOLOGY

Central Sericultural Research & Training Institute, Mysuru (Karnataka)

- Sensitized 1.22 lakh sericulture farmers/stakeholders with new technologies through 1652 extension communication programmes.
- Conducted Reshme Vaahini, a 39-week programme on Sericulture Technologies through All India Radio, Mysuru.
- Provided Technical hand-holding to Sericulture Farmer's Producers Organization (Koppa & Maddur in Karnataka) in coordination with DoS, Karnataka.
- Through *m-Kisan*, 97 messages (Tamil, Kannada, Telugu & Hindi) were communicated to 60600 farmers.

- Conducted Entrepreneurship Development Programme sponsored by the NRDC, New Delhi and supplied tray washing cum disinfection machines to ten beneficiaries.
- Organized Sericulture Farmers' Workshops in Hassan (Karnataka), Chebrolu (Andhra Pradesh), Siddipet (Telangana), Baramati (Maharashtra) and Krishnagiri (Tamil Nadu) to acquaint farmers with improved mulberry sericulture technologies.
- Published 'Technology Descriptor' for mulberry Sericulture in various languages (Tamil, Kannada, Telugu, English & Hindi).
- Published Handbooks on Automated Disinfection Technology, Tree Mulberry Cultivation and Designs of Silkworm Rearing Houses (Kannada & English).
- Mass produced the bio-control agents (*Nesolynx thymus* for *uzifly, Scymnus coccivora* beetles for mealybugs, *Chrysoperla zastrowi* & *Bracon brevicornis* for thrips) and distributed to the farmers for effective management of mulberry/silkworm pests.

Central Sericultural Research & Training Institute, Berhampore (West Bengal)

- Established 15 Seri-Model Villages in Eastern and North Eastern region of the country. Separate technology packages (Irrigated: 700 no.; Rainfed: 510 nos.) were disseminated among 1210 beneficiaries.
- Popularized four technologies *viz.*, Thiamethoxam (0.015%) for whitefly management, Yellow sticky traps for the management of major mulberry pests, soil test based Sulphur fertilizer application and foliar application of 1% Potassium Chloride (Jalsanjeevini) under rainfed condition for moisture retention.

Central Muga Eri Research & Training Institute, Lahdoigarh (Assam)

- Organized three Vanya Resham Krishi melas, 15 Field Days, 17 Farmers Days, 22 Awareness Programmes and 35 Group Discussions.
- Under 9 SRCs, 2505 farmers / beneficiaries were sensitized on advanced and improved technologies of muga and eri by organizing activities *viz.,* field day, awareness meet, technology demonstrations, etc.
- Under 9 SMVs, more than 2505 farmers / beneficiaries were sensitized on advanced and improved technologies of muga and eri.

Central Silk Technological Research Institute, Bengaluru (Karnataka)

- Conducted 103 extension communications programmes that included 5 Stakeholders Melas, 23 Awareness Programmes, 70 Group Discussions, 1 Seminar and 4 Technology Upgradation programmes in different silk clusters of the country, covering 3882 stake-holders.
- 231 technology demonstrations, 329 field programmes and 1572 field visits for solving / guiding various field problems / issues were undertaken by the main institute and sub-units.
- Seven automatic reeling machines, 47 multi-end reeling machines, 10 twisting units, 20 solar operated spinning machines, 911 tasar reeling (Buniyaad) machines, 2 automatic tasar cocoon sorting machines, 8 hot air driers and 14 boilers were established in the field under CSS.

Collaboration with International Organizations

Central Silk Board is associated with International Sericultural Commission (ISC), Bengaluru, India, for the development of sericulture and silk industry in the country. During International Sericulture Congress held, CSB could engage with other international organizations, Governments, and reputed institutions for the development of sericulture and silk industry.

During the year, the following initiatives have been taken in respect of collaborative work with International Organizations:

- An MoU between CSB and Guangxi Agriculture Department, Guangxi, China for cooperation in sericulture and silk industry was signed on July 1, 2017 during the Textile India conclave held at Gandhinagar from June 30 - July 2, 2017. This is the first time, an MoU between India and China has been signed in silk sector. A collaborative project for rolling out the objectives elaborated in the MoU, is under preparation.
- Under a collaborative project with Bulgaria, the silkworm genetic materials brought from Bulgaria are currently undergoing breeding trials at CSR&TI, Mysuru. Presently, these breeding lines are in F5 generation (>24% silk, >90% survival & 4A grade silk) and would be available for hybrid evaluation in another 18 months. The collaborative research project is on right footing and is expected to result in substantial number of silkworm hybrids with high productivity and quality silk.
- Following collaborative projects between Central Silk Technological Research Institute and Deakin University, Australia are progressing well in their respective laboratories:

1. Development of sericine-based nano finish for textiles materials
2. Studies on photo degradation of silk fabrics and
3. Studies on electro spun silk fibroin nano-composite fibres for biomaterial applications.

The Principal Investigators of the projects namely; Shri S. A. Hipparagi, Scientist-D, Dr. Naveen V. Padaki, Scientist-C and Dr. Brojeswari Das, Scientist-C were deputed to Deakin University, Australia during August 7-11, 2017 to avail training on the latest technological advancements being practiced in Deakin University labs.

International Training

As per the request of International Sericultural Commission, Central Silk Technological Research Institute, Bengaluru organized a training programme on Post-cocoon Technology from April 16-26, 2017. A total of eighteen participants from 8 countries, *viz.*, Bangladesh, Egypt, Ghana, Iran, Madagascar, Kenya, Romania and Thailand attended the training.

8th International Conference on Wild Silk Moths (ICWS-2018)

Central Silk Board, India and International Society for Wild Silk Moths, Japan jointly organized the 8th International Conference on Wild Silk Moths at Hotel Radisson Blu, Guwahati, India during January 22-24, 2018. The Conference was inaugurated by Shri Ajay Tamta, Hon'ble Union Minister of State for

Textiles. The Conference witnessed the participation of 303 delegates from 16 countries viz., Bangladesh, Brazil, China, Egypt, Ethiopia, France, Ghana, India, Japan, Kenya, Paraguay, Rwanda, Romania, Thailand, Turkey and Uzbekistan. 185 scientific papers were presented during the Conference in oral and poster presentations over six sessions. An International Exhibition on sericulture and silk was also held as a side line event of the Conference.

The Conference was hailed as one of the best events of International Society for Wild Silk Moths organized so far in terms of participation of delegates and quality of deliberations. This is also for the first time, an international event on silk was held at NE part of India. This event also provided a unique opportunity to showcase the varied type of north eastern silk products to the global silk market.

Visit of CSB Officials to other Countries

Dr. Uday C. Javali, Scientist-D, CSTRI was deputed to China for research related training on "Development and Standardization of suitable Cooking Technology for Raily cocoon" from June 19-23, 2017.

III. CAPACITY BUILDING AND TRAINING

Keeping the objective of refining the quality of Human Resources in silk industry, the Capacity Building & Training division along with the R&D and Seed institutions, during the year 2017-18, has covered a total of 17292 persons against a set target of 15270 persons. The coverage included farmers, seed producers, reelers, other industry stake-holders, students, extension agents, trainers, R&D & technical personnel. The Capacity Building & Training division coordinated all

Table 3.3: Showing Institution-wise break-up of coverage during 2017-18

A	**R&D sector**	**Physical**
	CSR&TI, Mysuru	3,528
	CSR&TI, Berhampore	3,566
	CSR&TI, Pampore	1,684
	CTR&TI, Ranchi	1,147
	CSR&TI, Lahdoigarh	2,595
	CSTRI, Bengaluru	1,506
	Sub-total (A)	**14,026**
B	**Seed Sector**	
	NSSO, Bengaluru	301
	BTSSO, Bilaspur	1,016
	SSTL, Kodathi	198
	MSSO & ESSO	242
	Sub-total (B)	**1,757**
C	**CBT Division, Bengaluru**	**1,509**
Grand total (A+B+C)		**17,292**

Table 3.4: Showing category-wise break-up of coverage during 2016-17

#	Training Category	Coverage
A	Sericulture farmers Skill training & exposure visits	9,508
B	Silk reelers, twisters, dyers, printers, weavers	1,362
C	Private graineurs, ASRs, Support staff & Seed officials	1,408
D	CSB scientists, other employees & State Gov. officials	1,901
E	Post Graduate Diploma in Sericulture Students	35
F	Other sponsored training programmes	3,078
Total		**17,292**

such efforts of Skill Seeding and Skill Development by CSB covering all activities on silk value chain pertaining to all the four silk sub-sectors *viz.*, mulberry, tasar, eri and muga. The institute-wise and programme-wise coverage details are indicated in Tables 3.3 and 3.4.

IV. IT INITIATIVES

- **M-Kisan:** CSB is successfully using m-Kisan portal to the outreach of scientists and experts to disseminate information to provide scientific advisories to farmers through their mobile phones using m-Kisan Web Portal. In the year 2017-18, 364 advisories were sent to 1610700 farmers.
- **'SMS service'** through mobile phone on day-to-day market rates of silk and Cocoons for the benefit of farmers and other stakeholders of the industry. Both PUSH and PULL SMS services are in operation. All the registered 5634 stakeholders were sent SMS messages daily on all working days.
- **SILKS Portal:** Sericulture Information Linkages and Knowledge System portal has been developed in association with North Eastern Space Application Centre, Dept. of Space by capturing geographical images through satellite and used for analysis and selection of potential areas for promoting sericulture activities in those areas. Multilingual, multi district data is being updated regularly.
- **SERI-5K** database has been designed and developed to maintain and monitor bivoltine cluster farmers throughout the country.
- **Video Conference:** CSB has full-fledged Video Conference facility at CSB Complex, Bengaluru, CSR&TI, Mysuru, Berhampore & Pampore, CTR&TI, Ranchi, CMER&TI, Lahdoigarh and RO, New Delhi. 46 multi-studio video conferences were conducted.
- **CSB website:** Central Silk Board has a website "csb.gov.in" in bi-lingual - English and Hindi. Information is disseminated through this portal for the benefit of common citizen, who may need to know about the organization as well as schemes and other details. Publicity of sericulture plan programmes, achievements and sharing of success stories are featured in the website. CSB has initiated steps to make CSB website GIGW compliance and security audited as per Govt. of India guidelines.
- **On-line applications:** Central Silk Board has been accepting online applications for various posts, making it easy and effective for job aspirants to submit their applications. This will lead to an efficient processing of applications with various conditions and complete the process in time.
- **AEBAS:** Aadhaar enabled bio-metric attendance system is being implemented at Central Silk Board. Over 4600 employees including farm workers have registered into the attendance portal. 81 units have implemented AEBAS and 90 devices are RD Services enabled.
- **Windows based Accounting Software:** Successfully converted DOS based FAS/PRS package into windows based FAS/PRS with additional user-friendly features. Implementation of the same is completed in 45 units and remaining delegated units are in the process of implementing it.

- **National Database for farmers and reelers:** Farmers and reelers data base is designed and developed to have database of farmers and reelers at national level, which will help policy makers with appropriate information for effective decision making. As on March 31, 2018, details of 586407 farmers and 7902 reelers have been entered by the states in the database.
- MIS on NERTPS "Intensive Bivoltine Sericulture Development Project in North Eastern states" is developed and hosted on dedicated servers for trouble free access by all stakeholders.
- Designed & developed database for management of grievances and VIP references.
- Software designed and developed for digitisation of pension papers. All the pension records were digitized for security, safety and ease of management.

B. SEED ORGANIZATION

The seed organization in CSB consists of National Silkworm Seed Organization (NSSO), Bengaluru, Basic Tasar Silkworm Seed Organization (BTSSO), Bilaspur, Muga Silkworm Seed Organization (MSSO) and Eri Silkworm Seed Organization (ESSO), Guwahati, which are responsible for production and supply of basic as well as commercial seed. These organizations have set in the standard for seed cocoon production of quality dfl in mulberry and vanya sectors.

Mulberry Seed Sector - NSSO

National Silkworm Seed Organization (NSSO) is a premier silkworm seed production organization in the country which undertakes maintenance and supply of quality basic silkworm seed through its Basic Seed Farms (BSFs). In addition, it also supports the production of import substitute bivoltine silk through production and supply of bivoltine hybrid seeds. The commercial seed is produced in ISO certified SSPCs. While reaching the highest production of bivoltine hybrids ever in its history, NSSO has maintained its clientele for crossbreed silkworm seed also. In line with the mandate and served by a diligent and committed team, NSSO fulfilled the entire seed requirement of different stake holders including basic and commercial silkworm seed during the year under report.

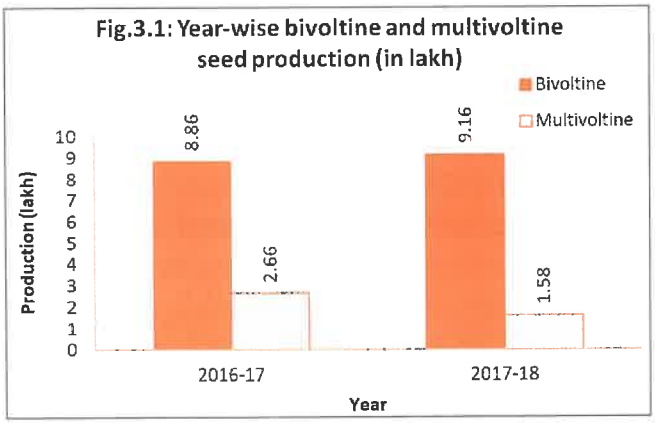
Seed Cocoon Generation and Basic Silkworm Seed Production at Basic Seed Farms

The Basic Seed Farms (BSFs) generate quality seed cocoons to produce basic seed. Precise planning, scientific and systematic execution of activities is done meticulously for seed maintenance and multiplication (P3, P2 and P1), following one way system of multiplication of approved breeds at its 20 Basic Seed Farms (14 bivoltine and 6 multivoltine) and the lone Centre for Sericulture Development (CSD) of NSSO. A quantity of 68.15 lakh bivoltine and 36.38 lakh multivoltine seed cocoons (P3 ~ P1) were generated against a target of 75.80 and 44.58 lakhs respectively. Utilizing these seed cocoons, a total of 10.74 lakh basic seed (9.16 lakh bivoltine and 1.58 lakh multivoltine) was produced during the year 2017-18. A total quantity of 8.92 lakh basic seed was distributed (7.34 lakh bivoltine and 1.58 lakh multivoltine) during the year 2017-18. The

production & supply of basic seed (bivoltine & multivoltine in P3, P2 and P1 levels) during the year 2017-18 is given in Table 3.5. The comparative production of bivoltine and multivoltine seed for the year 2016-17 & 2017-18 is given in Fig.3.1.

Table 3.5: Basic seed production and supply (No. of dfls)

	Breed	P3	P2	P1	Total
Production	Bivoltine	4804	43172	867961	**915937**
	Multivoltine	1620	12810	143921	**158351**
	Total	**6424**	**55982**	**1011882**	**1074288**
Supply	Bivoltine	1880	25232	706422	**733534**
	Multivoltine	1620	12810	143694	**158124**
	Total	**3500**	**38042**	**850116**	**891658**



Generation of quality parental (P1) seed cocoons

Aided with highly successful 'Adopted Seed Rearer' (ASR) system involving technically sound and competent seed rearers adopted by different SSPCs, 1200 lakh bivoltine seed cocoons were generated during the year for production of bivoltine hybrid and crossbreed dfls. Besides, SSPCs, NSSO has also supported the DOS, Registered Seed Producers (RSPs) and SSPCs of NSSO of West Bengal and DOS, Uttar Pradesh and North–Eastern states by generating 54.57 lakh (36.10 lakh – West Bengal, 18.47 lakh - Uttar Pradesh) bivoltine seed cocoons in south India and supplying to them against an indent of 50.03 lakh seed cocoons (32.44 lakh – West Bengal, 17.59 lakh - Uttar Pradesh).

The Seed Cocoon Procurement Centre (SCPC) at Kunigal supported the SSPCs by procuring 50.32 lakh multivoltine seed cocoons for preparation of cross breed layings. Punganur, under SSPC Madanapalle, generated 3.40 lakh Nistari seed cocoons respectively through ASRs of their respective areas for N x Bi dfl production at SSPCs.

Commercial Seed Production at Silkworm Seed Production Centres

Production of quality commercial silkworm hybrid dfls (bivoltine x bivoltine & multivoltine x bivoltine) and their distribution among farmers is also one of the mandated activities. Accordingly, 388.36 lakh dfls were produced, out of which 314.24 lakh dfls were of bivoltine

Table 3.6: Combination-wise target and production of dfls (in lakh)

Combination		Target	Achvmt.	% Achvmt.
Bivoltine Hybrids	CSR2 x CSR4	10.00	1.02	10.20
	FC1 x FC2	316.50	290.79	91.88
	SK6 x SK7	11.00	13.13	119.36
	SH6 x NB4D2	16.50	7.96	48.24
	Others		1.34	
Total		354.00	314.24	88.77
Multi x Bivoltine Hybrids	PM x CSR2	13.00	5.06	38.92
	PM x FC2		9.21	
	N x Bi	39.00	36.46	93.49
	N x M12 (W)	34.00	22.52	66.24
	Others		0.88	
Total		86.00	74.12	86.19
Grand Total		440.00	388.36	88.26

hybrids (80.91%) while, the crossbreed layings were 74.12 lakh dfls (19.09%) (Table 3.6). This includes 1.02 lakh CSR hybrids, 290.79 lakh double hybrids, 7.96 lakh traditional hybrids, 13.13 lakhs of foundation cross (SK6 x SK7) and 1.34 lakh new hybrids. With regard to multi-bivoltine dfl production, N x Bi formed (36.46 lakh) the core production, followed by Nistari x M12W (22.52 lakhs). The southern region also produced 5.06 lakh PM x CSR2 and 9.21 lakh of PM x FC2 dfls.

Quality F1 dfls Production

Seed quality is maintained in all its SSPCs adopting ISO quality management systems at every level of seed production processes. The egg recovery in multi x bivoltine hybrids produced in the southern region was 30.46% against the norm of 28.00%. In bivoltine hybrids, the average egg productivity in the case of CSR hybrids was 52.34 g/kg cocoon against the norm of 60 g/kg cocoon and for double hybrids it was 74.92 g/kg cocoon against the norm of 65 g/kg cocoon.

Supply of Bivoltine Seeds

During the year, a quantity of 324.25 lakh bivoltine hybrid dfls was distributed to various states, which is the highest ever. Apart from this, NSSO also supplied 70.77 lakh multi-bivoltine hybrid dfls to various state departments during the year. The bivoltine hybrid dfls distribution for the last five years is indicated at Fig. 3.2.

Apart from this, under Authorization Trials, a quantity of 2.22 lakh dfls comprising 1.34 lakh of bivoltine x bivoltine combinations and 0.88 lakh of multi x bi combination dfls were produced and supplied for evaluation.

Fig.3.2: Year-wise bivoltine hybrid dfl distribution at SSPCs of NSSO (in lakh)

Extension Activities

The extension units including SSCs and SSUs together with Scientists of SSPCs identified as CDFs for clusters of NSSO played a significant role in distribution of commercial seed produced at SSPCs of NSSO and in providing extension support through crop monitoring and transfer of proven technologies to the field. During the year, SSCs and SSUs distributed 94.68 lakh dfls which included 62.29 lakh bivoltine hybrid dfls.

(a) *Cluster Promotion Programme:* 16 Clusters of NSSO were monitored by Scientists of NSSO. 39.38 lakh dfls were distributed against a target of 38.30 lakhdfls,achieving 102.82% and the estimated raw silk produced was 385.57MT.

(b) *Institute Village Linkage Programme:* A quantity of 1.03 lakh bivoltine hybrid dfls were distributed in Karnataka, Andhra Pradesh and Tamil Nadu and the average yield recorded was 72.84 kg, 72.92 kg and 80.50 kg per 100dfls in the above mentioned states respectively.

(c) *CRC Discount Scheme:* Distribution of bivoltine hybrid dfls through the CRC Discount Scheme gained immense

popularity, and a quantum of 169.76 lakh dfls were distributed during the year.

(d) *Extension Communication Programmes:* During the year, 125 group discussions, 46 farmers' day and 24 field days were conducted, under Cluster programme. In addition, 7 radio and 7 TV programmes were conducted by the units.

Training Programmes

NSSO also coordinated and conducted various training programmes covering seed crop rearing and seed production. A total of 302 farmers and DoS officials were trained during the year. Apart from this, one Scientist was trained on "Communication and Presentation skills".

Seed Act Implementation

NSSO continued its efforts for implementation of the provisions of Central Silk Board (Amendment) Act, 2006. During the year, 2385 new applications received for registration were scrutinized and processed. Registration Certificates in respect of 136 RSPs, 79 RCRs and 2170 RSCPs were issued. In addition, applications with regard to 19 RSPs, 35 RCRs and 497 RSCPs were renewed during the year. All the Seed officers and seed Analysts were regularly notified with the additions. On-site inspection of the premises of RSPs and RCRs by seed analysts and seed Officers was carried out for the purpose of system and product certifications, respectively. Certificate training course of three months duration was organized in CSR&TI, Mysuru for chawki rearing and in SSTL, Kodathi for seed production. 63 persons completed training in 3 batches in chawki rearing. Refresher training to 53 chawki rearers / RSPs was provided. Apart from this, 10 awareness programmes were also conducted.

Impact of NSSO on bivoltine raw silk production

NSSO being the undisputed leader in bivoltine hybrid dfl production, leads the bivoltine raw silk production programme in the country by directly contributing to nearly 70% of the country's bivoltine raw silk production through distribution of a whopping 324.25 lakh bivoltine hybrid dfls - highest ever in the history of NSSO, and another 30% indirectly through supply of bivotline basic seed to various state sericulture departments to enable utilization of the same for commercial bivoltine silkworm seed production, thereby leaving an indelible mark in the arena of bivoltine hybrid dfl production.

Vanya Seed Sector

Tropical tasar: Basic Tasar Silkworm Seed Organization (BTSSO), Bilaspur, Chhattisgarh is responsible for organizing the systematic seed production and supply of tropical tasar, through 21 Basic Seed Multiplication & Training Centers (BSM&TCs) operating in nine states and a Central Tasar Silkworm Seed Station (CTSSS) at Kota in Chhattisgarh. CTSSS is responsible for production and distribution of tasar nucleus seed to BSM&TCs for further multiplication besides maintaining germplasm of different silkworm races. The centre has produced and supplied 0.36 lakh tasar nucleus dfls during the year for replenishment of existing stock of BSM&TCs. These 21 BSM&-

TCs produced 38.10 lakh dfls during the year 2017-18. Besides, BTSSO has also produced 13.88 lakh dfls by involving private graineurs.

Oak tasar: The cumulative production of oak tasar seed by two RTRSs, one oak tasar grainage, three RECs and two REC-cum-BSM&TCs located in 6 states was 0.47 lakh dfls during the year 2017-18.

Muga seed: Muga Silkworm Seed Organization (MSSO) established by Central Silk Board under the Muga Seed Development Project comprised of two P4 and five P3 Muga Seed Stations (Central sector) and ten P2 seed centers and six reeling units (State sector). The reorganized MSSO under Central sector has two P4 units, six P3 units for production of basic seed and one Muga Silkworm Seed Production Centre for the production of commercial seeds. Besides, under North East Region Textile Promotion Scheme (NERTPS), three muga P3 Basic Seed Stations and one SSPC have also been established. The cumulative production of Muga Basic Seed Stations during the year 2017-18 was 5.02 lakh muga dfls and one Muga SSPC located at Kaliabari (Boko) in Assam has produced 2.06 lakh muga dfls.

Eri Seed: The Eri Silkworm Seed Organization (ESSO) located at Guwahati, Assam performed well with its single Eri SSPC in NE region and four Eri SSPCs in non-traditional states by producing 6.88 lakh eri dfls during 2017-18 for distribution to different state departments. Under NERTPS, one P2 Eri Basic Seed Farm has been established.

C. COORDINATION AND MARKET DEVELOPMENT

I. Coordination

CSB has been assigned the responsibility for the overall development of silk industry in the country, besides, advising Govt. of India in the matters related to the silk industry. CSB, with its Secretariat located at Bengaluru, carries out these activities through R&D institutes, Seed Organizations, Regional Offices and Raw Material Banks located in different parts of the country. Various developmental and inter-related supportive programmes, as well as R&D schemes are implemented by CSB.

Regional Offices

Regional Offices of CSB liaise with the states and their Departments of Sericulture and nested units in their jurisdiction. They coordinate with these agencies regarding various sericulture development programmes implemented in respective states. CSB has 10 Regional Offices located at Bhubaneswar, Chennai, Guwahati, Hyderabad, Jammu, Kolkata, Lucknow, Mumbai, New Delhi and Patna.

In order to have a close monitoring and efficient functioning with proper coordination, the Regional Offices at New Delhi, Guwahati, Kolkata and Chennai have been decentralized and designated as Regional-cum-Zonal Offices with additional responsibilities of overseeing / monitoring the Regional Offices in their respective zones.

Export Promotion Scheme

As part of the Export Promotion Scheme, CSB is providing the following services in silk

exports through its Regional Offices and Certification Centres:

- Undertakes voluntary quality inspection of silk-goods meant for exports against payment of service charges prescribed by the Board.
- Issue of various Tariff Certificates including GSP, Handloom Certificates, Certificate of Origin and Handicraft Certificates on inspection of silk-goods and on self declaration by the exporters as well.
- Inspection and certification of silk waste meant for exports.
- Undertakes inspection of natural silk carpets under 'voluntary basis scheme' as an export promotion measure, wherever the exporter or importer makes a request to CSB.
- Provides textile testing services for checking silk quality, identification of constituent yarns and its percentages, physical/-chemical properties and other parameters through laboratories attached to Certification Centres.
- Provides technical assistance in identifying constituent yarns and ascertain percentage of silk content in products, as and when approached by different organizations like Customs Department, Directorate General of Foreign Trade, Directorates of Sericulture, Textile Institutes, private firms and individuals.

During 2017-18, about 9.58 lakh sq.mtrs of natural silk/mixed silk-goods valued at Rs.121.21 crore were certified for exports by the Certification Centers of CSB under Voluntary Quality Inspection Scheme (Table 3.7). A total revenue of Rs.813907 has been generated under the scheme by way of inspection charges, sale of blank forms, sample testing charges and issue of various tariff certificates such as GSP, Certificate of Origin, Handloom Certificate, Handicrafts Certificate etc. A quantity of 27533 sq.mtrs of silk-goods valued at Rs.2.77 crore exported by 100% Export Oriented Units (EOU) were certified by Certification Centre, Bengaluru. During the year, 293198 kg of silk waste valued at Rs.17.35 crore was certified by Regional Offices of CSB at Hyderabad and Chennai (Table 3.8).

Table 3.7: Centre-wise details of natural silk-goods certified under voluntary quality inspection scheme during 2017-18

Certification Centre	Silk-goods Certified (lakh sq. mtr.)	Value (Rs. in crore)
Mumbai	0.22	8.96
Bengaluru	6.88	37.15
New Delhi	1.55	36.19
Kolkata	0.35	2.52
Chennai	0.46	22.25
Varanasi	0.057	0.23
Srinagar	0.066	13.59
Hyderabad	0	0.32
Grand Total	**9.583**	**121.21**

Table 3.8: Details of silk waste certified by Certification Centres during 2017-18

Certification Centre	Quantity (kg)	Value (Rs. in crore)
Chennai	288956	17.22
Hyderabad	4242	0.13
Total	**293198**	**17.35**

II. Market Development

Raw Material Banks for tasar and muga

CSB has set up Raw Material Banks (RMB) for cocoons and by-products under Price Stabilization Scheme of Govt. of India on no profit no loss basis to support the primary growers and supply cocoons at steady price in tasar and muga sectors and also to protect the interest of rearers from exploitation by middlemen. They ensure right incentive for production, relieve the beneficiaries from wide fluctuations in market prices of cocoon and raw silk and provide off-the-shelf supply of essential raw materials to actual users and manufacturing exporters of silk-goods at steady prices.

RMBs for tasar at Chaibasa (Jharkhand) with 4 Sub-depots (Bhandara, Raigarh, Warangal and Bhagalpur) and for muga at Sibsagar (Assam) with 3 Sub-depots ensure economic and fair price to the primary tasar and muga cocoon growers. The transaction details of tasar and muga cocoons made by RMBs during 2017-18 are given in Table 3.9.

Table 3.9: Performance of Raw Material Banks

(Unit: Qty. in lakh No., and Value in lakh Rs.)

Sector	Procurement of cocoons		Sale of cocoons	
	Quantity	Value	Quantity	Value
Tasar	158.18	180.78	157.65	225.32
Muga	1.59	2.32	1.59	2.43

D. QUALITY CERTIFICATION SYSTEM

Silk Mark Organization of India (SMOI)

One of the main objectives of the Quality Certification Systems is to initiate suitable measures towards strengthening quality assurance, quality assessment and quality certification. Under the scheme, two components viz., "Cocoon Testing Units & Raw Silk Testing Units" and "Promotion of Silk Mark" are being implemented.

Quality of cocoons influences the performance during reeling and quality of raw silk produced. So far, a total of 55 Cocoon Testing Centres have been established in different Cocoon Markets with the support under CDP to facilitate cocoon testing.

Central Silk Board is popularizing "Silk Mark Scheme", through the Silk Mark Organisation of India (SMOI). "Silk Mark", an assurance label, protects the interests of the consumers from the traders selling spurious products in the name of pure silk. The network of Certification Centres of Central Silk Board, working both independently as well as those attached to the Regional Offices, are carrying out the promotion of Silk Mark scheme, thereby, helping the consumers of pure silk products to get the value for their money and the stake holders of silk value chain to reap greater business.

The progress achieved under the Quality Certification Systems (QCS) scheme during 2017-18 is given in Table 3.10.

Table 3.10: Progress achieved under QCS

Particulars	2017-18		2018-19
	Target	Achvmt.	Target
Authorized User Enrollment (No.)	250	271	250
Sale of Silk Mark Labels (Lakh No.)	27.5	23.94	27
Awareness Programmes/ Exhibitions/ Fairs/Workshops/ Road Shows (No.)	450	553	480
Cocoon Testing Centres (No.)	0	0	8
Raw Silk Testing Centres (No.)	0	0	3

No. of salespersons trained in the Authorized User premises	2595
No. of surveillance conducted	1760
No. of "Silk Mark Vogue" magazine subscription	321

SMOI participated in many of the major events by setting up grand Theme Pavilion showcasing major achievements of CSB and SMOI, which are listed below:

- SMOI coordinated the mega event "Textiles India 2017" organised by Ministry of Textiles, Govt. of India at Gandhi Nagar, Gujarat from June 30 - July 2, 2017 by setting up a pavilion named "Silks of India" showcasing live demonstration of sericulture activities, display of newly developed silk products and new innovation "Buniyaad" tasar reeling machine. In order to create a platform for the members of Silk Mark to explore export market, SMOI provided stalls at subsidised stall rent to 14 Authorized Users from Bengaluru, Cochin, Varanasi, Ahmadabad and Mumbai, who received good response from the silk importers from different countries.
- SMOI, Bengaluru Chapter arranged Theme Pavilion and participated in the "Textiles in Karnataka 2018" at Hotel Lalit Ashok, Kumara Krupa Road, Bengaluru on March 11-12, 2018. Display space was provided free of charge to 6 Authorized Users of Silk Mark to display and sale of 100% natural silk products.
- SMOI arranged Silk Mark Expo to commemorate 8th International Conference on Wild Silk Moths organized by Central Silk Board and International Society for Wild Silk Moths (ISWS), Japan from January 22-25, 2018 at Hotel Radisson Blu, Guwahati. Display space in the theme pavilion was provided all the NE states, 3 Vanya silk producing states and 2 overseas entrepreneurs and 16 Authorized Users. A number of VVIPs from Ministry & State Government, delegates of the Conference visited the expo and appreciated the efforts of SMOI & CSB. A grand fashion show on the exclusive designs & products of North East region was organized. Also, a buyer seller meet was arranged to provide a platform for the prospective buyers from across India & overseas and primary producers of vanya silk from NE states.

Some of the promotional activities undertaken by SMOI, to spread the message of Silk Mark by organizing awareness programmes, interactive workshops, road shows etc., during this period were:

- SMOI, Palakkad Chapter organized grand finale of Srimathi Silk Mark - Kochi 2017 at Rena Event Hub, Kochi on 08.10.2017. The beauty pageant was arranged to provide a platform to the married women across Kerala to excel & showcase their beauty & talent. A panel of judges selected Srimathi Silk Mark & two runner ups and prizes were distributed by Dr. Thomas Chandy, IFS, Principal Secretary cum PCCF Govt. of Sikkim. On this occasion, a fashion show was arranged to promote new designs from the north east region. 10 designers of repute from the NE states participated in the show. An interactive session on commercialization of vanya silk products was organised with the support of VSMPC /P3D cell of CSB & 50 stake holders participated in this B2B.

- A new concept of "Pure Silk Design Contest" was conducted at NEDFi House, Guwahati for the benefit of local budding designers to develop new patterns using the vanya silk fabrics. SMOI has awarded prizes to the best designed garment.
- SMOI, Bengaluru Chapter participated in the Mysuru Dasara Flower Show organized by District Horticulture Department, Govt. of Karnataka at Kuppanna Park, Mysuru from 21.09.2017 to 02.10.2017. The Silk Mark theme was arranged by erecting 2 nos. of butterfly made with beautiful red & white colored rose flowers & asparagus grass. More than 50000 people visited the flower show.
- SMOI, Hyderabad Chapter organized a workshop on Kosa mechanised silk reeling machine, silk dyeing techniques and colour forecasting strategy for the benefit of tasar silk stake holders at Champa on 22.02.2018.
- SMOI in association with 'Sualkuchi Tant Silpa Unnayan Samity', an NGO, established a testing centre at famous muga weaving cluster of Sualkuchi and the centre is providing testing facilities to the weavers & consumers of pure silk products.
- Silk Mark in collaboration with Andhra Pradesh Handloom & Handicraft Corporation Ltd. (Lepakshi), Govt. of Andhra Pradesh established "Resham Ghar - Home of Pure Indian Silks", at New Delhi and provided stall space to authorised users from different silk clusters.
- SMOI coordinated with NHDC, Chennai and VSMPC for the conceptualization, production, editing and overall develop-ment of 2 Audio-video Films covering the products of Chanderi and Sandur Kushala Kala Kendra.
- A total of 6 Silk Mark Expos were organized at Guwahati, Chennai, Hyderabad, and Bengaluru. Around 31000 consumers visited the Expos and business worth Rs.8.80 crore was generated.

OTHER PROGRAMMES/SCHEMES/ PROJECTS

Publicity and Media Programmes

The highlights of Publicity & Media Programmes are listed below:

Publications

- Central Silk Board continued publication of Indian Silk – the bilingual industrial journal devoted to sericulture and silk industry of India. Presently, the journal is in its 56th year of publication. A special issue (July-August, 2017) was brought out on Textiles India 2017 held at Gandhinagar, Gujarat, during June 30-July 2, 2017. The event was inaugurated by Hon'ble Prime Minister of India. Another curtain raiser issue (December 2017-January 2018) of Indian Silk was brought out on occasion of 8th International Conference on Wild Silk Moths held at Guwahati, Assam during January 22-24, 2018 covering features from national and international experts on the status, research and developmental initiatives undertaken in global wild silks sector.
- Annual Administrative Report of Central Silk Board for the year 2016-17 was published in bilingual *i.e.,* English and Hindi during November 2017 and placed before the Parliament. It provides detailed information about the research and developmental activities of Central Silk

Board and its nested units, various projects & schemes implemented by the Central Silk Board and DoSs in various states and overall view of the status and development of the Indian silk industry.

Other Publications printed during the year are

a. Multi-colour Calendar-2018: Printed a multi-colour table-top Calendar of 2018 highlighting the silk and sericulture activities in the North-East region and also the impact of NERTPS scheme both in pre- and post-cocoon sectors.

b. New Year Diary 2018: CSB brought out a New Year diary containing the contact details of CSB and DOSs offices, statistics and other useful information on sericulture and silk industry for use by the key personnel.

c. Seri-Breeders' Meet - Status Papers: This publication contained status papers on various issues of mulberry and silkworm breeding technologies and strategies for future development contributed by the select scientists and brought-out on the occasion of Seri-Breeders' Meet held during 20-21 February, 2018 at Central Silk Board, Bengaluru.

d. Resham Samvad (Dialogue for Development): It is a 36-page multi-colour booklet detailing information on various interaction programmes of Chairman, CSB, with the stakeholders and policy makers regarding various developmental issues, problems and prospects, brought out once in 4 months.

e. Reshme Vaani: It is an 8-page newsletter on sericulture activities in Kannada language for the benefit of the stake holders/ extension personnel of sericulture and silk industry in the state. This newsletter contains information on innovative aspects of pre- and post-cocoon technologies, success stories, silk prices, weather forecasting,silk news-briefs and other activities of the Central Silk Board. The inaugural issue (January-March 2018) has since been released.

f. Resham Bharati: The June 2017 issue of Resham Bharati, a half-yearly in-house Hindi magazine containing sericulture and general write-ups was published and circulated in October 2017.

Press & Media Relations

As part of Press & Media Relations, Publicity Section issued a number of Press Notes to Print and Electronic Media highlighting various activities of CSB and ensured wide coverage for sericulture and silk related activities and events which were published in various newspapers in English and vernacular languages as well as electronic media including AIR and Doordarshan. The major ones being,

1. Organizing National Technology Day on May 9, 2017 by CSTRI, Bengaluru.
2. Assumption of charge by Shri Rajit Ranjan Okhandiar, IFS as new Member Secretary of Central Silk Board on November 6, 2017.
3. Election of Member Secretary, CSB as the Secretary General of International Sericultural Commission.
4. Launch of Integrated Scheme for Development of Silk Industry as approved by the Cabinet Committee chaired by Prime Minister on March 21, 2017.

A curtain raiser Press Meet was organized on June 6, 2017 at Press Club, Bengaluru in connection with Textiles India 2017, India's first ever mega textiles trade fair held at Gandhinagar, Gujarat, during June 30 - July 2, 2017, inaugurated by Hon'ble Prime Minister of India. The Press Meet was addressed by Joint Secretary (Silk), Ministry of Textiles, Govt. of India. The news got wide coverage in national and local English, Hindi and Kannada dailies, national and local TV channels including Chandana, DDK and All India Radio, Bengaluru.

Audio-Visual Publicity

In order to popularize sericulture as well as promote use of silk in North-eastern region, Central Silk Board in coordination with Regional Office, Guwahati conducted 14 episode Live Phone-in-Programme through Doordarshan Kendra, Guwahati and Programme Production Centre, North-East. Scientists and technocrats of CSB participated in the programme and interacted with the farmers on various issues of mulberry, eri and muga sericulture in the local language. The programme was well-received by the sericulture farmers of North-eastern region of the country.

Secretariat of Central Silk Board produced a short video film of 3-4 minutes in Hindi as well as a long film of 12-15 minutes duration on "Empowerment of SC Families through Sericulture" in English and Hindi. Further, production of short film on Buniyaad Reeling machine for tasar, an initiative to mitigate the traditional thigh reeling system and to improve the working and health conditions of tribal women was coordinated.

Participation in Exhibition and Trade Fairs

The Secretariat of CSB coordinated participation of various CSB units in the following expos and trade fairs:

a. CSR&TI, Berhampore in the 21st National Exhibition held during August 24-28, 2017 at Kolkata, West Bengal.
b. Regional Office, CSB, Bhubaneswar in the Special Handloom Expo 2017, held at Bhubaneswar during September 11-24, 2017.
c. CSR&TI, Pampore, J&K and CTR&TI, Ranchi in Destination Himachal Pradesh 2017 held at Palampur during September 12-17, 2017.
d. Sunderban Krishi Mela-O-Loko Sanskriti Utsav, held at Kultali, PO Narayandtala, South 24 Parganas, West Bengal during December 20-29, 2017.
e. RTRS & DCTSC, Bhandara in the 9th Agro Vision 2017 held at Nagpur during November 10-13, 2017.

Others

Publicity Section bagged Rolling Shield for best compliance of OLIC during the year. Publicity Section designed and distributed memento for retiring employees of CSB. It also designed identity card for employees of CSB.

Official Language Policy

CSB continued all efforts to achieve the targets fixed by the Department of Official Language, Ministry of Home Affairs, Govt. of India, New Delhi for implementation of the Official Language Policy of the Union for the year 2017-18. As a result of accelerating the progressive use of Hindi in Official purposes,

Offices of Central Silk Board exceeded the targets set in Annual Programme of Official Language Department. Major achievements and action taken during the period under report is furnished as under:

Awards

Some of the CSB offices were awarded for excellent performance in implementation of Official Language not only at town level but also among the entire region. The details are given in Table 3.11.

Table 3.11: Awards received by CSB offices

Name of Office	Awards Details	Grading	Awarded on
SSPC, Palakkad	Town Official Language Implementation Committee, Palakkad	First	30.01.2018
CSR&TI, Berhampore	Regional Awards, Dept. of O.L.	Second	10.03.2018
RO, New Delhi	Regional Awards, Dept. of O.L.	Second	09.02.2018
CMERTI, Lahdoigarh	Town Official Language Implementation Committee, Lahdoigarh	First	01.03.2018
RO, Bhubaneswar	Regional Awards, Dept. of O.L.	First	10.03.2018

Compliance of Official Language Act, 1963 & Rules, 1976

Central Silk Board & all its offices complied with Section-3(3) of the Official Language Act, 1963. Further, following Rule-5 of Official Language Rules, 1976, letters received in Hindi were replied in Hindi. Targets fixed for original correspondence, fax, etc., in the Annual Programme 2017-18 were also achieved. 95 Offices including Board Secretariat have so far been notified under Rule 10(4) of Official Language Rules, 1976 and Orders/Memoranda were issued for doing work in Hindi under Rule 8(4) of Official Language Rules, 1976.

Training

Hindi training was imparted in a phased manner in Board's Head Office and its subordinate units. 40 officers / officials of CSB were trained on computer for doing work in Hindi. Phonetic typing was focused in the training and many staff shown their interest as they were not capable to type in script or typing mode.

Meetings

Meetings of Official Language Implementation Committee which monitors Official Language Implementation Programme in Board Secretariat, Research Institutes and other main Subordinate Offices were held on 22.06.2017, 25.09.2017, 22.12.2017 & 14.03.2018. Head Office, Bengaluru participated in the Meeting of Hindi Advisory Committee of MoT in Thiruvananthapuram held on 16.06.2017. In most of the Attached/Subordinate Offices also, the meetings of Official Language Implementation Committee were held, regularly in each quarter.

Hindi Week / Fortnight

Hindi Fortnight was observed jointly by Central Office, National Silkworm Seed Organization and Central Silk Technological Research Institute, Bengaluru from September 1-14, 2017 in Bengaluru and competitions *i.e.* Handwriting, Extempore Speech, Noting Drafting, Dictation, Hindi Reading, Oral Quiz, Crossword and Glossary competitions were organized. Hindi day was celebrated on 14.09.2017. Hindi Fortnight valedictory-cum-prize distribution function was organized on 20.09.2017 and winners of various competitions were awarded prizes on this occasion. Officers

& officials of Central Silk Board also participated in the competitions organized by the Town Official Language Implementation Committee. Eight Officers and 4 officials of Central Silk Board comprising CSTRI and NSSO, won awards at Bengaluru town level competitions.

Workshop/Seminar

Board Head Office organized five full day Hindi Workshop for the Staff of CSB on 28.06.2017, 30.08.2017, 15.12.2017 and 07 & 08.03.2018, respectively. A total of 83 Staff were trained in the workshop. BTSSO, Bilaspur organized Rajbhasha Technical Seminar on 17.01.2018. Scientists of CSB presented the papers in Hindi in the seminar on Quality Tasar Production. Hindi Workshops were also organized in Subordinate Offices of the Board.

Software and its use

Following the instruction of Department of Official Language, Ministry of Home Affairs, Govt. of India, Unicode software is being used in CSB and in all its main Institutes, ROs and other Offices. 'Leap Office 2000' is also used in some of the CSB Offices. CSTRI, Bengaluru has taken Corporate Licence of Bank Script Software for preparing pay slip in bilingual in CSB main office & accounting units of CSB.

Inspection

Inspection pertaining to the implementation of Official Language was carried out in 44 attached and subordinates Offices by the Board Secretariat & its attached/subordinate Offices. Ministry of Textiles inspected Board's Head Office on 20.03.2018 and performance of the Board was appreciated by the team.

Publication

Central Office published Annual Report, 2016-17, Certified Accounts with audit certificate & audit report for the year 2016-17. CTR&TI, CSB, Ranchi published House Journal Resham Vani Samvad Issue-44 & seven booklets/pamphlets, in Hindi. CSR&TI, Mysuru published Resham Kiran & two booklets and two pamphlets in Hindi. CSR&TI, Pampore published two issues of Hindi News letter. CSTRI, Bengaluru published Do's & Don'ts of Wet Processing in Bilingual. SBRL, CSB, Kodathi translated Moleculars Marker Technical Pamphlet in Bilingual. NSSO, Bengaluru published technique of Handling Eggs and FAQs.

Translation

The Official Language Section at Board Secretariat translated Annual Report, 2016-17, Certified Accounts with Audit Certificate & Audit Report, 2016-17, Training Courses for Sericulture Sector in Central Silk Board, Calendar 2016-17, "Background Note on Silk & Sericulture in Hindi, Point-wise Replies of MoT/CSB on the list of points raised by the Parliamentary Standing Committee on Labour, Minutes of the Standing Committee Meeting & Board's Meeting.

CSB Official Language Award

In order to accelerate the tempo of implementation of Official Language in Board Secretariat and in its units, Central Silk Board has introduced Rajbhasha Award Scheme, which envisages awards for their performance during the year. Board Secretariat, Bengaluru organized CSB Rajbhasha Award Distribution Function for the year 2015-16 on 13.03.2018.

The recipients of the award and citation for the year were (1) National Silkworm Seed Organization, Bengaluru, (2) Central Silk Technological Research Institute, Bengaluru; (3) Basic Tasar Silkworm Seed Organization, Bilaspur; (4) Regional Sericultural Research Station, Sahaspur, Dehradun; (5) Zonal Office, CSTRI, Bilaspur; (6) Raw Material Bank, Chaibasa; (7) Regional Office, Guwahati, (8) Demonstration cum Technical Service Centre, Cuttack. A provision for a separate Award has also been made for the Sections of the Board Secretariat. Among the Sections of the Board Secretariat, Bill Section and Establishment-I Section bagged the Award for the year, 2015-16, respectively. CTR&TI, Ranchi and other institutes also implemented Official Language Rolling Shield and citation scheme for the sections during the period under report.

Competitions at Town level

Board Secretariat, Bengaluru organized "See the Snap & Pen a Poem" competition in the auspices of TOLIC, Bengaluru on the occasion of Inter Office Competition on 15.11.2017. CSTRI, Bengaluru organized Extempore Speech competition at town level, Bengaluru.

Bivoltine Sericulture Programme

During the XII Plan, the foremost thrust was to augment the production of import substitute silk in the country by reaching the production target of 5000 MT of BV raw silk from a level of 1685 MT prevailing by end of XI Plan period. To achieve the target, CSB, in association with State Sericulture Departments had organized 174 bivoltine clusters during XII Plan and achieved a total bivoltine raw silk production of 5266 MT by the end of the Plan period (2016-17) which included 3405 MT of bivoltine raw silk produced through clusters. The remaining 1861 MT was produced from non-captive areas. The production of 5266 MT by end of XII Plan registered an increase of 313% over production of 1685 MT prevailing by the end of 2011-12. The Directors of Research Institutes in CSR&TI Mysuru / Pampore / Berhampore & NSSO, Bengaluru, were entrusted to monitor the implementation of these clusters in close coordination with respective State DoSs.

Similarly, during 2017-18, with the joint concerted efforts CSB and DoSs, the production level of bivoltine raw silk in the country has reached to 5855 MT (increase of 11.18% compared to 2016-17). While about 4100 MT of raw silk came from 150 bivoltine clusters representing 70% of the total production, the balance of 1755 MTs of bivoltine raw silk was produced through non-captive areas. A database of farmers covered under the Cluster Promotion Programme is maintained in CSB web portal "seri5k.csb.gov." and the cluster performance monitored and reviewed at Central Office. Bivoltine raw silk production target vs achievement during the period 2013-14 to 2017-18 is given in Table 3.12.

Table 3.12: Bivoltine raw silk production during 2013-14 to 2017-18

Year	Raw Silk Target (MT)	Achievement (MT)	Achievement %	Production from Clusters
2013-14	2480	2559	103.0	1475
2014-15	3500	3870	111.0	2357
2015-16	4500	4613	103.0	2932
2016-17	5260	5266	99.0	3405
2017-18	6200	5855	94.4	4100

The details of state-wise progress of bivoltine silk production for the year 2017-18 are given in Table 3.13.

Table 3.13: Production of Bivoltine Raw Silk through Captive and Non-Captive areas during the year 2017-18

#	States	Clusters	Bivoltine Raw Silk Production (MT)		
			Captive	Non-captive	Total
Southern Zone					
1	Karnataka	46	1424	227	1651
2	Tamil Nadu	28	1002	772	1775
3	Andhra Pradesh	13	1092	124	1216
4	Telangana	4	121	37	158
5	Maharashtra	9	224	123	347
6	Kerala	2	15.63	-5.63	10
Total South Zone		102	3879	1278	5157
North Western Zone					
1	Jammu and Kashmir	6	17	115	132
2	Uttarakhand	7	20	13	33
3	Himachal Pradesh	8	13	19	32
4	Punjab	1	2	0.86	3
5	Haryana	0	0	0.7	0.7
Total N-W Zone		22	52	149	201
Central Western Zone					
1	Madhya Pradesh	4	27	38	65
2	Uttar Pradesh	8	44	57	101
3	Chhattisgarh	0	0	1	1
Total C-W Zone		12	71	96	167
Eastern Zone					
1	West Bengal	4	36	0	36
2	Odisha	2	0.37	1.63	2
3	Bihar	1	3	0	neg
Total Eastern Zone		7	39	-1.37	38
North Eastern Zone					
1	Assam & BTC	3	20	40	60
2	Mizoram	1	5	56	61
3	Nagaland	1	6	6	12
4	Manipur	2	22	62	84
5	Tripura	1	6	22	28
6	Sikkim	0	0	0	0
7	Arunachal Pradesh	0	0	2	2
8	Meghalaya	0	0	45	45
Total NE Zone		8	59	233	292
Grand Total		**151**	**4100**	**1755**	**5855**

North-East Region Textile Promotion Scheme (NERTPS)

In order to boost the textile sector in the NE region, Govt. of India has approved a project-based strategy for the North East Region under an umbrella scheme by name "North East Region Textile Promotion Scheme". Under NERTPS, various projects under Textile sector including sericulture have been approved under two broad categories *viz.,* ISDP and IBSDP. These two projects aim at holistic development of sericulture in all its spheres from plantation development to production of fabrics with value addition at every stage of production chain.

Ongoing Projects

For sericulture, 24 projects have been approved covering mulberry, eri and muga sectors in all NE states. The total cost of these projects is Rs.819.19 crore with GoI share of Rs.690.01 crore for implementation from 2014-15 to 2018-19. Objectives of these projects are to establish sericulture as viable commercial activity in NER by creating necessary infrastructure and imparting skills to the locals for silkworm rearing and allied activities in silk production value chain. It is proposed to bring around 31010 acres (existing – 18331 acres and new – 12679 acres) of plantation under mulberry, eri and muga sectors. The projects are expected to contri-bute additional production of 2285 MT raw silk during the project period and 1100 MT silk per annum involving 46094 families, which will generate employment to 230500 persons. These projects have been approved in 10 PAMC meetings held from 17-12-2013 to 16-11-2016.

Upto March 2018, about 30333 acres (existing - 18331 acres and new - 12002 acres) have been brought under host plantation of mulberry, eri and muga covering 35362 beneficiaries and produced 1824 MT of raw silk under ISDP & IBSDP. As against Rs.601.62 crore released by Ministry under the above projects, an expenditure of Rs.406.89 crore (68%) has been incurred.

Under Integrated Sericulture Development Project (ISDP), 16 Sericulture Projects have been approved with a total cost of Rs.582.42 crore (GoI share of Rs.479.60 crore) for implementation in 8 NE states *viz.,* Assam, BTC, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. The projects will support 27010 acres (existing-17650 acres and new-9360 acres) plantation of mulberry, eri & muga. This includes setting up of silk printing & processing unit for Tripura, Soil to Silk for BTC and PCT for Nagaland. While 15 projects are meant for implementation by states to consolidate the states' efforts to strengthen the existing facilities including support for infrastructure creation at farmers/seed cocoon producers/reelers/-weavers' level in identified areas, one project is meant for creation of seed infrastructure for CSB to produce and supply quality seed to NE states. Upto March 2018, Ministry has released Rs.409.85 crore for the above projects, against which the expenditure reported is Rs.275.52 crore (67%).

Eight Projects under Intensive Bivoltine Sericulture Development Project (IBSDP) for all NE states (except Manipur) with a total cost of Rs.236.78 crore (GoI share of Rs.210.41 crore) have also been approved for

implementation from 2015-16 to 2017-18. The project aims at production of International quality bivoltine silk to substitute import in the coming years. The project envisages covering 500 acres under mulberry plantation in 2 blocks of each district involving approx 1,100 women beneficiaries per state including weavers. Overall, it aims to cover 4,000 acres of mulberry plantation benefitting around 9071 women stakeholders covering in NE states. Social Mobilization and Women Beneficiaries Group Formation along with supporting interventions for plantation development and infrastructure creation are integral part of the project. These projects are presently under implementation in respective states. Upto March 2018, Ministry has released Rs.189.77 crore for the above project, against which the expenditure reported is Rs.131.37 crore (69%).

The project-wise and state-wise details of NERTPS are given in Table 3.14 .

Other Projects

In order to meet the requirement of basic and commercial silkworm seed as a back-end support for the projects sanctioned for Assam, BTC, Meghalaya, Nagaland, Ministry has approved creation of 6 seed infrastructure for CSB for mulberry, eri and muga sectors. The total cost of the scheme is Rs.37.71 crore, fully funded by GOI under NERTPS (Table 3.15).

Scheduled Caste Sub-Plan (SCSP)

The project namely "Empowerment of Scheduled Caste families through Sericulture under Scheduled Caste Sub-Plan (SCSP)" has been implemented in the country in coordination with State Sericulture Departments / other implementing agencies during the year 2017-18. The objectives of the project include social upliftment of SC families on sustainable basis with a visible impact in terms of the income generation and employment through sericulture. The said project has been implemented during 2017-18 by covering 1904 SC beneficiaries in the states of Andhra Pradesh, Telangana, Bihar, Himachal Pradesh, Odisha, Jammu & Kashmir, Uttar Pradesh, Punjab, Tamil Nadu and Uttarakhand. An amount of Rs.23 crore has been released to the states under SCSP during 2017-18. The project envisaged to support SC families through mulberry sericulture as indicated below:

- Support for development of kisan nursery
- Support for raising systematic mulberry plantation
- Irrigation facilities to mulberry plantations preferably with solar pumps
- Vermi-compost units for organic farming
- Scientific rearing house & equipments
- Promotion of solar lights for feeding mulberry silkworm during night
- Establishment of chawki rearing centres
- Door to door service agents for disinfection and inputs supply
- Sericulture Resource Centres
- Support for setting of hot-air drier
- Support for establishment of multi-end reeling unit
- Support for construction of reeling shed
- Skill up gradation & capacity building of the stakeholders

Table 3.14: Details of ISDP and IBSDP projects under NERTPS

#	State	Total Project cost (Rs. Cr.)	GoI share (Rs.Cr.)	GoI Release till date (Rs. Cr.)	Beneficiaries (No.)		Output during project (MT)	
					Target	Achmt	Target	Achmt (P) (upto Mar, 18)
ISDP project								
1	Assam	66.67	47.42	37.48	5,965	4,757	196	198
2	BTC	34.92	24.68	22.62	3,356	3,090	171	198
3	BTC (IEDPB)	11.41	10.61	10.08	654	251	60	44
4	BTC (Soil to Silk)	51.61	49.37	37.09	3,526	900	245	77
5	Arunachal Pradesh	18.42	18.42	17.50	1,805	1,672	79	18
6	Manipur (Valley)	149.76	126.60	107.55	6,613	5,183	450	461
7	Manipur (Hill)	30.39	24.67	20.50	2,169	1,168	68	40
8	Meghalaya	30.16	21.91	19.57	2,856	2,856	162	169
9	Mizoram	32.49	24.49	23.26	1,683	665	117	101
10	Mizoram (IMSDP)	13.52	12.83	10.42	833	500	16	1
11	Nagaland	31.47	22.66	21.52	2,678	2,575	166	192
12	Nagaland (IESDP)	13.66	12.83	8.11	1,053	503	72	13
13	Nagaland (PCT)	8.57	8.48	8.06	400	400	Post-cocoon & post yarn activities	
14	Tripura	47.95	33.20	29.58	3,432	3,432	275	218
15	Tripura (Printing)	3.71	3.71	3.52	-	-	1.50 lakh mts./yr	
16	Mulberry & Vanya Seed Infrastructure under CSB	37.71	37.71	32.99	-	-	30 lakh mulberry & 3.70 lakh muga/eri dfls/yr	
Total (I)		**582.42**	**479.60**	**409.85**	**37,023**	**27,952**	**2,076**	**1,730**
IBSDP project								
1	Assam	29.55	26.28	24.96	1,144	1,137	29	18
2	BTC	30.06	26.75	25.41	1,188	944	26	15
3	Arunachal Pradesh	29.47	26.20	24.89	1,144	508	20	3
4	Meghalaya	29.01	25.77	24.47	1,044	1,033	27	13
5	Mizoram	30.15	26.88	25.54	1,169	1,100	26	8
6	Nagaland	29.43	26.16	24.85	1,144	1,029	27	7
7	Sikkim	29.68	26.43	15.00	1,094	645	27	8
8	Tripura	29.43	25.95	24.65	1,144	1,014	27	22
Total (II)		**236.78**	**210.41**	**189.77**	**9,071**	**7,410**	**209**	**94**
IEC		-	-	2.00	-	-	-	-
Grand Total (I+II)		**819.19**	**690.01**	**601.62**	**46,094**	**35,362**	**2,285**	**1,824**

P: Provisional

Table 3.15: Cost of creation of seed infrastructure		
#	Components	Total cost (Rs.in cr.)
1	Mulberry Silkworm Seed Grainge at Jorhat (Assam)	9.45
2	Muga P3 Basic Seed Station, Pailapool, Silchar, Assam	7.33
3	Muga P3 Basic Seed Station, Mokukchung, Nagaland	3.17
4	Muga P3 Basic Seed Station, Kowabili, Kokrajhar, Assam	2.37
5	Muga SSPC at Tura, Meghalaya	5.85
6	P2 Eri Basic Seed Farm at Topatoli, Assam	9.55
	Total	37.71

Apart from above, support has been provided to eri growing farmers in Bihar.

Tribal Sub-Plan (TSP)

The project namely "Empowerment of Scheduled Tribe families through Sericulture under Tribal Sub-Plan (TSP)" has been implemented in the country in coordination with State Sericulture Departments / other implementing agencies during the year 2017-18. The aim of the project is to empower downtrodden ST families through various activities of tasar and mulberry sericulture. The said project has been implemented by covering 9181 ST beneficiaries in the states of Andhra Pradesh, Telangana, Bihar, Chhattisgarh, Jammu & Kashmir, Jharkhand, Maharashtra, Odisha, Uttarakhand, Himachal Pradesh and West Bengal. An amount of Rs.30 crore has been released to the states to support ST families through various activities of tasar and mulberry sericulture under TSP during 2017-18 as indicated below:

Tasar Sector

- Support to nucleus, basic & commercial seed rearers, including crop & rearers' insurance
- Assistance to private graineurs for commercial seed production
- Assistance to basic seed production units for basic seed production
- Assistance to producer's groups for cocoon storage/ conversion, equipment, common facilities & working capital
- Assistance towards maintenance of existing tasar plantation

Mulberry Sector

- Support for development of kisan nurseries
- Support for development of mulberry plantation
- Supply of quality disinfecting materials and other crop protection measures
- Vermi-compost units for organic farming
- Scientific rearing house & equipments
- Establishment of Chawki Rearing Centres
- Door to door service agents for disinfection and inputs supply

General

- Promotion of solar lighting
- Assistance to purchase buniyaad tasar reeling machines
- Establishment of reeling shed
- Skill up gradation & capacity building of the stakeholders
- Nurturing and engaging Community Resource Persons & Para-professionals
- Information, Education & Communication Strategy
- Institution building of producer groups and collectives

Vanya Silk Market Promotion Cell (VSMPC)

The activities under VSMPC continued during 2017-18 with a special focus on generic, brand and market promotion of vanya silk by organizing vanya silk expos, workshop, interaction meets, commercialization programmes, participation in expos/ exhibitions, product development through collaborative projects, promotion of organic vanya silk. The highlights of activities are,

- VSMPC/P3D in association with SMOI organized Silk Mark - vanya Silk Expos at Chennai, Hyderabad and Bengaluru. Vanya Silks Theme Pavilion was also organized and diversified Vanya silk products displayed bringing awareness among the consumers.
- VSMPC/P3D participated in Textiles India-2017 at Gandhinagar, Gujarat and International Conference on Wild Silk Moths at Guwahati and displayed newly developed diversified products.
- Generic and Brand Promotion of Vanya Silks were taken up in association with SMOI through advertisements in Indian Silk and Silk Mark Vogue magazines, Flex advertise-ments at bus shelter at 5 locations in Bengaluru and advertisements on market promotion of Vanya silk products during Expos at Hyderabad, Chennai and Bengaluru.
- VSMPC/P3D in association with CSTRI and SMOI Chapters organized Interaction Meet at Cochin on October 7, 2017 and at Tirupur on December 23, 2017 to popularize and commercialize diversified products. Designers, boutique owners, manufacturers, traders, exporters participated in the interaction meets.
- A collaborative project on "Commercialization of Eri Silk Knitwear" by NIFT TEA, Tirupur was implemented with industry participation and products were developed with technical support from VSMPC and NIFT-TEA. As a part of the project, a programme "Silk Knitwear and product launch and business interaction" was organized on December 23, 2017. The products developed under the programme were displayed through a fashion show. The project has been completed and NIFT-TEA Tirupur has submitted the final report and one set of products developed under the project.
- Under a new project, "Development and Commercialization of Hand woven eri silk Denim Fabric in North East", implemented by SMOI, Guwahati in association with handloom weavers, eri silk denim fabric dyed with natural indigo dye was developed on handlooms. The fabrics were converted in to garments in association with the designers. The denim garments developed were launched for commercialization during the International Conference on Wild Silk Moths held at Guwahati and received very good response from the national and international participants.
- Two Vanya Silk Shoppees at New Delhi were allotted for a period of three years to M/s. Dinesh Silks, Bengaluru & Director of Sericulture, Bodoland Territorial Council, Kokrajhar, Assam. The Vanya Silk Shoppe at Bengaluru was allotted to M/s. Nilima Silks, Bengaluru.

VSMPC has been continuously interacting with manufacturers, traders, exporters, designers and consumers during expos; events etc., and bringing in awareness about Vanya Silk products, their comfort characteristics, availability, and production process. VSMPC is also providing backward and forward linkages to entrepreneurs, manufacturers, traders and exporters who show interest in vanya products.

Product Design, Development and Diversification (P3D)

The activities under Product Design Development and Diversification (P3D) continued during the year 2017-18 with special focus on fabric engineering, silk blends, product development in the clusters, commercialization of new products developed, assisting the commercializing partner in providing backward linkage, technical know-how and assisting / coordinating in sample development. The highlights for the year are:

- Development of new products like muga Satin fabric on power loom, pure silk fabrics using all varieties of spun silk yarn (mulberry, tasar eri and muga) in weft in Ilkal cluster, eri silk socks and eri silk stoles and sarees in Patola cluster in co-ordination with Ms. Deepika Govind a well known fashion designer from Bengaluru.
- Provided technical details and financial assistance to carry out the collaborative projects on "Development and Commercialization of Silk Products in the Bagh cluster" and "Product development and diversification in Maheshwar Silk cluster" with NIFT, Mumbai & "Design Development for Fabrics and related product with Traditional woven and Surface" with NIFT, Bhubaneswar.
- Commercialization of newly developed eri silks through M/s. Nilima Silks, Bengaluru.
- Provided internship programme at P3D for a period of six months for two students from SKSJTI, Bengaluru as part of their M.Tech. academic programme.

Vanya Cluster Promotion Programme (VCPP)

The Cluster Promotion Program for vanya silks is being implemented jointly by CSB units in close coordination with concerned State DOS, by utilizing the funds allocated under the restructured Central Sector Scheme. A total of 22 clusters in tasar sector have been identified in different tasar producing states (Table 3.16). Directors of CTR&TI, Ranchi and BTSSO, Bilaspur have been entrusted with the responsibility of moni-toring the implementation of those clusters in close coordination with respective state DOSs. Detailed guidelines were circulated for implementation of the programme and committees at cluster level, state level and institute level were constituted for expediting the implementation and reviewing the progress of the programme periodically.

Each cluster is supported with 60 Adopted Seed Rearers and 15 private graineurs along with support for capacity building, door to door service for disinfection and mobile testing units for supporting quality tasar silkworm seed production. GOI assistance amounting to Rs.12.6 crore to support 1853 beneficiary under the programme was released to respective State Govts. and funds amounting to Rs.74.474 lakh were released to

Commercialization of Newly Developed Eri Silk Socks

Theme Pavilion during Silk Mark Expo at Bengaluru

Theme Pavilion during 8th International Conference on Wild Silk Moths held at Guwahati

Muga Satin Garment

Table 3.16: Vanya Clusters			
#	Institutes linked	State	Name of the tasar cluster
1	**CTR&TI, Ranchi**	Jharkhand	Mohanpur, Deoghar
2			Jharmundi, Dumka
3			Ramgarh, Dumka
4			Bandhgaon, West Singhbhum
5			Majhgaon, W. Singhbhum
6			Boarijore, Godda
7		Odisha	Thakurmunda-Mahuldiha-Kendujuani, District Mayurbhanj
8			Baincha-Jalghati-Dantiamuhan, District Mayurbhanj
9		Telangana	Mahadevpur, Karimnagar
10		Andhra Pradesh	Kunavaram, Khammam
11		Maharashtra	Awalgaon-Mendki
12		West Bengal	Kashipur, Purulia
13		Uttar Pradesh	Jhansi
14	**BTSSO, Bilaspur**	Jharkhand	Barhet, Sahibganj
15			Tonto
16			Sidawasunga
17			Rajnagar, Saraikela/ Kharsawan
18		Odisha	Telkoi-Benhamunda, District -Keonjhar
19			Jeenari-Pardapada, District-Keonjhar
20		Madhya Pradesh	Narsinghpur
21		Uttar Pradesh	Mungadih, Sonbhadra
22		Chhattisgarh	Ambikapur

Directors of CTR&TI, Ranchi and BTSSO, Bilaspur towards capacity building, study tour and awareness programme and for implementing the VCPP programme.

Following major interventions were undertaken in the clusters:

- Organize the stakeholders to undertake different tasar activities in clusters.
- Organize seed production in private sector to cater to the need of increased seed demand
- Productivity improvement through maintenance of existing vanya host plants, disease monitoring and remedial measures.
- Transfer of improved technologies to the farmers and skill up-gradation and training of stakeholders in proven technologies in the areas of seed production and rearing activities, etc., as per need of the cluster
- Strengthen backward and forwards linkages for silkworm seed production, cocoon processing, etc.

- Infrastructure development in private sector especially for silkworm seed production and cocoon processing.
- Community building for the integrated development of vanya silk by improving the group activity / capacity building.
- Disease monitoring through Joint Disease Monitoring Squads.

Under the programme, a total of 2075 beneficiaries (1323 adopted seed rearers, 243 private rearers, 12 door to door service agents and 497 commercial farmers) were covered under capacity building. 45 awareness programmes conducted on technology transfer service and 315 farmers were taken on exposure visit of new technologies. During the year 2017-18, a total of 1.997 lakh dfls were brushed by 960 Adopted seed rearers in seed crop (I Crop) and produced 70.89 lakh seed cocoon @ 35.5 cocoons/dfl. These seed cocoons were processed by 165 private graineurs to produce 7.57 lakh dfls of which 6.79 lakh dfls were reared by 2627 commercial farmers in second crop (commercial) and produced 266.74 lakh cocoons @ 39.72 cocoon/dfl in the clusters. Excess dfls were supplied to farmers of non captive areas adjoining the clusters.

The programme is continued for creating facilities for preparation of basic seed by the private graineurs to make the clusters sustainable for production of basic and commercial seed.

Integrated "Soil To Silk" Tasar Project in Janjgir-Champa Districts of Chhattisgarh

Soil to Silk tasar project in Janjgir-Champa district of Chhattisgarh is implemented for a period of 3 years *i.e.*, from 2016-17 to 2018-19 with a total project cost of Rs.68.53 crore. The GOI share of Rs.22.88 crore is proposed to be met from the general Central Sector Schemes of CSB. Project envisages to develop new block tasar plantations in 2,500 hectares of land in the project and maintenance of 1240 ha of existing block plantations in forest/ community land, besides support for building forward and backward linkages to facilitate basic and commercial seed production, supply of rearing appliances and disinfectant for disease management to tasar rearers for ensuring crop productivity, cocoon storage facilities, reelers collectives, cocoon bank and marketing support in the project area. The interventions proposed under the project are estimated to produce 454 lakhs cocoons and silk production from 3.3 MT/ annum to 45 MT of reeled tasar yarn and 14 MT of spun yarn during the project involving a total of 5824 project beneficiaries.

CSB has released central share amounting to Rs.86.915 lakh during 2016-17 and Rs.1043.63 lakh during 2017-18 to the state to support various critical interventions in the project like Assistance to nucleus seed rearers, commercial rearers & private graineurs, maintenance of existing block plantation, raising of new block plantation, supply of rearing appliances and disinfectants for disease management, capacity building, training besides cocoon bank & marketing support etc.

New tasar plantations in 1067 ha were raised and maintained during past two years under the project, besides, supporting 10 nucleus seed farmers, 40 basic seed farmers, 15 private graineurs and 185 reelers. 3000 nucleus seed, 77040 basic seed and 1.108 lakh

commercial seed were reared during 2017-18 and produced 99.52 lakh cocoon by 800 farmers (59.50 lakh reared by 541 farmers in block plantations and 35.52 lakh cocoons by 259 farmers from forest and stray plantations) in the project area and produced 15.92 MT raw silk under the project.

MKSP Projects for Tasar Development

Projects under Mahila Kisan Sashaktikaran Pariyojana (MKSP) for promoting tasar based livelihoods are being supported by the Central Silk Board (CSB) and the Ministry of Rural Development (MoRD) since 2013 at an outlay of Rs.83 crore covering about 36000 beneficiaries. These projects are being implemented in the Left Wing Extremism (LWE) affected districts of Jharkhand, Odisha, West Bengal and Chhattisgarh in coordination with PRADAN, in Maharashtra in coordination with BAIF, Pune and in Bihar by Jeevika, Govt. of Bihar in coordination with PRADAN. MKSP project in AP is discontinued by the SERP, Govt. of Andhra Pradesh since September 2016. CSB is responsible for providing technical inputs and training to field staff of the NGO partners through its field units in various sectors *viz.*, seed, pre-cocoon and post-cocoon. Being the Coordinating Agency, CSB would receive funds from the Ministry of Rural Development, GOI and transfer to the Project Implementing Agencies (PIAs) as per the requisition received from the PIA and Action Plan.

MoRD has released its first & second installment of 75% amounting to Rs.29.34 crore to CSB under multi-state project, of which Rs.29.023 crore have been released by CSB to the PIAs, PRADAN & BAIF and Rs.21.16 crore have been utilized by the PIAs. MoRD share is released directly to BRLPS and SERP in respect of Bihar and Andhra Pradesh, respectively. CSB has also released its entire share of Rs.15.946 crore (CDP share) to all the PIAs including SERP, of which Rs.14.05 crore has been utilized.

Project Coverage: As on March, 2018, a total of 31782 farmers were covered against the target of 36108 including 25784 STs (81.1%), 1589 SCs (5.0%) and 3164 OBC (10%) and 1236 others (3.9%) under the project since inception, spread over 695 revenue villages, 60 blocks and 26 districts of the project states.

Augmentation of tasar host plants: 2497 women beneficiaries established 1402.74 ha of tasar host plants in private wastelands through seedlings raised by them in kisan nurseries. Progress was slow as this activity was dovetailed to MGNREGS and project funds were not utilized for the purpose.

Seed rearing and seed augmentation: Under the seed cocoon production 1620 seed rearers brushed 7.741 lakh dfls of basic seed procured from BTSSO and BSPUs established under special SGSY Projects, to produce 246.75 lakh seed cocoons. 306 nucleus seed rearers brushed 1.297 lakh dfls of nucleus seed to produce 73.42 lakh seed cocoons @ 56.59 seed cocoons per dfl. 309 private graineurs processed 156.345 lakh seed cocoons and produced 38.72 lakh commercial dfls @ cocoon:dfl ratio of 4.0:1 and 11917 commercial rearers brushed 40.39 lakh dfls procured from the private grainages of MKSP/special SGSY projects/DOSs, to produce 1383.96 lakh reeling cocoons.

Capacity building & Institution Building: Under human resource programme, various Capacity & Institution Building training progra-mmes were organized under the project. Major ones being technical training (22644 nos.), training on sectoral activities *viz.*, sustainable agriculture, vegetable cultivation etc., (30157 nos.), Community Resource Persons Training (1164 nos.), On-field training to CRPs (61639 nos.), etc. Further, 3584 women beneficiaries, were taken on exposure visits (under producer collectives), and 2 nos., trainers training programme. Six Training modules for various HRD activities and technical protocol were prepared and submitted to NRLM, under the project. Also, 643 producer groups were organized of which, 23 were federated.

Up-scaling tasar projects by SRLMs: MoRD recognized CSB as NRLM Support Organization (NSO) to take up scaling up initiatives in livelihood creation through tasar by SRLMs with support in the areas of project formulation, implementation support and capacity building. CSB prepared tasar based interventions projects for the states of Jharkhand, Odisha and WB at an outlay of Rs.63.34 crore covering 35220 women beneficiaries, which has been approved under Mahila Kisan Sashaktikaran Pariyojana (MKSP) as per letter no. K-11034/02/2017/MKSP/EC dt. 3.3.17. Besides, CSB supported SRLMs of Chhattisgarh and Bihar to finalize the tasar proposals, which are under consideration of MoRD. About 50000 women beneficiaries will be supported at an outlay of Rs.89.43 crore, during the period 2017-20 with funding from MoRD (60%) and SRLMs (40%) with technical support from CSB.

Oak Tasar Development Project in Uttarakhand

CSB has sanctioned a project for Oak Tasar Development in Uttarakhand for a period of 4 years *i.e.* from 2016-17 to 2019-2020 with a total financial outlay of Rs.28.36 crore, having CSB share of Rs.19.55 crore under TSP/CSS of GOI, Rs.6.83 crore from state (State Plan & MGNREGS) and Rs.1.96 crore to be met by the beneficiaries with an objective to augment oak tasar silk production in the state. The project is proposed to address the infrastructure development for streamlining the seed sector, chawki rearing, equipments/ infrastructure support for conducting seed crop and commercial crops rearing, reeling/ spinning and capacity building of various stakeholders, etc., for forward integration to increase oak tasar silk production and create sustainable livelihood to tribal people inhabiting hilly areas. Apart from this, raising of new *Quercus serrata* plantations in 500 ha is proposed with support from MGNREGA in forest/ community land to support future development.

The interventions proposed under the project are estimated to increase cocoon production from present level of 1 lakh cocoons/ annum to 109 lakh cocoons and silk production is 0.05 - 3.6 MT / annum of reeled tasar yarn and 1.7 MT of spun yarn/ annum at the end of the project involving a total of 2290 project beneficiaries. The project will be implemented by Department of Sericulture, Govt. of

Uttarakhand in potential districts of the state to create employment opportunities to poor tribal population inhabiting in these areas.

CSB has released Central share amounting to Rs.415.115 lakh during 2017-18 to the Department of Sericulture, Govt. of Uttarakhand for implementation of the project. State has identified 4 field implementing agencies.

Institute Village Linkage Programme (IVLP)

For effective transfer of technology from lab to land and to establish Seri-Model Villages (SMV), CSB is implementing the Institute Village Linkage Programme (IVLP) through its main R&D institutes from 2014-15. The objectives of IVLP are:

- Transfer of Technologies developed by R & D institutes directly to the farmers.
- Reduce the yield gap between lab & land.
- Help the R&D Units to take corrective measures to minimize the gap.
- Help to sustain technological interventions and their integration to maintain productivity and profitability taking environmental issues into consideration.
- Thrust on 100% adoption of technologies.
- Used as a tool for front line technology demonstration to make the technologies suitable for the farmers.
- On-farm value addition of sericulture products, silk waste etc.
- Help to monitor socio-economic impact of the technology intervention.

Highlights of achievements during 2017-18

- A total of 5585 farmers covered in 48 IVLP clusters which are directly implemented and monitored by research institutes.
- Adoption of technology reached 70 to 80% in both silkworm rearing and host plantation management. 25-30% increase in average yield of cocoon over bench mark production level in case of BV.
- CSR&TI, Berhampore recorded 14.41% improvement in Bi x Bi cocoon in average yield under rainfed (Avg. 49.20 kg, range 40-58 kg) over bench mark (Avg. 43 kg/100 dfls) and 10.2% improvement in M x Bi cocoon under irrigated condition (Avg. 48.70 kg, range-39-55 kg) over bench mark (44.2 kg/100 dfls).
- CSR&TI, Mysuru recorded a production of 130 MT of BV raw silk from IVLP clusters of Karnataka, Tamil Nadu, Andhra Pradesh, Telangana, Madhya Pradesh and Maharashtra by rearing 14.56 lakh dfls with an improvement in cocoon yield by 18.40%.
- CSR&TI, Pampore recorded average cocoon yield of 45.5 kg/100 dfls during Spring and 42.16 kg/100 dfls during Autumn in North-western states.
- CMER&TI, Lahdoigarh recorded production of 754.12 kg of muga silk showing improvement of 20.74% and 21.25% yield over bench mark during commercial crop and Chatua seed crop, respectively.
- In case of IVLP in eri sector, there was an improvement of 46.15% in yield over bench mark, with 1014.4 kg of cocoons produced from 9780 dfls.
- MSSO-ESSO recorded production of 15 MT of muga silk and 19 MT of eri silk from 5 IVLP clusters.

Japan Overseas Cooperation Volunteers Programme (JOCV)

Central Silk Board has been implementing JOCV programme in cooperation with JICA since 07.01.2015, initially, for a period of two years in the field of extension methodology in organizing Self-Help Groups/CBOs by involving sericulturists for effective technology transfer in bivoltine clusters. So far, Six JOCVs have been deployed in cluster locations in Karnataka (1), Tamil Nadu (1), Andhra Pradesh (2) and Uttarakhand (2). The JOCV programme has been extended up to 2020.

Support from other Schemes of Govt. of India through Convergence

Central Silk Board is facilitating and encouraging State Sericulture Departments for mobilizing additional funds to sericulture sector through convergence by availing the financial support from other schemes (RKVY, MGNREGA, MKSP, TDF etc.) being imple-mented by various other Ministries of Govt. of India and from State Plan Schemes to support plantation activities under MGNREGA and infrastructure support both for pre and post- cocoon operations up to yarn production under RKVY and support to create sustainable livelihood through tasar culture for tribal women under MKSP through SRLMs. Central Silk Board facilitated State Govts. for prepa-ration of convergence projects for developing plantations and infrastructure and monitored the progress.

During the current financial year 2017-18, states have submitted 205 proposals for Rs.908.07 crore and received sanction for Rs.813.50 crore for 129 proposals and received funds worth of Rs.583.80 crore as per details given at Annexure-IV.

Application of Remote Sensing & Geographical Information System in Sericulture (RSGIS)

Central Silk Board in collaboration with North-eastern Space Applications Centre (NESAC), Shillong, Meghalaya has implemented the first phase of RSGIS project by covering 108 districts and 24 states. Sericulture Information Linkage and Knowledge System (SILKS) module, a single window ICT based information and advisory services system has been developed for all the selected districts. First phase of the project has been successfully completed for which, CSB was awarded 'National e-Governance Award 2014-15' from Government of India in the category of innovative use of GIS technology for e-Governance.

Subsequently, in order to cover more districts in different states, during 2017-18, Central Silk Board in collaboration with the North-Eastern Space Application Centre (NESAC), Umiam, Meghalaya has proposed to execute 2nd phase of RS&GIS project in 70 potential districts in the sericulture states including NE states for sericulture expansion/development for mulberry acreage estimation, garden condition assessment and finding suitable areas for introducing sericulture in the non-traditional states.

Status of the project "Applications of Remote Sensing & GIS in Sericulture Development (Phase-II)":

- Organized four zonal 'Orientation-cum-hands-on Training Workshops' for officials sponsored by states, at Shillong (for NE states), New Delhi (for Northern states), Hyderabad (for Southern & Western states) and Kolkata (for Eastern states).

- 70 priority districts have been selected from 25 states in consultation with the concerned State Sericulture Departments.
- Mapping of 33 potential districts representing 11 states as well as field data collection have been completed. Mapping is in progress for remaining 37 districts.
- External quality check of spatial data-base has been completed for 30 districts representing 10 states.
- Integration of spatial data-base into SILKS portal has been completed for 20 districts from 7 NE states and it is in progress for the other 10 districts.

Central Silk Board has also initiated collaborative project with North-Eastern Space Applications Centre (NESAC), Shillong, Meghalaya for Geo-tagging of the assets (plantation and infrastructure) created by CSB and states with support of various Govt. funded projects by utilizing the equipment *viz.*, "NAVSHARE", a self-contained GAGAN enabled Global Positioning System data recorder at a total project cost of Rs.13.00 lakh. The project is in preliminary stage.

Mysuru Mega Silk Cluster Project

Govt. of India during the budget announcement for the year 2014-15, had proposed to set-up seven Textile Mega Clusters in the country with an initial allocation of Rs.200 crore, with one such cluster for silk at Mysuru, Karnataka. Accordingly, it was proposed to set up a Mega Silk Cluster at Mysuru following the guidelines of Comprehensive Powerloom Cluster Development Scheme of Govt. of India. The main objective of the project is to create infrastructure and common facilities required for carrying out silk weaving and processing activities.

For the implementation of the project, Karnataka State Textile Infrastructure Development Corporation Ltd., Bengaluru has been appointed as Cluster Management & Technical Agency. Govt. of Karnataka has sanctioned 10 acres of land at Belawadi near Mysuru for the said project. A Special Purpose Vehicle (SPV) by name "Mysuru Chamundeshwari Mega Silk Cluster (India) Private Limited" has been registered and the detailed project report has been submitted to Ministry of Textiles during September, 2017 for consideration.

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FINANCE & ACCOUNTS

FINANCE AND ACCOUNTS

Receipts & Expenditure

In accordance with Section 9(1) of Central Silk Board Act, 1948, Central Government released the Grants-in-Aid to Central Silk Board during the year 2017-18, for enabling it to exercise the powers and discharge its functions under the Act. The details of the Grants-in-Aid released by Ministry of Textiles, Govt. of India & expenditure booked by Central Silk Board during the financial year 2017-18 and also the provisions approved by the Ministry as Budget Estimate (BE) for the year 2018-19 are given in Table 4.1.

Table 4.1: Grants-in-Aid released by Govt. of India and expenditure booked by CSB during 2017-18

[Rs. in lakh]

	Budget Head	GIA released by MOT during 2017-18	Expenditure booked during 2017-18	Outlay [BE] approved by MOT for 2018-19
I. PLAN				
	Central Sector Schemes			
I - A	**Grants towards Development Of Silk Industry**			
i.	Grants-in-Aid-Salaries [36]	37,200	37,200	30,361
ii.	Grants-in-Aid-General (Revenue) [31]	6,050	6,050	5,800
iii.	Grants-in-Aid-Creation of Capital Assets [35]	3,200	3,200	800
	Sub-total	46,450	46,450	36,961
I - B	**Grants towards Development of Silk Industry: Special Component Plan for Scheduled Caste [SPSC]**			
i.	Grants-in-Aid-Salaries [36]Salaries [36]	--	--	3,100
ii.	Grants-in-Aid-General (Revenue) [31]	1,150	1,150	2,500
iii.	Grants-in-Aid-Creation of Capital Assets [35]	1,150	1,150	0
	Sub-total	2,300	2,300	5,600
I - C	**Grants towards Development of Silk Industry : Tribal Area Sub-Plan [TSP]**			
i.	Grants-in-Aid-Salaries [36]	--	--	1,500
ii.	Grants-in-Aid-General (Revenue) [31]	1,500	1,500	1,500
iii.	Grants-in-Aid-Creation of Capital Assets [35]	1,500	1,500	0
	Sub-total	3,000	3,000	3,000
	TOTAL-PLAN	**51,750**	**51,750**	**45,561**
II.	**Grants towards Development of Silk Industry in North Eastern Areas [NEA]**			
i.	Grants-in-Aid-Salaries [36]	900	900	3,100
ii.	Grants-in-Aid-General (Revenue) [31]	600	600	616
iii.	Grants-in-Aid-Creation of Capital Assets [35]	1,000	1,000	700
iv.	**Scheduled Tribal Component-Gen [31]**	--	--	84
	Sub-total	2,500	2,500	4,500
	TOTAL-NE-PLAN	**2,500**	**2,500**	**4,500**
	GRAND TOTAL [I+II]	**54,250**	**54,250**	**50,061**

Loan for the year 2017- 18

No loan amount was released by the Ministry of Textiles to Central Silk Board towards House Building Advance during 2017 - 2018.

Internal Audit

Central Silk Board through its Internal Audit Section at Board Secretariat along with five Zonal Audit Teams is conducting internal audit of all the units of CSB every year. The designated teams conducted the internal audit during 2017-18 and achieved the target as on 31.03.2018 as per the approved programme. The details are given in Table 4.2.

In addition, the Internal Audit Section had also given its opinion in respect of 58 cases referred by various Sections of CSB on different service matters and other subjects during the year.

Besides, the PDC, MAB, Hyderabad has also conducted the audit of 10 CSB Units situated in different parts of the country during the year 2017-18 and submitted inspection reports. Suitable replies were furnished to concerned PDC, MAB from time to time.

Table 4.2: Details of internal audit conducted during 2017-18

#	Name of the I.A. Team	Units Covered		Total
		Delegated	Non-Delegated	
1	C.O. I.A. Team	42	11	53
2	ZAT - A, CTR&TI, Ranchi	23	07	30
3	ZAT - B, CSR&TI, Berhampore	17	05	22
4	ZAT - C, CSR&TI, Mysuru	15	14	29
5	ZAT - D, RSRS, Jammu	13	21	34
6	ZAT - E, MSSO, Guwahati	05	19	24
	Total	115	77	192

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SERICULTURE STATISTICS

SERICULTURE STATISTICS

Raw Silk Production

India has the unique distinction of being the only country producing all the five known commercial silks, namely, mulberry, tropical tasar, oak tasar, eri and muga, of which muga with its golden yellow glitter is unique and prerogative of India. The total annual raw silk production in the country during 2017-18 has reached all time high of 31906 MT of which, mulberry raw silk output aggregated to 22,066 MT (69.2%) and the remaining 9840 MT (30.8%) was vanya silks (Table 5.1).

During 2017-18, the total raw silk production in the country increased by 5.1% over 2016-17. The mulberry raw silk production in the country was 22066 MT (BV- 5874 MT, CB-16192 MT) in 2017-18) compared to 21,273 MT (BV- 5266 MT, CB- 16007 MT) in 2016-17.Eri and muga silks achieved record production of 6661 MT and 192 MT, respectively.

Table 5.1: Raw Silk Production in India

#	Particulars	2017-18 (Target)	2017-18	2016-17	% increase over 2016-17
A	**Mulberry Plantation (ha)**	242140	223926	216810	3.3
B	**Mulberry Raw Silk (MT)**				
	Bivoltine	6200	5874	5266	11.5
	Cross Breed	17276	16192	16007	1.2
	Sub-Total (B)	**23476**	**22066**	**21273**	**3.7**
C	**Vanya Silk (MT)**				
	Tasar	3450	2988	3268	-8.6
	Eri spun silk	6675	6661	5637	18.2
	Muga	240	192	170	12.8
	Sub-Total (C)	**10364**	**9840**	**9075**	**8.4**
	Total (B+C)	**33840**	**31906**	**30348**	**5.1**

Source: *Compiled from the reports received from the State Sericulture Departments*

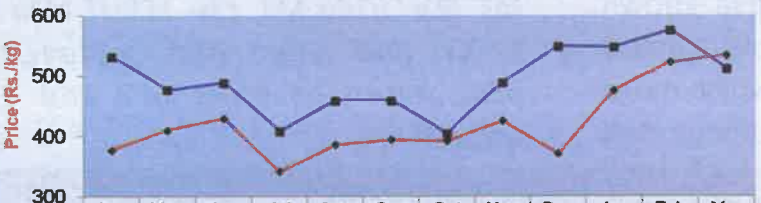
The bivoltine raw silk has showed a tremendous increase of 11.5% during 2017-18 over the previous year. Eri and muga raw silk production recorded an increase of 18.2% and 12.8%, respectively during 2017-18 compared to previous year. State-wise and variety-wise raw silk production during 2017-18 compared to 2016-17 is given in Annexures -V(A) & V(B).

Cocoon and Raw Silk Prices

Mulberry Cocoon Prices

The average prices of bivoltine hybrid reeling cocoons at Government Cocoon Market (GCM), Ramanagaram and crossbreed reeling cocoons at GCM, Ramanagaram and Sidlaghatta during 2017-18 and 2016-17 are depicted in Figs. 5.1 to 5.3.

Fig. 5.1: Average Price of Bivoltine Hybrid Cocoons at Ramanagaram Market



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2016-17	377	410	429	341	386	394	392	425	370	476	522	534
2017-18	532	477	489	408	459	459	404	489	549	548	576	512

Month — 2016-17 — 2017-18

Data Source: Department of Sericulture, Karnataka

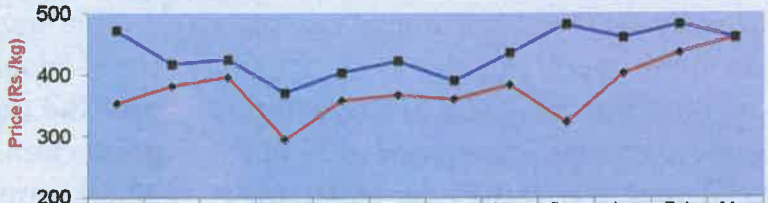
Fig. 5.2: Average Price of Cross Breed Cocoons at Ramanagaram Market

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2016-17	328	343	363	279	334	324	335	359	303	393	432	440
2017-18	447	390	387	344	376	361	333	400	468	453	473	431

Month — 2016-17 — 2017-18

Data Source: Department of Sericulture, Karnataka

Fig. 5.3: Average Price of Cross Breed Cocoons at Sidlaghatta Market



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2016-17	353	381	395	294	357	366	359	383	322	401	435	459
2017-18	472	417	424	370	403	422	390	435	481	460	482	460

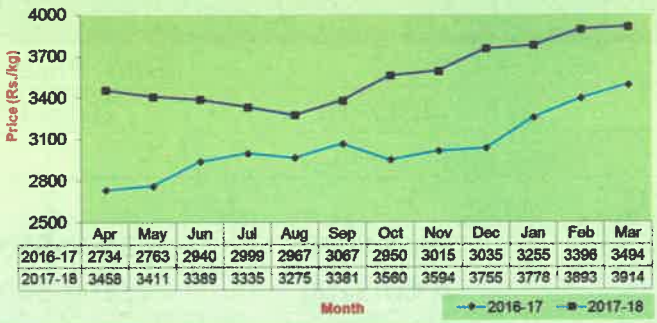
Month — 2016-17 — 2017-18

Data Source: Department of Sericulture, Karnataka

Mulberry Raw Silk Prices

The prices of Multi-end, Cottage Basin and Dupion silks transacted in Silk Exchanges of Karnataka are shown in Figs. 5.4 to 5.6.

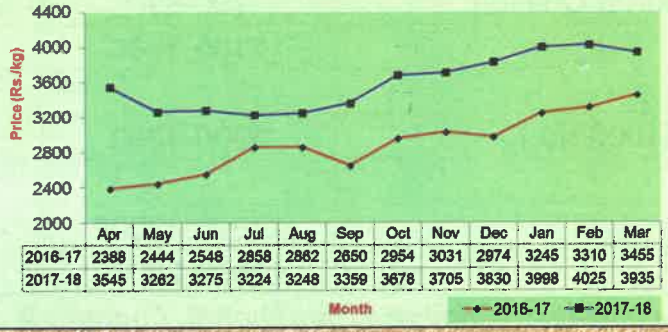
Fig. 5.4: Average Price of Multi-end Silk in Karnataka Silk Exchange



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2016-17	2734	2763	2940	2999	2967	3067	2950	3015	3035	3255	3398	3494
2017-18	3458	3411	3389	3335	3275	3381	3560	3594	3755	3778	3893	3914

Data Source: Department of Sericulture, Karnataka

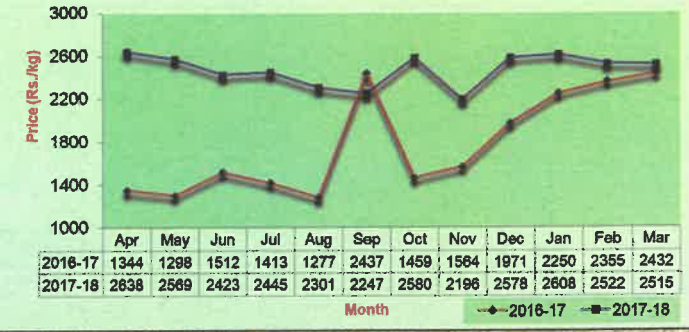
Fig. 5.5: Average Price of Cottage Basin Silk in Karnataka Silk Exchange



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2016-17	2388	2444	2548	2858	2862	2650	2954	3031	2974	3245	3310	3455
2017-18	3545	3262	3275	3224	3248	3359	3678	3705	3830	3998	4025	3935

Data Source: Department of Sericulture, Karnataka

Fig. 5.6: Average Prices of Dupion Silk in Karnataka Silk Exchange



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2016-17	1344	1298	1512	1413	1277	2437	1459	1564	1971	2250	2355	2432
2017-18	2638	2569	2423	2445	2301	2247	2580	2196	2578	2608	2522	2515

Data Source: Department of Sericulture, Karnataka

Vanya Cocoon and Silk Prices

Prices of cocoon and silk of tasar, eri and muga in important markets of vanya silk producing states for the years 2017-18 and 2016-17 are given in Table 5. 2.

Table 5.2: Prices of Vanya cocoons and raw silk

(Unit: Price: Rs./kg)

Variety	2017-18	2016-17
A) Tasar Prices *		
1. Reeling Cocoon (1000 No.) (Gr I)		
a) Raily	3800-5000	3500-5800
b) Daba	2000-3700	2100-3400
2. Reeled Yarn	3200-4200	3200-4600
3. Ghicha Yarn	1800-2100	1600-2500
B) Eri Prices**		
1. Cut Cocoon (Superior Quality)	700-890	550-860
2. Spun Yarn	2100-2600	1800-2600
C) Muga Prices **		
1. Reeling Cocoon (1000 No.)	1800-4000	1500-3500
2. Raw Silk		
a) Warp Yarn	13000-22000	14200-18000
b) Weft Yarn	12000-20000	12500-15500

Note: ** Tasar prices pertain to Chaibasa (Jharkhand), Champa & Raigarh(Chhattisgarh) and Bhagalpur (Bihar) markets*

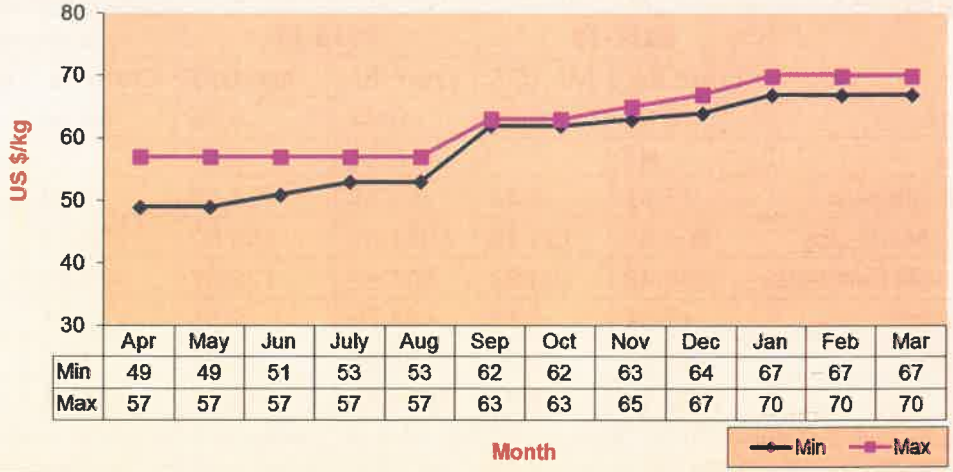
*** Eri and muga prices pertain to Guwahati (Assam) market*

Source: *Raw Material Bank, CSB, Chaibasa and Regional Office, CSB, Guwahati*

Prices of imported (Chinese) mulberry raw silk

Landed price range of imported Chinese mulberry raw silk of 4A and above grades along with its sale price at Varanasi market during 2017-18 are shown in Figs. 5.7 to 5.8.

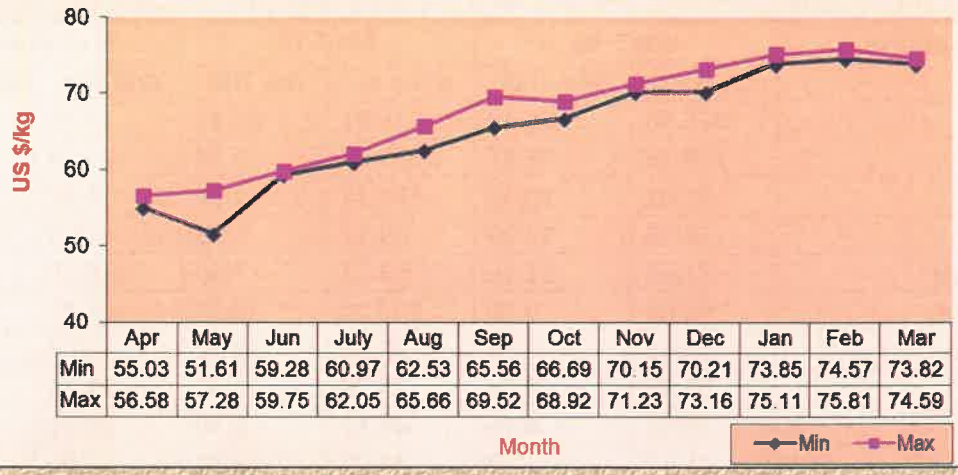
Fig.5.7: Prices of Imported Chinese Mulberry Raw silk 4A & Above Grade during 2017-18



	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Min	49	49	51	53	53	62	62	63	64	67	67	67
Max	57	57	57	57	57	63	63	65	67	70	70	70

Data Source: Regional Office, CSB, Mumbai collected through M/s. Shah Trading Co., Mumbai

Fig.5.8: Prices of Imported Chinese Mulberry Raw silk 4A & Above Grade during 2017-18 in Varanasi *



	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Min	55.03	51.61	59.28	60.97	62.53	65.56	66.69	70.15	70.21	73.85	74.57	73.82
Max	56.58	57.28	59.75	62.05	65.66	69.52	68.92	71.23	73.16	75.11	75.81	74.59

* Prices include duty.

Data Source: Certification Centre, CSB, Varanasi

Export of silk-goods

Fabrics, made-ups and readymade garments are the major items of India's silk exports, which account for about 91.86% of the total silk-goods exports of the country. The export earnings from silk-goods during 2017-18 was Rs.1649.48 crore (US$ 255.93 million) compared to Rs.2093.42 crore (US$ 312.12 million) in 2016-17. Variety-wise export earnings from silk and silk-goods during 2017-18 and 2016-17 are given in Table 5.3.

Table 5.3: Export earnings from silk and silk-goods during 2016-17 and 2017-18

Items	2017-18		2016-17		% change	
	Crore Rs.	Mn.US$	Crore Rs.	Mn.US$	Crore Rs.	Mn.US$
Cocoons	0.05	0.01	0.32	0.05	-84.38	-84.48
Raw Silk	NE		0.44	0.07		
Natural Silk Yarn	15.61	2.42	14.57	2.17	7.14	11.61
Fabrics, Made-ups	864.81	134.18	1051.65	156.80	-17.77	-14.42
Ready made Garments	650.48	100.93	864.33	128.87	-24.74	-21.68
Silk Carpets	17.34	2.69	63.78	9.51	-72.81	-71.71
Silk waste	101.19	15.70	98.33	14.66	2.91	7.10
Total	**1649.48**	**255.93**	**2093.42**	**312.12**	**-21.21**	**-18.00**

***NE:** Not Exported* ***Source:**DGCIS, Kolkata and Ministry of Commerce & Industries website.*

The UAE, the USA, the UK are the major importers of Indian silk-goods. The export earnings from top ten importing countries put together accounted for 69.65% of total exports. Country-wise export earnings from silk-goods during 2017-18 and 2016-17 are given in Table 5.4.

Table 5.4: Country-wise export earnings from silk and silk-goods during 2017-18 & 2016-17

Country	2017-18		2016-17		% of change	
	Crore Rs.	Mn. US$	Crore Rs.	Mn. US$	Crore Rs.	Mn. US$
U.A.E.	376.96	58.49	546.31	81.45	-31	-28.19
U.S.A.	218.26	33.87	263.85	39.34	-17.28	-13.92
U.K.	131.81	20.45	128.39	19.14	2.66	6.84
China	78.56	12.19	89.17	13.3	-11.9	-8.32
Tanzania	71.88	11.15	53.13	7.92	35.29	40.79
Germany	63.08	9.79	107.78	16.07	-41.47	-39.09
France	57.23	8.88	78.61	11.72	-27.2	-24.24
Italy	53.35	8.28	73.72	10.99	-27.63	-24.69
Nigeria	52.62	8.16	43.52	6.49	20.91	25.83
Australia	45.12	7	46.07	6.87	-2.06	1.92
Other countries	500.61	77.67	662.87	98.83	-24.48	-21.41
Total	**1649.5**	**255.93**	**2093.4**	**312.13**	**-21.21**	**-18**

***Source:** DGCIS, Kolkata and Ministry of Commerce & Industries website.*

Imports of silk-goods

Raw silk, silk yarns, fabrics and made-ups are the major items of imports, which account for about 98.39% of the total imports. During 2017-18, the value of silk-goods imports was Rs. 1652.39 crore (million 256.38 US$) compared to Rs. 1438.17 crore (million 214.43 US$) in 2016-17, indicating an increase of 14.9% in Rupee terms and 19.56% in US Dollar terms. The import value of raw silk and silk-goods during 2017-18 and 2016-17 are given in Table 5.5.

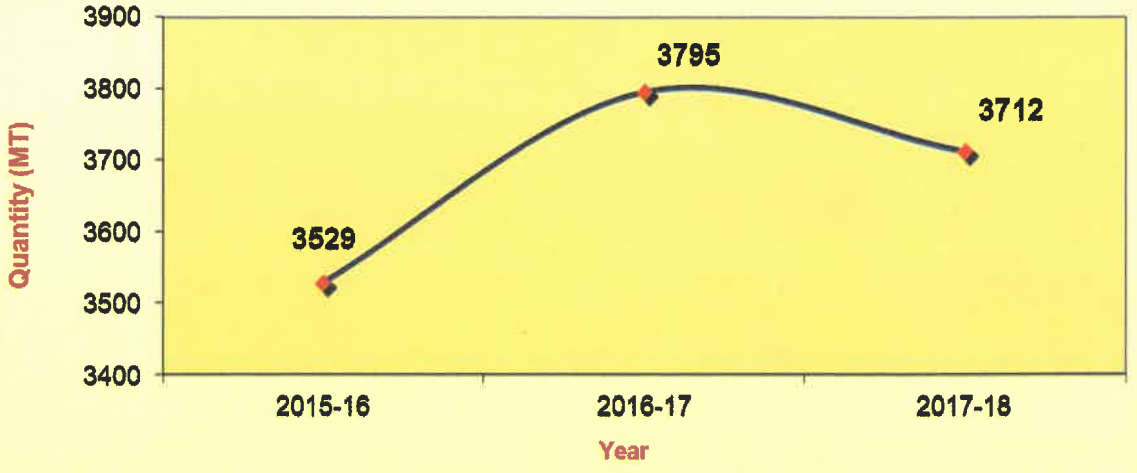
Table 5.5: Value of Import of silk and silk-goods during 2017-18 and 2016-17

Item	2017-18		2016-17		% Change	
	Crore Rs.	Mn.US$	Crore Rs.	Mn.US$	Crore Rs.	Mn.US$
Raw Silk	1218.14	189.01	1092.26	162.85	11.52	16.06
Silk Yarn	115.85	17.35	76.66	11.43	51.12	51.79
Fabrics, Made-ups	292.77	45.43	241.74	36.04	21.11	26.05
Readymade Garments	17.41	2.7	12.37	1.84	40.74	46.74
Silk Carpets	0.23	0.04	0.11	0.02	109.09	100
Silk waste	11.99	1.86	15.03	2.24	-20.23	-16.96
Total	**1652.39**	**256.38**	**1438.17**	**214.43**	**14.9**	**19.56**

Source: *DGCIS, Kolkata and Ministry of Commerce & Industries website.*

The quantity of raw silk import decreased by 2.2% from 3,795 MT in 2016-17 to 3,712 MT in 2017-18. The quantity of raw silk import during last three years is depicted in Fig. 5.9.

Fig.5.9: Raw Silk Import



ANNEXURES

ORGANIZATION CHART OF CENTRAL SILK BOARD

SHRI K.M. HANUMANTHARAYAPPA
CHAIRMAN

SHRI PUNEET AGARWAL
VICE CHAIRPERSON

SHRI R.R. OKHANDIAR
CEO & MEMBER SECRETARY

DR. R.K. MISHRA
Director, Addl. Charge
Board's Secretariat
Bengaluru

- ROCC----------13
- RMB----------1
- RMBSD----------2
- MRMB----------1
- MRMBSD---------1
- SMOI----------1
- MBSDP K.GANJ-1
- CDC----------1

DR. KANIKA TRIVEDY
Director
CSR&TI
Berhampore (WB)

- RSRS----------3
- REC----------12

DR. R.K. MISHRA
Director
NSSO
Bengaluru

- ZSSO----------2
- FARM----------20
- SSPC----------21
- SSC----------14
- SCPC----------2
- SSTL----------1
- CSP----------3
- CSD----------1

DR. V. SIVAPRASAD
Director
CSR&TI
Mysuru

- RSRS----------5
- SSBS----------1
- REC----------20
- SUB UNIT--------25
- FARM----------1
- CDC----------3

DR. A.K. SINHA
Director
CTR&TI
Ranchi (Jharkhand)

- RTRS----------7
- REC----------9
- REC SD----------1
- P4 STATION-------3
- RMB SD----------2

DR. SUBHAS V. NAIK
Director
CSTRI
Bengaluru

- SCTH----------6
- DCTSCs----------9
- TTL----------1
- ZONAL OFFICE-1
- RSTRS----------1
- CTCs----------2
- RSTCs----------2

DR. M.K. GHOSH
Director
CSR&TI
Pampore (J&K)

- RSRS----------3
- REC----------10
- SUB UNIT---------9
- FARM----------1
- STS----------1
- CDC----------1

SHRI DULAL GOSWAMI
Scientist-D
CMERTI,
Lahdoigarh (Assam)

- RMRS----------1
- RERS----------1
- M-REC----------4
- SUB-UNIT----------1
- ERI REC----------1
- FIELD LAB----------1

SHRI R. SATHISH KUMAR
Director (Finance)
Board's Secretariat
Bengaluru

DR. GARGI
Director
CSGRC
Hosur

DR. R.K. MISHRA
Director, Addl. Charge
SBRL
Bengaluru

BSM&TC	-	Basic Seed Multiplication & Training Centre
BTSSO	-	Basic Tasar Silkworm Seed Organization
CSGRC	-	Central Sericultural Germplasm Resource Centre
CMERTI	-	Central Muga Eri Research Training Institute
CC	-	Certification Centre
CDC	-	Cluster Development Centre
CPC	-	Cluster Promotion Centre
CSP	-	Cluster Storage Plant
CSD	-	Centre for Sericulture Development
CSR&TI	-	Central Sericultural Research & Training Institute
CSTRI	-	Central Silk Technological Research Institute
CTR&TI	-	Central Tasar Research & Training Institute
DCTSC	-	Demonstration-cum-Technical Service Centre
MRMB	-	Muga Raw Material bank
MSSO	-	Muga Silkworm Seed Organization
NSSO	-	National Silkworm Seed Organization
REC	-	Research Extension Centre

RERS	-	Regional Eri Research Station
RMB	-	Raw Material Bank
RMRS	-	Regional Muga Research Station
RO	-	Regional Office
RSRS	-	Regional Sericultural Research Station
RTRS	-	Regional Tasar Research Station
SBRL	-	Seriblotech Research Laboratory
SCPC	-	Seed Cocoon Procurement Centre
SCTH	-	Silk Conditioning & Testing House
SMOI	-	Silk Mark Organization of India
SSC	-	Sericulture Service Centre
SSU	-	Sericulture Service Unit
SSPC	-	Silkworm Seed Production Centre
SSTL	-	Silkworm Seed Technology Laboratory
TTL	-	Textile Testing Laboratory
ZSSO	-	Zonal Silkworm Seed Organisation

DR. ALOK SAHAY
Director
BTSSO Bilaspur
(Chhattisgarh)

- CTSSS----------1
- BSMTC----------21
- FIELD UNIT-------1

SHRI B. CHOUDHARY
Scientist-D
MSSO, Guwahati
(Assam)

- FARM----------11
- MUGA SSPC------2
- ERI SSPC----------4
- ERI FARM----------1

INSTITUTE-WISE UNITS OF CENTRAL SILK BOARD BENGALURU AS ON 31.03.2018

CSR & TI, MYSURU (56)

RSRS Bengaluru (Kar)
RSRS Salem (TN)
RSRS Ananthpur (AP)
RSRS Chamarajanagar (Kar)
RSRS Shadnagar (Tel)
SSBS Coonoor (TN)
REC Madivala (Kar)
REC Bidaraguppe (Kar)
REC Chitradurga (Kar)
REC Rayachoty (AP)
REC Vikarabad (Tel)
REC Krishnagiri (TN)
REC Samayanallur (TN)
REC Parbhani (Mah)
REC Baramati (Mah)
REC Madakasira (AP)
REC Venkatagirikota (AP)
REC Udumalpet (TN)
REC Eluru (AP)
REC G.palayam (TN)
REC Amaravathi (Mah)
REC Hoshangabad (MP)
REC Palakkad (Ker)
REC Kalyandurg (AP)
REC Palamner (AP)
REC Srivilliputhur (TN)
S-Unit Aurangabad (Mah)
S-Unit Kanakapura (Kar)
S-unit Bidar (Kar)
S-unit Koppal (Kar)
S-unit Kinkanahally (Kar)
S-unit Penukonda (AP)
S-unit Maddur (Kar)
S-unit Osmanabad (Mah)
S-unit Jalna (Mah)
S-unit Burhanpur (Mah)
S-unit Markapur (AP)
S-unit Suryapet (Tel)
S-unit Chebrolu (AP)
S-unit Atmakur (AP)
S-unit Metpally (Tel)
S-Unit Tumkur (Kar)
S-unit Ranebennur (Kar)
S-unit Berigai (TN)
S-unit Shahapur (Kar)
S-unit Shirahatti (Kar)
S-unit Bijapur (Kar)
S-unit Jamkhandi (Kar)
S-unit Avinashi (TN)
S-unit Trichy (TN)
S-Unit Kudlagi (Kar)
CDC Palamner (AP)
CDC Hosakote (Kar)
CDC Agali (Ker)
P4 Hassan (Kar)

RSRSs	5
SSBS Coonoor	1
RECs	20
CDC	3
S-Unit	25
Farm	1
Total	**55**

CSR&TI, PAMPORE (26)

RSRS Sahaspur (Utr)
RSRS Jammu (J&K)
RSRS Ghumarwin (HP)
REC Naduan (HP)
REC Sujanpur (Pun)
REC Barnoti (J&K)
REC Gonda (UP)
REC Fatehnagar (Raj)
REC Nowshera (J&K)
REC Gorakhpur (UP)
REC Bageswar (Utr)
REC Una (HP)
REC Udhamsinghnagar (Utr)
S-Unit Sarnal (J&K)
S-Unit Lolab (J&K)
S-Unit Old Khoon (J&K)
S-Unit Panchkula (Har)
S-unit Bhadrasi (UP)
S-unit Kotdwar (Utr)
S-unit Pathri (Utr)
S-unit Pilibhit (UP)
S-unit Bahraich (UP)
CDC Kalsi (Utr)
STS Fatehnagar (Raj)
P4 Manasbal -BV (J&K)

RSRSs	3
RECs	10
CDC	1
S-Unit	9
STS	1
Farm	1
Total	**25**

CSR & TI BERHAMPORE (16)

RSRS Koraput (Odi)
RSRS Kalimpong (WB)
REC Mongoldai (Assam)
REC Dhenkikote (Odi)
REC Rangpoo (Sik)
REC Kamnagar (WB)
REC Mahespurraj (Jha)
REC Bhandra (Jha)
REC Bagmara (WB)
RSRS Jorhat (Assam)
REC.Agartala (Tri)
REC Shillong (Megh)
REC Dimapur (Nag)
REC Aizwal (Miz)
REC Imphal (Man)

RSRSs	3
RECs	12
Total	**15**

CTR & TI, RANCHI (23)

RTRS Jagadalpur (Chh)
RTRS Baripada (Odi)
RTRS Warangal (AP)
RTRS Bhandara (Mah)
RTRS Bhimtal (UTR)
RTRS Imphal (Man)
RTRS Dumka (Jha)
S-Unit Pithoragarh
REC Palampur (HP)
REC Chakradharpur (Jha)
REC Champa (Chh)
REC Bangriposi (Odi)
REC Robertsganj (UP)
REC Bhadrachalam (AP)
REC Kapista (WB)
REC Kikruma (Nag)
REC Yaikongpao (Man)
P4 Station Katghora (Chh)
P4 Station Chakradharpur (Jha)
P4 Station Dumka (Jha)
RMB SD Warangal (Tel)
RMB SD Bhandara (Mah)

RTRSs	7
P4 Station	3
RECs	9
RMB SD	2
S-Unit	1
Total	**22**

BTSSO BILASPUR (CHH) (24)

CTSSS Kargi Kota (Chh)
BSMTC Chinnoor (AP)
BSMTC Narasapur (AP)
BSMTC Rampachodavaram (AP)
BSMTC Kharswan (Jha)
BSMTC Kathikund (Jha)
BSMTC Madhupur (Jha)
BSMTC Deoghar (Jha)
BSMTC Ambikapur (Chh)
BSMTC Pali (Chh)
BSMTC Bastar (Chh)
BSMTC Balaghat (M.P)
BSMTC Boirdadar (Chh)
BSMTC Bhandara (Mah)
BSMTC Nowrangpur (Odi)
BSMTC Sundargarh (Odi)
BSMTC Patelnagar (WB)
BSMTC Dudhi (U.P)
BSMTC Bhagalpur (Bih)
BSM&TC Bilaspur (Chh)
BSM&TC Baripada (Odi)
BSM&TC Kendujhar (Odi)
Field Unit PallaharA (Odi)

BSM&TCs	21
Field Uni	1
CTSSS	1
Total	**23**

NSSO, BENGALURU (65)

KARNATAKA

SCPC Kunigal
SCPC K.R.PET

P3 Mysuru
P3 Nagamangala
P2 Dharmapura (BV)
P2 Gavimata (BV)
P2 Nagenahalli (MV)

SSPC Bengaluru
SSPC Mysuru
SSPC Ramanagaram
SSPC Vijayapura
SSPC Chintamani
SSPC K.R.Nagar
SSPC Malavalli

Grainage/
P1 Chikkamalavadi
SSC K.R.Pet
SSC Pandavapura
SSC K.P.Doddi
SSC Gowribidanur
SSC Belgaum
SSC Haveri
SSC Attibele

SSTL Kodathi

BSF Yediyur

CSP Mysuru

ASSAM

SSPC Jorhat

RO (10+2)

RO New Delhi (Delhi)
RO Jammu (J&K)
RO Mumbai (Mah)
RO Hyderabad (Tel)
RO Chennai (TN)
RO Bhubaneswar (Odi)
RO Guwahati (Assam)
RO Lucknow (UP)
RO Kolkata (WB)
RO Patna (Bih)
MESDP Kishanganj (Bih)
CDC Saharsa (Bih)

TAMIL NADU

P2 Krishnagiri (MV)
P2 Y. Hills (BV)

SSPC Dharmapuri
SSPC Hosur
SSPC Tirupattur

CSP Hosur

ANDHRA PRADESH

P2 Horsely Hills
P2 Madakasira (BV)
P2 Parigi (MV)

SSPC Hindupur
SSPC Madanapalle
SSPC Chittoor

SSC Vijayawada

KERALA

SSPC Palakkad
P2 Palakkad

BIHAR

P2 Purnea

ODISHA

CSD Ramgiri

JAMMU & KASHMIR

SSPC Udhampur

CERTIFICATION CENTRES (3)

CC Varanasi (UP)
CC Bengaluru (Kar)
CC Srinagar (J&K)

WEST BENGAL

ZSSO Raiganj

P3 A.falkatta
P2 Karnasubarna
P2 Banguria
P2 Dhubulia

SSPC Berhampore
SSPC D.B Pur
SSPC Kolitha
SSPC Raiganj

SSC Patelnagar
SSC Alinagar
SSC Amrity
SSC Mothabari
SSC Panchagram
SSC Kaliachak

UTTARANCHAL

ZSSO Dehradun
P3 Majra
P2 Sheeshambara
SSPC Dehradun
CSP Dehradun

SSTL	1
ZSSOs	2
BSFs	20
SSPCs	21
SSCs	14
SCPCs	2
CSP	3
CSD	1
Total	**64**

CO Bengaluru (Kar)

SMOI Palakkad (Ker)
RMB Chaibasa (Jha)
RMB SD Bhagalpur (Bih)
RMB SD Raigarh (Chh)
MRMB Sivasagar (Assam)
MRMB SD Sualkuchi (Assam)

SMOI Palakkad (Ker)	1
RMB	1
RMB SD	2
MRMB	1
MRMB SD	1
Total	**6**

CSTRI, BENGALURU (23)

Text. Testing Lab Varanasi (UP)
SC&TH Dharmavaram (AP)
SC&TH Kancheepuram (TN)
SC&TH Jammu (J&K)
SC&TH Srinagar (J&K)
SC&TH Malda (WB)
SC&TH Bengaluru (Kar)
Zonal Office Bilaspur (Chh)
CTC Coimbatore (TN)
CTC Ramanagaram (Kar)

RSTRS Guwahati (Assam)
RSTC Sidlaghatta (Kar)
RSTC Kollegal (Kar)

DCTSC Rayapura (Kar)
DCTSC Hindupur (AP)
DCTSC Dharmapuri (TN)
DCTSC Bhandara (Mah)
DCTSC Cuttack (Odi)
DCTSC Dehradun (UTR)
DCTSC Bhagalpur (Bih)
DCTSC Suri (WB)
DCTSC Nurupur (HP)

RSTRS Guwahati

TTL	1
SC&THs	6
DCTSCs	9
Zonal Office Bilaspur	1
RSTCs	2
RSTRS	1
CTCs	2
Total	**22**

CSGRC Hosur (TN)

SBRL Bengaluru (Kar)

MSSO, GUWAHATI (19)

P3 Nongpah (Meg)
P3 Rompara (Meg)
P3 Adokgiri (Meg)
P3 Hahim (Assam)
P3 Mendipathar (Meg)
P3 Narayanpur (Assam)
P3 Kalimpong (WB)
P3 Kowabill (Assam)
P3 Paliapool (Assam)
P3 Kobulong (Nag)
P4 Tura (Meg)
Muga-SSPC Kaliabari (Assam)
Muga-SSPC Tura (Meg)

Eri BSF Topatali (Assam)

ERISSPC Azara (Assam)
ERISSPC Peddapuram (AP)
ERISSPC Hosur (TN)
ERISSPC Haldwani (UTR)

Farms	11
M-SSPC	2
E-SSPC	4
E-BSF	1
Total	**18**

CMER&TI LAHDOIGARH (10)

RERS Mendipathar (MEG)
RMRS Boko (ASSAM)

Muga-REC Lakhimpur (Assam)
Muga-REC Coochbehar (WB)
Muga-REC Tura (Meg)
Muga-REC Balijan (Ar.P)

Muga-REC Sub-unit Kokrajhar (Assam)
Muga Field Lab Titabar (Assam)

Eri REC Fatehpur (UP)

RMRS	1
RERS	1
M-REC	4
E-REC	1
REC Sub-unit	1
Field lab	1
Total	**9**

ABSTRACT

CSB - HQ	1
CSR&TI	3
CTR&TI	1
CSTRI	1
NSSO	1
MSSO	1
CMERTI	1
CSGRC	1
SBRL B'luru	1
SSTL	1
ROs/CCs	13
SMOI	1
RERS	1
BSFs (MSDP)	11
BSFs (Mulb)	22
BSM&TC (Tasar)	21
BTSSO Bilaspur	1
CDCs/CPC	4
CTCs/TDC	2
CTSSS Kargi Kota	1
DCTSCs	9
ERI-BSF	1
ERI-SSPC	4
Field Lab Titabar	1
Field Unit Pallahara	1
MESDP Kishanganj	1
MRMB (Muga)	1
MRMB-SD	1
P4 Stations	3
REC (Eri)	1
REC (Muga)	4
REC (Mulb)	42
REC (Tasar)	9
RMB (Tasar)	1
RMB-SD (Tasar)	4
RMRS (Muga)	1
RSRS (Mulb)	11
RSTCs	2
RSTRS Guwahati	1
RTRS (Tasar)	7
SC&TH	6
SCPC (Mulb)	2
SSBS Coonoor	1
SSCs (Mulb)	14
SSPC (Muga)	2
SSPC (Mulb)	21
STS/CSP/CSD	5
S-unit (Eri)	1
S-unit (Muga)	1
S-unit (Mulb)	34
S-unit (Tasar)	1
TTL Varanasi	1
Zonal Off.Bilaspur	1
ZSSO (Mulb)	2
Total	**286**

ABBREVIATION

BTSSO	- Basic Tasar Silkworm Seed Organization	DCTSC	- Demonstration-cum-Technical Service Centre
CC	- Certification Centre	MRMB	- Muga Raw Material Bank
CSD	- Centre for Sericulture Development	NSSO	- National Silkworm Seed Organisation
CSGRC	- Central Sericultural Germplasm Res. Centre	P4 P3 P2	- Basic Seed Farms
CSR & TI	- Central Sericultural Research & Trg. Institute	REC	- Research Extention Centre
CSTRI	- Central Silk Technological Research Institute	RERS	- Regional Eri Research Station
CTC	- Coccon Testing Centre	RMB	- Raw Material Bank
CTR & TI	- Central Tasar Research & Training Institute	RMB-SD	- Raw Material Bank (Sub Depot)
CTSSS	- Central Tasar Silkworm Seed Station	RMRS	- Regional Muga Research Station
RO	- Regional office		
RTRS	- Regional Tasar Research Station		
SC&TH	- Silk Conditioning & Testing House		
SCPC	- Seed Cocoon Procurement Centre		
SSC	- Sericulture Service Centre		
SSPC	- Silkworm Seed Production Centre		
S-UNIT	- Sub unit attached to REC		
TTL	- Textile Testing Laboratory		
ZSSO	- Zonal Silkworm Seed Organisation		

Composition of Board as on 31.03.2018

Annexure-II

#	Name & Address of the Member
I	**UNDER SECTION 4(3)(a)**
1	**Shri K.M. Hanumantharayappa** Chairman, Central Silk Board Bengaluru – 560 068, Karnataka (08.08.2016 to 07.08.2019)
II	**UNDER SECTION 4(3)(b)**
2	**Shri Puneet Agarwal, IAS** Joint Secretary (Silk) & Vice-Chairman, CSB Ministry of Textiles, Govt. of India "Udyog Bhavan", New Delhi – 110 011 (26.02.2016 to 25.02.2019)
3	**Smt. Neelam S. Kumar** Chief Controller of Accounts Ministry of Textiles, Govt. of India 'Udyog Bhavan', New Delhi – 110 011 (10.07.2015 to 09.07.2018)
4	**Shri Rajit Ranjan Okhandiar, IFS** Member Secretary Central Silk Board Bengaluru – 560 068, Karnataka (06.11.2017 to 05.11.2020)
III	**UNDER SECTION 4(3)(c)**
5	**Shri P.C. Mohan** Member of Parliament (Lok Sabha) 1928, 30th Cross, 12th Main Banashankari 2nd Stage, Monotype G.K. Kalyana Mantapam Bengaluru – 560 050, Karnataka No.160, South Avenue New Delhi – 110 011 (10.08.2017 to 09.08.2020)
6	**Dr. Mahendra Nath Pandey** Member of Parliament (Lok Sabha) No.B-22/157-7, Saraswathi Nagar Vinayaka, Varanasi – 221 010 Uttar Pradesh No.302, Narmada Apartment Dr. B.D. Marg, New Delhi – 110 001 (21.12.2017 to 20.12.2020)
7	**Shri Nimmala Kristappa** Member of Parliament (Lok Sabha) Gorantla, Anantapur Dist - 515 231 Andhra Pradesh 12-A, Ferozeshah Road, New Delhi (10.08.2017 to 09.08.2020)
8	**Shri Jugal Kishore Sharma** Member of Parliament (Lok Sabha) Government Quarters No.14 New Rehari, Jammu - 180 005 No.91, South Avenue New Delhi – 110 011 (10.08.2017 to 09.08.2020)
9	**Shri Basawaraja Patil** Member of Parliament (Rajya Sabha) No.3/1/28, Vidyanagara Colony, Sedam Gulbarga Dist. - 585 222 No.C-703, Swarn Jayanti Sadan Dr. B.D. Marg New Delhi – 110 001 (08.05.2015 to 02.04.2018)
10	**Shri Neeraj Shekhar** Member of Parliament (Rajya Sabha) Village & Post – Ibrahim Patti Balia District - 221 716 Uttar Pradesh No.3, Gurudwara Rakabganj Road New Delhi – 110 001 (08.05.2015 to 07.05.2018)
IV	**UNDER SECTION 4(3)(d)**
11	**Shri M. Maheshwar Rao, IAS** Secretary Horticulture, Agriculture & Sericulture Department, Govt. of Karnataka Room No.404, 4th Floor, 3rd Gate M.S. Building Bengaluru – 560 001 Karnataka (31.01.2018 to 30.01.2021)

#	Name & Address of the Member
12	**Shri K.S. Manjunath, IAS** Commissioner for Sericulture Development & Director of Sericulture Govt. of Karnataka Dr. Ambedkar Veedhi, MS Building Bengaluru – 560 001, Karnataka (31.01.2018 to 30.01.2021)
13	**Shri Yogesh** S/o Shri Shivananjappa Village Rangepura PO: Marithammena Halli Dodda Madda Hobli, Arkalgudu Tq., Hassan Dist., Karnataka (31.01.2018 to 30.01.2021)
14	**Shri K. Mudde Gowda** S/o Shri Kempe Gowda Kempaiana Hundi, T. Narasipura Tq., Mysuru District, Karnataka (31.01.2018 to 30.01.2021)
15	**Shri P. Somanna** S/o Late Puttaswamy Suttur Vilage, Biligere Hobli Nanjangud Taluq, Mysuru District Karnataka (31.01.2018 to 30.01.2021)
V	**UNDER SECTION 4(3)(e)**
16	**Tmt. P. Sri Venkada Priya, IAS** Director (Sericulture) Department of Sericulture Govt. of Tamil Nadu Nethaji Nagar, Hasthampatty Salem – 636 007, Tamil Nadu (27.10.2017 to 26.10.2020)
VI	**UNDER SECTION 4(3)(f)**
17	**Smt. Madhumita Choudhury, IAS** Commissioner of Textiles and Sericulture Govt. of West Bengal New Secretariat Building, 6th Floor Block-A, Kiran Sarkar Ray Road Kolkata – 700 001, West Bengal (31.01.2018 to 30.01.2021)
18	**Janab Mohammad Sohrab** S/o Late Yar Mohammad Village-Mongolian, P.O. Charsale P.S. Raghunathganj – 742 235 Dist. Murshidabad, West Bengal (17.03.2017 to 16.03.2020)
VII	**UNDER SECTION 4(3)(g)**
19	**Shri Chiranjiv Choudhary, IFS** Commissioner of Sericulture Govt. of Andhra Pradesh Department of Sericulture TTPC Building, 1st Floor, Old Market Road Chutugunta, Besides Mini Raythu Bazar Guntur – 522 007, Andhra Pradesh (31.01.2018 to 30.01.2021)
20	**Shri Mukta Nath Saikia, ACS** Director of Sericulture Govt. of Assam Directorate of Sericulture, (Near Research Gate), Guwahati – 781 022, Assam (08.12. 2017 to 07.12. 2020)
21	**Shri Saket Kumar, IAS** Director Handloom & Sericulture Dept., Govt. of Bihar, Vikas Bhavan Patna – 800 015, Bihar (08.12. 2017 to 07.12. 2020)
22	**Shri Shyam Lal Dhawde** Director Directorate of Rural Industries (Sericulture Sector), Govt. of Chhattisgarh 4th Floor, Block-A, Indravathi Bhawan New Raipur, Chhattisgarh (16.09.2016 to 15.09.2019)
23	**Shri Manjunath Bhajantri, IAS** Director Directorate of Handloom, Sericulture and Handicrafts, Department of Industries, Mines & Geology, Govt. of Jharkhand Udyog Bhavan, 3rd Floor, Near All India Radio No.5, Ratu Road, Ranchi – 834 001 Jharkhand (02.06.2016 to 01.06.2019)

#	NAME & ADDRESS OF THE MEMBER
24	**Dr. Madhu Khare, IAS** Commissioner of Sericulture Govt. of Madhya Pradesh Lower Basement, Satpura Bhawan Bhopal – 462 004, Madhya Pradesh (27.10.2017 to 26.10.2020)
25	**Shri Madan Pal Arya** Directorate of Sericulture Govt. of Uttar Pradesh LDA Commercial Complex, 1st Floor Vishwas Khand – III, Gomti Nagar Lucknow – 226 010, Uttar Pradesh (14.10.2015 to 13.10.2018)
26	**Shri Anand Yadav** Director of Sericulture Directorate of Sericulture Govt. of Uttarakhand, Premnagar Dehradun – 248 007 Uttarakhand (02.06.2016 to 01.06.2019)
VIII	UNDER SECTION 4(3)(h)
27	**Shri Mohmaad Afzal Bhat, IAS** Principal Secretary Govt. of Jammu & Kashmir Agriculture Production Dept., Room No.205 / 206, II Floor Civil Secretariat Srinagar – 190 001(J & K) (31.01.2018 to 30.01.2021)
IX	UNDER SECTION 4(3)(i)
28	**Shri Baldev Chauhan** Deputy Director of Industries (Sericulture), Directorate of Industries, Udyog Bhavan, Govt. of Himachal Pradesh, Shimla – 171 001 Himachal Pradesh (02.06.2016 to 01.06.2019)
29	**Shri Salam Kunjakishore Singh, MCS** Director of Sericulture Manipur Sericulture Project Complex Govt. of Manipur, Imphal East – 795 001 Manipur (02.06.2016 to 01.06.2019)
X	PERMANENT INVITEES
1	**Dr. Kavita Gupta, IAS** Textile Commissioner Ministry of Textile, GoI., New CGO Building No. 48, New Marine Lines, PB. No. 11500 Mumbai-400 020, Maharastra
2	**Shri Satish Gupta** Chairman Indian Silk Export Promotion Council B-1 Extn., A-39, Mohan Co-operative Indl., Estate, Mathura Rd., New Delhi –110 044
3	**Shri L. Venkatram Reddy** Director of Sericulture (FAC) Govt. of Telangana, Road No. 72 Prashashan Nagar Film Nagar – Post Hyderabad – 500 033, Telangana
4	**Shri Sanjay Meena, IAS** Director of Sericulture Govt. of Maharastra Administrative Building No.2 6th Floor, B-Wing, Civil Lines Commissionerate Office Area Nagpur – 440 001, Maharashtra
5	**Ms. Shubha Sarma, IAS** Commissioner-cum- Secretary Handlooms, Textiles & Handicrafts Department, Govt. of Odisha Bhubaneswar - 751 001, Odisha
6	**Dr. S. Ayyappan** (Chairman, RCC, CSB) No. 172, Shreepadam, Ground Floor 5th Main , Avalahalli BDA Extension, Giri Nagar Bengaluru - 560 085, Karnataka

Annexure - III

Statement indicating the details of State-wise funds released and Utilization Certificates received under beneficiary schemes of "Silk Samagra" during 2016-17 of XII Plan & Funds released during 2017-18

(Rs.in lakh)

#	State	2016-17			2017-18*
		CSS			CSS
		Funds released	*UC Received (Only State submitted UC)*	*Balance*	*Funds released*
1	Karnataka	672.65	223.05	449.60	
2	Andhra Pradesh	1171.76	838.80	332.96	857.74
3	Telangana	204.88	194.48	10.40	210.83
4	Tamil Nadu	948.66	919.52	29.14	1110.44
5	Maharashtra	17.46		17.46	81.52
6	Kerala	146.60	84.61	61.99	
7	Uttar Pradesh	20.00		20.00	267.94
8	Madhya Pradesh	354.57		354.57	
9	Chhattisgarh	186.53	36.76	149.77	1119.69
10	West Bengal	11.62		11.62	115.47
11	Bihar	370.61	40.52	330.09	301.33
12	Jharkhand	56.34		56.34	396.26
13	Odisha	9.92		9.92	115.67
14	Jammu & Kashmir	464.85	74.70	390.15	631.88
15	Himachal Pradesh	814.29	814.29	0.00	1037.20
16	Uttarakhand	1018.24	552.60	465.64	1554.12
17	Haryana				
18	Punjab				128.52
19	Assam	Covered under NERTPS			
20	KAAC				
21	Bodoland Territorial Council				
22	Arunachal Pradesh				
23	Manipur				
24	Meghalaya				
25	Mizoram				
26	Nagaland				
27	Sikkim				
28	Tripura				
	Total release to States	6468.98	3779.33	2689.64	7928.61
	Central Silk Board	556.25	4.15	552.10	120.63
	Total for All Zones	7025.23	3783.48	3241.74	8049.24

** Funds release includes other agencies vis-a-vis CSTRI, BTSSO, PRADAN etc.*

IImplementation of Sericulture Programme with Convergence support of RKVY, MGNREGA, Tribal Development Fund etc., during 2017-18

[Rs. in Lakhs]

State	RKVY					MGNREGA					Others (**)					Total				
	Project Prepared		Project Sanctioned		Fund Released	Project Prepared		Project Sanctioned		Fund Released	Project Prepared		Project Sanctioned		Fund Released	Project Prepared		Project Sanctioned		Fund Released
	No.	Amount	No.	Amount		No.	Amount	No.	Amount		No.	Amount	No.	Amount		No.	Amount	No.	Amount	
SOUTHERN ZONE																				
Karnataka	7	1288	7	771	638	1	10873.51	1	14399	5166.46	10	39394	10	39591.6	39591.6	18	51555.51	18	54761.6	45396.06
Andhra Pradesh	9	1881.68	6	827	0	3	3298.82	3	3298.82	431.58	19	8548.1	17	2560	1819.2	31	13728.6	26	6685.82	2250.78
Telangana	9	598.55	2	38.4	0	3	4783	1	1490.38	157.47	0	0	0	0	0	12	5381.55	3	1528.78	157.47
Tamil Nadu	0	0	0	0	0	0	0	0	0	0	1	1791	1	1791	1791	1	1791	1	1791	1791
Maharashtra #	5	737	5	737	141.62	1	6100	1	6100	1435.2	2	830.21	2	793.69	666.42	8	7667.21	8	7630.69	2243.24
Sub-total	**30**	**4505.23**	**20**	**2373.4**	**779.62**	**8**	**25055.33**	**6**	**25288.2**	**7190.71**	**32**	**50563.31**	**30**	**44736.29**	**43868.22**	**70**	**80123.87**	**56**	**72397.89**	**51838.55**
North Western Zone																				
Jammu & Kashmir	4	43.06	4	43.06	21.53	0	0	0	0	0	18	657.38	18	657.38	657.38	22	700.44	22	700.44	678.91
Uttarakhand	3	517.19	3	433.5	146	8	378.257	7	338.66	115.26	0	0	0	0	0	11	895.447	10	772.16	261.26
Punjab	1	75.38	1	67.7												1	75.38	1	67.7	0
Sub-total	**8**	**635.63**	**8**	**544.26**	**167.53**	**8**	**378.26**	**7**	**338.66**	**115.26**	**18**	**657.38**	**18**	**657.38**	**657.38**	**34**	**1671.27**	**33**	**1540.3**	**940.17**
Central Western																				
Uttar Pradesh	1	1570.25	1	1570.25	524.34	56	307.47	2	307.47	34.99						57	1877.72	3	1877.72	559.33
Madhya Pradesh	0	0	0	0	0	1	835	1	835	587	0	0	0	0	0	0	835	1	835	587
Chhattisgarh	0	0	0	0	0	16	1057.45	16	963.55	918.66	1	77.92	1	77.92	77.92	17	1135.37	17	1041.47	996.58
Sub-total	**1**	**1570.25**	**1**	**1570.25**	**524.34**	**73**	**2199.92**	**19**	**2106.02**	**1540.65**	**1**	**77.92**	**1**	**77.92**	**77.92**	**74**	**3848.09**	**21**	**3754.19**	**2142.91**
Eastern Zone																				
West Bengal	2	1.05	2	1.05	0	10	56.64	6	51.43	0	9	69.13	6	68.7	67.67	21	126.82	14	121.18	67.67
Bihar	1	185	0	0	0	0	0	0	0	0		1188		1188	1188	1	1373	0	1188	1188
Jharkhand	0	0	0	0	0	0	0	0	0	0	1	54	1	54	3.77	1	54	1	54	3.77
Odisha	1	406	1	406	406	1	3070	1	1755	1755	1	38.44	1	38.44	38.44	3	3514.44	3	2199.44	2199.44
Sub-total	**4**	**592.05**		**407.05**	**406**	**11**	**3126.64**	**7**	**1806.43**	**1755**	**11**	**1349.57**	**8**	**1349.14**	**1297.88**	**26**	**5068.26**	**18**	**3562.62**	**3458.88**
North Eastern States																				
Mizoram	1	95.6		95.6	0											1	95.60	1	95.60	0
Sub-total	**1**	**95.6**		**95.6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**95.60**	**1**	**95.60**	**0**
Grand Total	**44**	**7398.76**		**4990.56**	**1877.49**	**100**	**30760.15**	**39**	**29539.31**	**10601.63**	**62**	**52648.18**	**57**	**46820.73**	**45901.40**	**205**	**90807.09**	**129**	**81350.60**	**58380.52**

** State Plan, SBGF, ISDS, TANII, MKSP # DPC Note : Neg. progress under the Scheme during the current year in other sericulture states.

Annexure-V (A)

STATE-WISE SILK PRODUCTION DURING 2017-18

State	Mulberry plantation (Hectare)	Mulberry Raw Silk (MT)			Vanya Raw Silk (MT)				Total (M+V) (MT)
		Bivoltine hybrids	Cross Breed	Total	Tasar	Eri	Muga	Total	
Andhra Pradesh	36638	1216	5559	6775	3.48			3	6778
Arunachal Pradesh	140	2	0.3	2.3		50	1.5	51.5	54
Assam & Bodoland	8594	59		59		4645	157	4802	4861
Bihar	557	5	12	17	36	10		46	63
Chhattisgarh	261	0.3	8	8.3	523			523	532
Haryana	94	0.7		0.7					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	8.5	92.5	4.8	290	1.17	296	388
Meghalaya	3209	39		39		1006.8	30.4	1037	1076
Mizoram	4094	61	14.2	75	0.05	8	0.8	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					0.001
Tamil Nadu	18854	1775	210	1984					1984
Telangana	3517	158	0.04	158	4.5			5	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 Monthly reports received from State Sericulture Departments*

Annexure-V(B)

STATE-WISE SILK PRODUCTION DURING 2016-17

State	Mulberry plantation (Hectare)	Mulberry Raw Silk (MT)			Vanya Raw Silk (MT)				Total (M+V) (MT)
		Bivoltine hybrids	Cross Breed	Total	Tasar	Eri	Muga	Total	
Andhra Pradesh	33156	1056	4914	5970	1.33			1.33	5971
Arunachal Pradesh	100	2		2		42	1	43	45
Assam& Bodoland	7898	52		52		3619	139	3759	3811
Bihar	421	5.9	17.6	23.5	43.5	9.9		53.5	77
Chhattisgarh	322	0.32	7.3	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	84.3	26.3			26.3	111
Maharashtra	3480	228	3	231	27			27	259
Manipur	7548	149	12	161	5	363	1	369	529
Meghalaya	3209	28		28		872	27	899	927
Mizoram	4009	47	18	65	0.02	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		54	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**

Source: *Compiled from MIS reports received from State Sericulture Departments*