

# FUNCTIONING OF CENTRAL SILK BOARD & PERFORMANCE OF INDIAN SILK INDUSTRY

(As on 1<sup>st</sup> April, 2019)



**CENTRAL SILK BOARD**  
(Ministry of Textiles, Govt. of India)  
**BANGALORE-560 068**

# **FUNCTIONING OF CENTRAL SILK BOARD & NOTE ON SERICULTURE**

## **A. FUNCTIONING OF CENTRAL SILK BOARD**

The Central Silk Board (CSB) is a Statutory Body, established during 1948, by an Act of Parliament (Act No.LXI of 1948). It functions under the administrative control of the Ministry of Textiles, Government of India, having head quarter at Bangalore. The Board comprises 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 Chairperson of the Board to be appointed by the Central Government and two officials to be nominated by the Central Government, one of whom shall be the head of the Silk Division in the Ministry of Textiles as the Vice-Chairperson and one shall be the Secretary of the Board, both being the officers not below the rank of Joint Secretary to the Government.

In order to co-ordinate the sericulture development programmes in different States & for undertaking pre-shipment inspection of silk goods meant for exports, the Central Silk Board has established 8 Regional Offices at New Delhi, Mumbai, Kolkata, Hyderabad, Bhubaneshwar, Guwahati, Lucknow and Patna. Regional Offices of CSB maintain a close liaison with the State Sericulture Departments, field units and CSB field functionaries to co-ordinate transfer of technology. Regional Offices are also conveners of State Level Sericulture Co-ordination Committee meetings constituted by the Central Silk Board. The existing staff strength of CSB is 2,708 as on 01.04.2019.

The mandated activities of CSB are Research and Development, maintenance of four tier silkworm seed production network, leadership role in commercial silkworm seed production, standardizing and instilling quality parameters in the various production processes and advising the Government on all matters concerning sericulture and silk industry. These mandated activities of Central Silk Board are being carried out by the 191 units of CSB located in different States through a integrated Central Sector Scheme viz “**Silk Samagra**” an integrated scheme for development of silk industry with the following four components:

1. Research & Development, Training, Transfer of Technology and I.T. initiatives.
2. Seed Organization.
3. Coordination and Market Development.
4. Quality Certification Systems, Export, Brand Promotion & Technology up-gradation.

### **1. RESEARCH & DEVELOPMENT, TRAINING, TRANSFER OF TECHNOLOGY AND I.T. INITIATIVES**

The Research & Training Institutes of the CSB provide scientific and technological support for enhancing production and productivity for sustainable sericulture through innovative approaches. The main institutes at Mysore (Karnataka) Berhampore (West Bengal) and Pampore (J&K) deal with Mulberry sericulture whereas Ranchi (Jharkhand) deals with Tasar culture and Lahdoigarh, Jorhat (Assam) deals with Muga and Eri culture. Regional Sericulture Research Stations have been functioning for the development of region specific technology package and dissemination of research findings as per regional needs. Besides, a network of Research Extension Centre (RECs) &

its sub units are also functioning to provide extension support to sericulturists. In order to provide R&D support in post cocoon sector, the Board has established a Central Silk Technological Research Institute at Bangalore. In addition, the CSB has also set up Silkworm Seed Technology Laboratory in Bangalore (Karnataka), Central Sericultural Germplasm Resource Centre at Hosur (Tamil Nadu) and Seri-Biotech Research Laboratory at Bangalore.

During the year 2018-19, a total of 24 new research projects have been initiated and 50 projects have been concluded by various R&D institutes of CSB and currently a total of 115 research projects *viz.*, 67 in Mulberry Sector, 38 in Vanya Sector and 10 in Post Cocoon Sector are under progress.

## **Research & Development (Highlights of Research Programmes)**

### **(i) R&D on Host Plant (Mulberry):**

- ❖ A high yielding mulberry genotype C-9, suitable for low input soil was identified and a mulberry variety PPR-1, suitable for temperate conditions with high rooting percentage was developed.
- ❖ All India Coordinated Experimental Trials for Mulberry (AICEM) phase IV with three new high yielding mulberry varieties *viz.*, AGB-8, PPR-1, and C1360 have been initiated at 20 test centers across the country.
- ❖ One Final Yield Trial with six triploid mulberry genotypes has been initiated.
- ❖ PYT with 25 selected mulberry hybrids has been initiated.
- ❖ FYT at 4 different test centers started by plantation of short listed hybrids.
- ❖ Development of Distinctiveness, Uniformity and Stability (DUS) has been standardized for mulberry and published by PPV & FRA, New Delhi.
- ❖ Multilocational study with C9 having moisture stems tolerance has been initiated in Eastern and North eastern region of India.
- ❖ “Rot-fix” for management of root rot disease has been developed with 68-74% of efficiency in reviving the infected plants and is being popularized.
- ❖ Tested Ankur, a combination of organic and inorganic nutrients, under a consultancy project.
- ❖ Developed a technology for the management of root rot disease in Kashmir region.
- ❖ Developed a micro propagation protocol with a success rate of 83% for the variety Goshorami.
- ❖ During the last 10 years, a total of 14 mulberry varieties have been released for commercial exploitation and four Vanya host plants have been recommended for commercial exploitation.

R&D efforts have helped in improving the mulberry productivity from 50 MT/Ha/yr during 2005-06 to 60 MT/Ha/yr during 2018-19.

### **(ii) R&D on Mulberry Silkworm:**

- ❖ Popularized the recently authorized high yielding silkworm hybrid G11 x G19 with yield potential of 68.0 kg cocoons /100 dfls, in Karnataka, Tamil Nadu, Andhra Pradesh, Telangana, Kerala and Maharashtra.
- ❖ Popularized the recently authorized high yielding silkworm hybrid B.Con.1 x B.Con.4 in West Bengal, Orissa, Jharkhand and North East States for commercial use.
- ❖ Using silkworm genetic resources from Bulgaria 25 Oval FC and 15 Dumbbell FCs were developed.

- ❖ The newly developed MASN silkworm lines were tested in the field in various agro climatic conditions for their suitability in Southern India.
- ❖ Cauveri gold (MV11 X S8) an improved cross breed with 62 to 74 kg/100dfls has been developed.
- ❖ Developed synthetic oviposition stimulant blend, Arka Eggstra for enhancing the egg laying in silkworm.
- ❖ Developed Transgenic Silkworm for the over-expression of disease-resistant genes for enhanced immunity.
- ❖ 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. In addition to these two new productive bivoltine hybrids viz., CSR52N x CSR26N and (CSR52N.S8N) x (CSR16N.CSR26N) with BmNPV tolerance and Improved cross breeds viz., ICB17 x S8 and ICB14 x N23 with a yield potential of 70kg/100 dfls and 2A-3A silk have been developed and are under testing in the field.
- ❖ Developed LAMP - a technique to detect *Nosema Bombycis* and validated with seed stocks. The same was extended for muga silkworms also.
- ❖ Developed sex-pheromone based “Uzi-lure”, in collaboration with NBAIR-Bengaluru, and was evaluated for effective management of uzifly in the laboratory and field conditions.
- ❖ In the last 10 years, 13 mulberry Bivoltine silkworm hybrids, 12 mulberry cross breed hybrids 5 Vanya silkworm breeds have been released for commercial exploitation.

R&D efforts have helped in improving the yield from 48 Kg/100 dfls during 2005-06 to 60.3 Kg/100 dfls during 2018-19

### **(iii) R&D on Vanya Silk:**

#### **Vanya Host Plant**

- ❖ Identified an alternative food plant *Lagerstroemia speciosa* for Tasar silkworm rearing, which is easy rooter and fast growing. Trials are on to validate the rearing performance.
- ❖ For selecting fast growing drought tolerant *Terminalia arjuna* accessions, 10 superior accessions were screened, of which, Accession No. 525 & 523 were found superior in terms of higher stress tolerant index with better plant growth, physiological & biochemical characters.
- ❖ Package developed for moisture conservation and nutrient enrichment of soil in *Terminalia* plantation by incorporating small water catchments at plantation site, wild leguminous plant (*Mucuna bracteata*) and Phosphate Solubilizing Bacteria (PSB). Average increase in leaf yield up to 49.51% was recorded using this package.
- ❖ Two Som accessions (S3 & S6) resistant to leaf spot disease, leaf blight and rust are being popularized in the field.
- ❖ Integrated Nutrient Management (INM) package developed for castor cultivation and it is under field testing.
- ❖ *Ailanthus grandis* (Barpat) has been established as potential perennial food plant of Eri silkworm and recommended for field utilization. It recorded Leaf yield of 32 MT/ha/yr as compare to Kesseru plants leaf yield of 25 MT/ha/yr.
- ❖ Package of practices is recommended for the efficient utilization of Sal flora in Jharkhand and also to improve the Laria productivity on Sal.
- ❖ Biochemical analysis proved similarity in the leaf biochemical of both Castor and *Alianthus grandis*.

- ❖ The *Alternaria ricini* have been isolated in pure form from the infected castor leaves. In bioassay studies antagonistic efficacies of isolate rhizobacteria were tested and isolate LRP-4 and HF-3 showed the maximum inhibition of test pathogen.
- ❖ A total of 64 PSB isolates have been isolated from 10 rhizosphere soil samples of Keonjhar region and in vitro phosphate solubilisation efficiency estimation among these PSB isolates is under progress.

### **Vanya Silkworm**

- ❖ Tasar Daba bivoltine silkworm 'BDR-10' is under popularization.
- ❖ Multi-location field trial for high fecundity Tasar silkworm line, CTR-14 was conducted at five locations. 20-22% gain over control in respect of productive traits was recorded.
- ❖ Two promising lines of Tasar silkworms, DTS and DT-12 selected and 38250 seed cocoons of these lines are under preservation.
- ❖ Eri silkworm breed 'C2' is under popularization.
- ❖ Two superior Muga silkworm lines CMR-1 and CMR-2 are under field testing.
- ❖ Sequenced the genome of Muga silkworm *Antheraea assamensis* and the genome size is 500mb.
- ❖ Muga silkworm eggs preservation schedules developed to facilitate uniform hatching is under field testing.
- ❖ Field trial of eri ecorace SR-025 at semi-arid conditions of Andhra Pradesh is under progress.
- ❖ Based on characterization, evaluation and categorization of wild sericigenous insects, *Antheraea frithi* has been selected as the future prospective species of the NE region.
- ❖ Six promising strains of eri silkworm viz., YP, YS, YZ, GBP, GBS and GBZ have been isolated from Borduar and Titabar ecoraces based on body marking and color. Two combinations viz. YZ x YS and GBS x GBZ are found promising based on rearing performance. One trial grainage of these combinations completed.
- ❖ The *in-situ* conservation for Muga and other wild silk moth's species is being done under NERTPS programme in four states viz., Assam, Meghalaya, Arunachal Pradesh and BTC.
- ❖ Antennal responses of yellow fly with the volatiles extracted from tasar host plant and *Antheraea mylitta* at feeding and spinning stages were studied by using Electroantennogram (EAG).
- ❖ Developed an organic module against pest and diseases of muga silkworm.
- ❖ Pathobiome associated with muga silkworm flacherie disease is established with comparative genomics.
- ❖ The longest embryonic developmental stage has been detected at the ages of 68 to 72 hr. old embryo which helps in developing suitable egg preservation schedules.
- ❖ Developed Pebrine Visualization Solution (PVS) to detect pebrine easily, in Tasar silkworm, by enhancing the clarity of smear, removing of cellular debris, liberation and visibility of pebrine spores in the Tasar mother moth.
- ❖ Viral & bacterial pathogens associated with flacherie disease in *Antheraea mylitta* D. were isolated & identified.
- ❖ Whole genome of baulovirus causing tiger band disease in *Antheraea proylei* identified (accession:GI 1371952746)
- ❖ A new chemical disinfectant has been formulated for controlling bacterial flacherie disease, caused by *Bacillus sp.* and *Pseudomonas sp.*, in muga

ecosystem and bioassay studies of the same under laboratory condition is under progress.

- ❖ Trial of Semi-synthetic diet “Tasar Amrit” was carried out at JSDI Ranchi, PPC Kharsawa, PPC Hatgamaria and PPC Bengabad (JH), RTRS Baripada (OD), RTRS Bhandara (MH), REC Kapista (WB) and REC Kathghora (CH).
- ❖ Sericin has been separated from tasar silk fibre waste for its isolation and characterization for commercial utilization. The availability of sericin in different fibre waste is about 1.8-2.5%.

### **New Breeds/Varieties approved for popularization:**

#### **II. Mulberry sector - Host Plants**

A. Mulberry varieties authorized recently:

#	New breeds/varieties	Region
1	G4	South zone
2	C2038	Eastern and North Eastern India
3	Tr-23	Hilly areas of Eastern and North Eastern India

B. Mulberry varieties selected for authorization trial:

#	Mulberry varieties	Test areas
1	AGB-8	Southern India under resource constraints
2	C-1360	Eastern and North Eastern
3	PPR-1	Temperate regions of India

#### **II. Mulberry sector - Silkworms**

A. Silkworm hybrids recommended for Authorization by Hybrid Authorization Committee (HAC) recently.

#	New breeds/varieties	Region
1	G11x G19	South zone
2	B. con 1 x B. con 4	East and North-East
3	M6DP(C) x (SK6xSK7)	

B. Mulberry Silkworm hybrids selected for authorization test:

#	Silkworm Hybrids	Test areas
1	S8 x CSR16	All Southern states and Maharashtra
2	MV1x S8	All Southern states and Maharashtra
3	SSBS5 x SSBS6	Temperate regions of India

#### **(iv) R&D in Post Cocoon:**

- ❖ Development & Demonstration of Indigenous Automatic Silk Reeling Machine (ARM) to produce superior quality import substitute silk.
- ❖ Demonstration of Solar powered low cost spinning machine that can be operated in rural areas by harnessing solar power.
- ❖ “Tasar Plus” – a cooking / softening chemical recipe has been developed for more efficient cooking of Tasar cocoons.
- ❖ Technologies developed for Hot air drying of Tasar cocoons using conveyor hot air drier.

- ❖ Popularization of Low cost eight end multi-end reeling machine for tasar silk reeling.
- ❖ In Vanya silk post cocoon sector Wet reeling of tasar and Muga cocoons, Sizing machine for tasar silk, Modified dry reeling machine for tasar cocoons, Pressurized hank degumming machine and Equipment for recycling of silk reeling water are being popularized in field.
- ❖ Developed a conveyor cocoon drying machine with a capacity of drying 1.2 MT cocoons/day.
- ❖ Developed a new reeling machine “Sonalika” as a replacement for “Bhir” reeling” of Muga cocoons.
- ❖ Demonstration of Pellade extraction and pupa separation machine to remove pellade layer from spent silkworm pupae.
- ❖ Developed technology of “Use of Slug catcher (as replacement for porcelain button) for Slug removing” and is being field tested.
- ❖ Developed technology of “Yarn degumming using CSTRI Eco degumming machine” and is being field tested.
- ❖ Vertical Reeling Machine developed by the Institute has been fine-tuned and made 3 ends machine for higher productivity.
- ❖ Developed Mulberry, Tasar, Muga & Eri silk fabric reinforced with fibroin matrix.
- ❖ Developed technology for extraction of sericin from silk yarn using HTHP method.
- ❖ Developed different varieties of Chanderi sarees (Silk x Silk).
- ❖ Developed Mulberry single jersey plain & digitally printed ladies tops
- ❖ Developed Mulberry interlock structure with tie & dye yarn
- ❖ Developed Mulberry & cotton union knits with dye variation as design component
- ❖ Developed Mulberry jacquard tuck knit designs for ladies tops
- ❖ Developed Knits made of mulberry & cotton mélange yarns
- ❖ Eri silk nonwoven fabrics have been successfully prepared and trials on impregnation with cosmetic formulations for face mask application is under progress at L’ORéal.
- ❖ Characterizing the sericin for its utilization in cosmetics (soaps, shampoos, hair creams, etc and as an additive for talcum powder) applications.
- ❖ Technologies developed for Cooking Raily Tasar cocoons for wet reeling.
- ❖ A biofinish has been developed, which enhances the properties of Tasar fabrics in terms of aesthetic and thermo-physiological comfort significantly.
- ❖ Developed technology for development of diversified silk knitwear products/ garments using international quality Indian silk.

R&D efforts have helped in improving the Renditta from 8.2 during 2005-06 to 7.3 during 2018-19.

#### **(v) Patents & Commercialization:**

##### **1) During 2018-19**

###### **a. Patents obtained:**

1. Chemical formulation for cooking Muga Cocoons for higher silk yield
2. Improved handloom using pneumatic lifting mechanism for jacquards
3. Improved reeling cum twisting machine

###### **b. Applications filed for patenting:**

1. Applied for patenting of product 'Rot Fix'- A broad spectrum eco-friendly formulation for control of Toot rot disease in Mulberry.

**c. Technologies/products 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 disinfectant.
- III. Rot fix, a broad spectrum eco-friendly formulation for control of Root Rot disease in Mulberry.

**(vi) Collaborative Research Projects and Biomaterial Research:**

- 1) The R&D institutes of CSB, in addition to the in-house funded projects, are also carrying out collaborative research projects with the financial assistance from DBT, DST, MNRE etc. During 2018-19, a total of 17 research projects with external funding are being carried out.
- 2) CSB Institutes also collaborate with other research Institutes such as IIT Kharagpur, IIT, Guwahati, IARI New Delhi, IIHR, Bangalore, CCMB Hyderabad, IISc, Bangalore, BTRA Mumbai, GKVK Bangalore, ICAR-NBAIR, Bangalore, NESAC, Shillong, NEIST Jorhat, NBSS & LUP, Jorhat, RFRI, Jorhat, BIT Mesra, NCL Pune, etc. At present, 09 such projects are being carried out in collaboration with some of these institutes.
- 3) International collaboration with different institutes has also been undertaken. Three projects with Deakin University, Australia on post cocoon technology have been initiated, a project with a Research Institute in Bulgaria on breed improvement and another project on molecular characterization of Ifla virus infecting tasar silkworm with Swedish Research Council have been initiated.
- 4) MOU has been made with research institutions in Bulgaria, Japan, China, and Australia for exchange of Genetic material to improve hybrid vigor.

**Training**

The R&D institutions of CSB, spread across the country, covering all activities on the silk value-chain pertaining to all the four silk sub-sectors, are intensively involved in training, skill seeding and skill enhancement on a sustainable basis. CSB's capacity building and training initiatives have been restructured under the following five heads:

- (i) Skill Training & Enterprise Development Programmes (STEP):** Under this category a variety of short-term training modules focusing on Entrepreneurship development, In-house and industry Resource Development, Specialized Overseas Training, popularization of sericulture technologies, lab to land technology demonstration programmes, training impact assessment surveys etc. have been planned. Some of the popular programmes under this component are: Entrepreneurship Development Programme, Technology Up-gradation Programme, Resource Dev. Programme / Trainers Training Programme, Competency Enhancement Training Programme, Disciplinary Proceedings Training, Management Development Programme etc.



**(ii) Establishment of Sericulture Resource Centre (SRC):** SRCs are training cum facilitation centres established in a select Mulberry Bivoltine & Vanya clusters with a unit cost of Rs.2.00 lakhs each to act as an important link between Extension Centres of R&D labs and the beneficiaries. The purpose of these SRCs is - technology demonstration, skill enhancement, one-stop shop for Seri-inputs, doubt clarification and problem resolution at cluster level itself. As on date 23 SRCs are functioning.

**(iii) Capacity Building & Training by R&D Institutes of CSB:** In addition to conducting structured long-term training programme (Post Graduate Diploma in Sericulture & Intensive Sericulture Training) the R&D institutes of CSB also conduct technology-based training both for farmers and other stakeholders besides organizing Krishi Melas, Farmer's day, farmer's interaction workshops etc. for empowering the framers and other industry stakeholders.

**(iv) Capacity Building in Seed Sector:** Silkworm seed is the most critical sector that drives the entire silk value chain. The quality of seed determines the quality of industry output. Therefore addressing the capacity building and training needs of this sector is of paramount importance. It is proposed to conduct a variety of training programmes to cover industry stakeholders like – Pvt. Silkworm Seed Producers, Adopted Seed Rearers, Managers and work force attached to Govt. owned grainages.

**(v) Information, Education and Communication (IEC):** IEC is meant for supporting Capacity Budding and training initiatives by popularizing recommended technologies though Brochures, pamphlets, handouts, booklets etc. This component also propose to produce technology based instructional videos, study materials and documentary films to show case the industry.

Table below shows details of number of persons trained under programmes organized by the Research & Training Institutes of CSB during the years 2016-17, 2017-18 and 2018-19 is given below:

#	Training courses	No. of persons Trained					
		2016-17		2017-18		2018-19	
		Target	Achmt	Target	Achmt	Targe	Achmt.
1	Structured Courses (PGDS, Mulberry & Non-Mulb.	100	111	265	216	230	191
2	Farmers Skill Training, Technology Orientation Programmes, Capsule & Adhoc Courses and Exposure Visit	9400	9034	8030	8853	8,290	8,050
3	Other Training Programmes	4000	6628	4945	6322	3,045	4,862
4	STEP	1500	917	2030	1901	1,260	782
	<b>TOTAL</b>	<b>15000</b>	<b>16690</b>	<b>15270</b>	<b>17292</b>	<b>12,825</b>	<b>13,885</b>

**Transfer of Technology (TOT):**

The technologies emanated out of the concluded projects are being effectively transferred to the field through various extension communication programmes viz, Krishi Melas, Group Discussions, Enlightenment programmes, Field Days, Farmers' Meet, Audio Visual programmes, Technology demonstrations etc. During 2018-19 a total 1438 ToT programmes have been organized and 38 technologies were transferred effectively to the user level under pre-cocoon sector. Further, in post cocoon sector a total of 16 technologies were demonstrated to 1514 persons & trained 1023 persons in various aspects of post cocoon activities and tested 91405 cocoon/silk samples.

**(i) Implementation of Cluster Promotion Programme for Bivoltine silk:**

During XII Plan, the foremost thrust was to augment the import substitute silk in the country and to increase the production of BV silk to 5000 MT from the production level of 1685 MT (2011-12). To achieve the target, Central Silk Board in association with State Sericulture Departments had organized 172 Bivoltine Clusters and achieved production of 5266 MT Bivoltine silk at the end of XII Plan, which includes 3405 MT production through clusters.

Cluster Promotion Programme is being continued from 2017-18 to 2019-20 mainly to focus on enhancing the Country's bivoltine raw silk production target of 8500 MT at the end of 2019-20. While restructuring/reorientation of some of the existing clusters of Northwestern region for effective monitoring purpose the total number of clusters were brought down to 151 clusters from the existing 172 clusters without effecting the total cluster target.

With the joint concentrated efforts, 5874 MTs of Bivoltine raw silk has been produced against Country's target of 6200 MTs during 2017-18 (11.5 % increase over 5266 MT produced in 2016-17). Bivoltine clusters contributed 4100 MT (70.0%) out of the country's total BV raw silk production of 5874 MT.

During 2018-19 the total BV raw silk production stands at 6911 MT out of which 151 clusters contributed 4987 MT (72.16%).

**(ii) Implementation of Cluster Promotion Programme for Vanya silk:**

To promote Tasar silk sector, Central Silk Board has established 22 vanya clusters in coordination with State Governments through cluster approach in 9 tasar producing States. Under this programme, a total of 2229 beneficiaries (425 seed rearers, 109 private graineurs, 4 door to door service agents and 1691 commercial rearers) were covered under capacity building. Capacity Building Training (CBT) has been imparted for 827 No. of beneficiaries and 19 awareness programmes were conducted on technology transfer service. During the year 2018-19, a total of 1.69 lakh dfls were brushed by 924 Adopted seed rearers in seed crop (I Crop) and produced 61.55 lakh seed cocoon @ 36.37 cocoons / dfl. These seed cocoons were processed by 142 private graineurs to produce 8.03 lakh dfls of which 5.98 lakh dfls were reared by 2772 commercial farmers in second crop (commercial) and produced 259.81 lakh cocoons @ 43.47 cocoon / dfl in the clusters.

**(iii) Japan Overseas Cooperation Volunteers (JOCV) under JICA:**

Central Silk Board has implemented 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. Six JOCVs have been posted in cluster locations in Karnataka (1), Tamil Nadu (1), Andhra Pradesh

(2) and Uttarakhand (2). Further, after completion of their assignment for period of 2 years, JICA, during 2018-19, has deputed 3 new JOCVs, one each in the Bivoltne Clusters of Karnataka, Tamil Nadu and Uttarakhand State to continue the JOCV activities in those clusters. The programme is extended upto December 2020.

The main objective of JOCVs are to support CSB/State Counterparts in Bivoltine Clusters to identify the field problems, assist in Extension methodology in organizing Self Help Groups/CBOs involving sericulturists for effective technology transfer identified Clusters.

### **I.T. Initiatives:**

- ❖ **DBT MIS:** Development of DBT MIS for the scheme "Development of Silk Industry" is completed and obtained security audit clearance by STQC. Linking of the same with DBT Bharath portal is in process.
- ❖ **mKisan:** CSB has widened the outreach of scientists and experts to disseminate information to provide scientific advisories to farmers through their mobile phones using mKisan Web Portal. All the main institutes are regularly providing advisories thru this portal. Till 31-03-2019, 410 advisories were sent 53,14, 565 SMS messages.
- ❖ **'SMS service'** through mobile phone on day-to-day market rates of Silk and Cocoons for the use by the farmers and other stakeholders of the industry. Both PUSH and PULL SMS services are in operation. Mobile numbers received from DOS are updated and all the registered 9361 farmers are receiving SMS messages on daily basis.
- ❖ **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. Multi lingual, multi district data is being updated regularly.
- ❖ **Video Conference:** CSB has fully fledged Video Conference facility at CSB Complex, Bangalore, CSR&TI, Mysore & Berhampore, CTR&TI, Ranchi, CSR&TI, Pampore, CMER&TI, Lahdoigarh and RO, New Delhi. From 1<sup>st</sup> April 2018 to 31<sup>st</sup> Mar 2019, 33 multi-studio Video conferences are conducted.
- ❖ **CSB website:** Central Silk Board has a website "csb.gov.in" in bi-lingual English and Hindi. Maximum information is disseminated through this portal for the benefit of common citizen, who may need to know about the organisation as well as schemes and other details. Publicity of sericulture plan programmes, achievements and sharing of success stores are featured in the website. CSB has completed the new website and in the process of getting CSB website the GIGW compliance and security audited as per Govt. of India guidelines.
- ❖ **AEBAS: Aadhaar** enabled bio-metric attendance system is being implemented at Central Silk Board. Over 4254 employees including farm workers have registered into the attendance portal. All the 121 devices are RD Services enabled. Due to re-structuring of CSB, nearly 450 employees have been shifted to different units, updation of the same is in progress.
- ❖ **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 31<sup>st</sup> Mar 2019, 6,80,180 farmers and 12,187 reelers details have been recorded by the states in the database.

- ❖ **MIS ON NERTPS "INTENSIVE BIVOLTINE SERICULTURE DEVELOPMENT PROJECT IN NORTH EAST STATES"**: MIS for Intensive Bivoltine Sericulture is developed and hosted on dedicated servers for trouble free access by all stake holders.

## 2. SEED ORGANISATION

The CSB has a chain of Basic Seed Farms supplying basic seeds to the States. Its commercial seed production centers augment efforts of the States in supplying commercial silkworm seed to farmers.

The Table below indicates the total quantity of seed production during the year 2016-17, 2017-18 and 2018-19.

(Unit: Lakh dfls)

Particulars	2016-17		2017-18		2018-19	
	Target	Achmnt.	Target	Achmnt.	Target	Achmnt.
<b>Mulberry</b>	450.00	430.37	440.00	388.35	440.00	483.04
<b>Tasar</b>	47.43	48.60	51.08	52.81	51.66	51.86
<b>Muga</b>	8.13	6.87	8.07	7.08	8.16	5.33
<b>Eri</b>	5.5	4.78	6.00	6.88	6.00	7.22
<b>Total</b>	511.06	490.62	505.15	455.12	505.82	547.45

## 3. COORDINATION AND MARKET DEVELOPMENT.

Central Silk Board administration includes Board Secretariat, Regional Offices, Certification Centers and Raw Material Banks. The Board Secretariat of CSB monitors the implementation of various schemes and coordinates with Ministry and States in implementation of various projects in sericulture sector. Several National meetings, Board meetings & Review meetings and other high level meetings are being carried out by the Board Secretariat. The Raw Material Banks operate floor price to stabilize the market price of cocoons to ensure remunerative price to primary producers.

Raw Material Bank (RMB) for Tasar at Chaibasa (Jharkhand) and Muga Raw Material Bank (MRMB) for Muga (presently merged with CMER&TI, Lahdoigarh) in Assam are functioning with the primary objective of ensuring economic and fair price to the actual Tasar & Muga cocoon producers.

The details of procurement and sale made by RMB & MRMB and its Sub-depots during 2016-17, 2017-18 and 2018-19 are given below:

(Unit : Qty.in lakh Nos. & Value in Lakh Rs.)

Year	RMB (Tasar)				MRMB (Muga)			
	Procurement		Sale		Procurement		Sale	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
2016-17	200.76	287.10	171.68	229.88	1.55	2.77	1.55	2.92
2017-18	158.18	180.78	157.65	225.32	1.59	2.32	1.59	2.43
2018-19	165.11	197.86	104.23	162.88	1.79	2.73	1.79	2.80

## **PRODUCT DESIGN, DEVELOPMENT AND DIVERSIFICATION (P3D)**

The activities under P3D are to give special focus on fabric engineering, silk blends, designing new fabric structures, design and development of new products in silk and silk blends, product development in the clusters, commercialisation of developed products, assisting the commercializing partners in providing backward linkage, technical know-how and assisting/coordinating in sample development.

### **Activities of P3D:**

- Revival of Traditional silk Products
- Design development and diversification of products with blends
- Product development based on certain identified preferences and requirement in terms of both their design and end uses
- Generating market information, updating market data and forecasting fashion trends.
- Generic and Brand promotion of Indian Silks by organising theme pavilions and display of products in silk expos /exhibitions.
- Assist silk manufacturers and exporters in development of innovative designs and fabrics in tune with the market demand.
- Display of latest developments in silk products and ultimately to create a Centre of excellence for innovations in Indian Silks.

### **Products Developed:**

1. Muga Satin fabric on power loom and Garments
2. Eri silk denim fabrics for Blazer and garments, Eri and Mulberry knits, Eri silk blanket and carpet & Eri silk thermal wear.
3. Tasar silk fabric on power looms for bridal dress.
4. Pure silk sarees and Fabrics in Chanderi cluster
5. Kanchipuram sarees with Muga silk is designed for replacement of Zari.
6. Stain guard and Aroma treated sarees
7. Silk life style products – Ladies purse,bags, socks, glouse, accessories
8. Silk sarees /fabrics printed in Bagh (MP) cluster
9. Products with traditional Lambani art work
10. Mulberry X Eri sarees with Bomkai Design
11. Mulberry saree with Nagaland tribal motif and Silk /linen, silk / cotton, silk / modal fabrics

## **4. QUALITY CERTIFICATION SYSTEM, EXPORT BRAND PROMOTION & TECHNOLOGY UPGRADATION**

One of the main objectives of the Quality Certification System is to initiate suitable measures towards strengthening quality assurance, quality assessment and quality certification. Under the scheme, two components viz. “Cocoon and 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. Cocoon Testing Centres which have been established in different Cocoon Markets with the support under CDP facilitate cocoon testing. The network of Certification Centres of Central Silk Board attached to the Regional Office carryout voluntary pre-shipment inspection of silk goods meant for export to ensure quality of silk goods exported from India. Besides, Central Silk Board is popularising “Silk Mark”, for purity of silk products through the Silk Mark Organisation of India (SMOI). “Silk Mark”, an

assurance label, protects the interests of the consumers from the traders selling artificial silk products in the name of pure silk.

The progress achieved under the Silk Mark Scheme during 2016-17, 2017-18 and 2018-19 is given below:

Particulars	2016-17		2017-18		2018-19	
	Target	Achmnt	Target	Achmnt	Target	Achmnt
Total No. of new Members enrolled	250	254	250	271	250	291
Total No. of Silk Mark Labels sold (Lakh nos.)	25.00	25.53	27.50	23.94	27	25.46
Awareness Programmes/ Exhibition/ Fairs/ Workshop/ Road shows	410	622	450	553	480	463

### (i) Silk Mark Expos

In order to ensure that Silk Mark gains further credibility & popularity, Silk Mark Expos are being organized exclusively for Silk Mark Authorized Users from across the country. The Expo is an ideal platform not only to popularize Silk Mark but also in bringing the manufacturers and the consumers under one platform for selling and buying of pure silk products. Substantial business for the participants is generated during this event. During the event massive awareness and publicity campaigns are carried out by the SMOI.

During the year 2018-19, in spite of the sluggish market for silk products, SMOI has organised 9 Silk Mark Expos viz. 2 at Guwahati, 1 each at Dibrugarh, Vishakapatnam, Hyderabad, Kochi, Bangalore, Mysore and Pune. Some of the promotional activities undertaken during the period are:

1. SMOI Palakkad chapter arranged a theme pavilion, in 100 sq.ft., stall space displaying all the activities from Soil to finished products in the “NAVKERALAM 2018” event organised by the Kerala state government at Palakkad from 21.05.2018 to 27.05.2018.
2. The SMOI, Hyderabad chapter has conducted grand sixth version of Srimathi Silk Mark -2018 on 21<sup>st</sup> April 2018 at Kalinga hall, Banjara Hills, Hyderabad, attended by more than 400 peoples from all walks of life like General public, students & faculty from NIFT, ATDC, CSB officers & Staff, eminent Public and Private personalities. A cultural programme and a ramp walk by models depicted the recent developed silk products by P3D & VSMPC.
3. India Trade Promotion Organisation, a GoI enterprise has organised “India Silk Fair” for the first time, along with India Garment Fair & India Home Furnishing Fair at Osaka, Japan from 18-20 July 2018. SMOI has provided stall space to four participants M/s Nilima Silks, M/s Cocoon Kapas, DOS Bodoland and Meghalaya Sericulture department under the banner of SMOI to popularize the Indian silks and thus capture the overseas market.
4. SMOI has conceptualised a platform for promoting Indian Silks through Resham Ghar, a store-in-store concept in collaboration with various state and central apex bodies, selling only 100% pure silk products with authenticity of Silk Mark label to the consumers. Based on the tremendous response to the Resham Ghar – A home of pure Indian Silks, started on an experimental basis in New Delhi, in collaboration with Lepakshi, a similar

venture has been started in the premises of Central Cottage Industries Corporation (CCIC) M.G.Road, Bengaluru from August 2018.

5. SMOI, Bangalore chapter has organized Flower Show from 4<sup>th</sup> to 15<sup>th</sup> August for 12 days in the Glass House, Lalbagh, Bangalore. A theme pavilion depicting 3 Silk Mark logos & Silk Mark India have been decorated with flowers and silk moth emerging from cocoon was displayed for the promotion of Silk Mark.
6. Central Silk Board/SMOI participated in the 6<sup>th</sup> India International Silk Fair organised by The Indian Silk Export Promotion Council, at Pragati Maidan, New Delhi from 16<sup>th</sup> to 18<sup>th</sup> October 2018. SMOI has set up a customised Theme Pavilion under the banner of “SILKS OF INDIA” depicting an array of activities from pre cocoon to post cocoon technologies. Smt. Smriti Zubin Irani, Hon’ble Union Textile Minister has inaugurated the pavilion and released a Look-Book on NE silk products on this occasion. More than 168 buyers from 20 countries visited the stalls and the participants have received excellent enquires and substantial business orders from the overseas buyers.
7. “Silk Composite Workshop at Lucknow”: SMOI, Varanasi chapter has participated in "Silk Composite Workshop and P. Dinadayal Upadhyaya Silk Productivity Award Program" held on 22.12.2018 at Lucknow. The event was organised jointly by Central Silk Board and Directorate of Sericulture, Govt. of Uttar Pradesh. Hon’ble Minister of State for Textile-Government of India, Shri Ajay Tamta inaugurated the workshop.
8. 13<sup>th</sup> Toshali Mela at Bhubaneshwar: SMOI in collaboration with National Institute of Fashion Technology (NIFT) has participated in 13<sup>th</sup>Toshali National Crafts Mela organised by Handloom, Textiles and Handicrafts Department, Govt. of Odisha at Janata Maidan, Bhubaneshwar, Odisha from 28.12.2018 to 13.01.2019. SMOI put up a theme pavilion on silk products like Eri Silk knits, Tasar silk peduncle fabrics, sarees, made ups etc., Silk Mark labeled products & activities of Silk Mark, CSB were highlighted.
9. TRADE CONCLAVE ON KHADI – BATIK WEAVE GOING GLOBAL: SMOI, New Delhi Chapter has participated in Trade Enclave/Workshop on “Khadi-Batik Weave Going Global” organized by IAMKHADI Foundation on 18<sup>th</sup> December 2018 in the Indonesian Embassy, New Delhi, to explore the possibilities of design collaboration between India and Indonesia and to develop innovative new design and structures to meet the demand of dynamic global markets. The function was promoted by KVIC, IIFT & FICCI in association with the Indonesia Embassy, New Delhi.
10. SURGING SILKS: Central Silk board in coordination with the Ministry of Textiles, New Delhi has organised “Surging Silk” a mega silk event at Vigyan Bhavan, New Delhi on 09.02.2019 to commemorate the contributions of stakeholders of silk industry. Smt. Sushma Swaraj Hon’ble Minister for External Affairs has presented awards to different achievers in silk industry including the Silk weaver-cum-trader. Smt. Smriti Zubin Irani, Hon’ble Union Textile Minister presided over the function. M/s.POTHYS, Chennai member of Silk Mark has been chosen for being the largest consumer of Silk Mark labels for the year 2017-18.
11. “Silk Testing Centres”(STC): SMOI has taken an initiative of fulfilling the long standing demand of the consumers to get testing facility at silk retail hubs by establishing (9) Nine Silk testing Centres Viz: at the premises of

Priyadarshini showrooms, CCIC show room, Karnataka Silk cloth Retail Merchants Association & CSTRI at Bangalore and one at TANTUJA, Kolkata. STC established to provide silk testing facility to the silk consumers at very reasonable testing charge. It is proposed to set up such centres at show room in CO-OPTEX premises, Chennai and CCIC show room in New Delhi shortly.

## 5. FINANCIAL PROGRESS

The table below indicates year-wise financial performance of the Central Silk Board during the years 2016-17, 2017-18 and 2018-19:

(Cr. Rs.)

BUDGET HEADS	2016-17		2017-18		2018-19	
	Allocation (RE)	Expnd.	Allocation (RE)	Expnd.	Allocation (Approved RE)	Expnd. (Provisional)
Administrative Expenditure	342.50	342.50	381.00	381.00	481.29	481.29
Scheme Outlay- for Silk Samagra	154.01	154.01	161.50	161.50	120.00	117.41
<b>Total</b>	<b>496.51</b>	<b>496.51</b>	<b>542.50</b>	<b>542.50</b>	<b>601.29</b>	<b>598.70</b>

## 6. OTHER SCHEMES

### A. CONVERGENCE EFFORTS:

The Ministry of Textiles is extending support to the sericulture sector in the form of CSS & NERTPS. Efforts are also being taken for mobilizing additional funds through convergence, by availing the schemes being implemented by various other Ministries of Govt of India. As per the latest reports received from States, during the year 2017-18, against the proposals for Rs. 935.86 crores for, the States have received sanction for Rs. 797.12 crores, of which Rs. 600.59 crores has been released for various sericulture activities under RKVY, MGNREGA and other convergence programmes. For the year 2018-19, States have submitted proposals for Rs. 687.65 crores, of which proposals worth Rs. 600.89 crores have been sanctioned and released Rs. 411.06 crores to the States.

### B. MAHILA KISAN SASHAKTIKARAN PARIYOJANA (MKSP):

Multi-state tasar projects under Mahila Kisan Sashktikaran Pariyojana (MKSP) in six states are being coordinated by CSB, with an outlay of Rs.7160.90 lakhs, shared by MoRD (Rs.5366.15 lakhs) and CSB (Rs.1794.75 lakhs) since October 2013. The project envisages creating over 36,000 sustainable livelihoods for the marginalized households, especially women in 23 districts, which are mostly Left-Wing Extremism (LWE) affected in the States of Jharkhand, Odisha, West Bengal, Chhasttisgarh, Maharashtra, Andhra Pradesh & Bihar.

A total of 33093 farmers have been mobilized into 687 informal producer groups. Under the project 1521 ha of tasar host plants have been raised by 2738 farmers. 1.782 lakh dfls of nucleus seed and 10.86 lakh dfls of basic seed have been reared to produce 94.33 lakh nucleus seed cocoons and 320.81 lakh basic seed cocoons. 360 private graineurs processed 222.587 lakh seed cocoons and produced 50.95 lakh commercial dfls. 13933 commercial rearers



brushed 53.52 lakh dfls and produced 1806.72 lakh reeling cocoons besides various capacity and institution building activities across tasar value chain.

### **Scaling up projects under MKSP with CSB as NRLM support organization (NSO)**

CSB being the National Rural Livelihood Mission (NRLM) support Organization (NSO) of MoRD is supporting State Rural Livelihood Missions (SRLMs) in up-scaling initiatives under tasar sector. MoRD has already approved three MKSP Tasar projects formulated with support of CSB, for the states of Jharkhand (25000), Odisha (5220), and West Bengal (5000) covering 35,220 Mahila Kisans funded by MoRD(60%) and SRLMs (40%) with an outlay of Rs.63.34 crores, which are under implementation during the year. Besides, project proposals from the states of Chhattisgarh and Bihar are under consideration and proposal for Maharashtra is due for formulation.

### **C. SCHEDULED CASTE SUB-PLAN (SCSP)**

The Ministry of Textiles, Govt. of India has sanctioned an amount of Rs.25.00 crores towards implementation of Scheduled Caste Sub-Plan (SCSP) under sericulture during the year 2018-19. The entire sanctioned amount of Rs.25.00 crores has been fully released to Andhra Pradesh, Telangana, Tamil Nadu, Uttar Pradesh, Uttarakhand & Himachal Pradesh. A total number of 3018 beneficiaries have been covered.

### **D. TRIBAL SUB-PLAN (TSP)**

The Ministry of Textiles, Govt. of India has sanctioned an amount of Rs.15.00 crores towards implementation of Tribal Sub Plan (TSP) under sericulture during the year 2018-19. The entire sanctioned amount of Rs.15.00 crores has been fully released to Andhra Pradesh, Telangana, Maharashtra, Madhya Pradesh, Tamil Nadu, Jharkhand, Himachal Pradesh, West Bengal, Chhattisgarh & Odisha. A total number of 2801 beneficiaries have been covered.

### **E. SERICULTURE DEVELOPMENT IN NORTH-EASTERN STATES**

North East being a non-traditional area for Sericulture, Govt. of India has given special emphasis for consolidation and expansion of Sericulture in all the North Eastern States with critical interventions from host plantation development to finished products with value addition at every stage of production chain. As a part of this, under NERTPS - an Umbrella scheme of Ministry of Textiles, the Govt. of India have approved 38 Sericulture projects in all North Eastern States in the identified potential districts under three broad categories viz., Integrated Sericulture Development Project (ISDP), Intensive Bivoltine Sericulture Development Project (IBSDP) and Aspirational Districts.

A total of 38 projects covering Mulberry, Eri and Muga silk are implemented in all NE States. Total cost of these projects is Rs.1,106.97 crore, of which GoI share is Rs.955.07 crore. Objective of these projects is 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 the value chain. The projects are proposed to bring around 38,170 acres of plantation under mulberry, Eri and Muga sectors and expected to contribute

additional production of 2,650 MT raw silk during the project period and generate employment for 3,16,000 persons.

**a. Integrated Sericulture Development Project (ISDP):** Sixteen projects have been approved with a total cost of Rs.586.17 crore (GoI share of Rs.483.35 crores) for implementation in Assam including BTC, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. The projects will support 27,010 acres plantation of Mulberry, Eri & Muga. This includes setting up of Silk Printing & Processing unit for Tripura, Soil to Silk for BTC (Assam) and Post Cocoon Technology for Nagaland. While 15 projects are meant for implementation by the State Sericulture Departments, one project - Creation of Seed Infrastructure is implemented by CSB to produce and ensure uninterrupted supply of quality seed to NE States. Till March-2019, Ministry has released Rs.418.54 crore for the above projects, against which the expenditure reported is Rs.359.73 crore (86%).

**Silk Printing Unit at Tripura:** To modernize the Silk printing facilities for value addition to the silk and fabric produced in Tripura, a project for establishment of Silk Processing and Printing Unit under NERTPS was approved at a total cost of Rs.3.71 crore (100% Central assistance). This unit targets to print and process 1.50 lakh metre silk per annum. So far, the Ministry has released Rs.3.52 crore for the purpose, against which expenditure has been reported for Rs.3.14 crore (89%).

**Seed Infrastructure Units in CSB:** To create infrastructure for production of the quality seed in Mulberry, Eri and Muga Sectors in NE, a project was approved at total cost of Rs 37.71 crore (100% Central assistance). This scheme envisages construction of 6 seed infrastructure units [(1 mulberry seed unit at Jorhat (Assam), 4 muga seed units at Silchar (Assam), Mokukchung (Nagaland), Kokrajhar (BTC-Assam), Tura (Meghalaya) and 1 Eri seed unit at Topatoli (Assam)] with a production capacity of 30 lakh mulberry Dfls and 21.51 lakh Muga & Eri Dfls]. Ministry has so far released Rs.35.82 crore for this project, against which the expenditure reported is Rs.32.54 crore (91%).

**b. Intensive Bivoltine Sericulture Development Project (IBSDP):** Eight projects for import substitute bivoltine silk with a total cost of Rs.236.78 crores with GoI share of Rs.210.41 crores have been sanctioned under NERTPS. The project envisages covering 500 acres in 2 blocks of each district involving approx 1,100 women sericulturists /State. Overall, it aims to cover 4,000 acres of mulberry plantation benefitting around 9,071 women stakeholders covering in all NE States (except Manipur). Upto March, 2019, Ministry has released Rs.199.88 crore for the above project, against which the expenditure reported is Rs.167.46 crore (84%).

**Progress of ISDP & IBSDP:** Upto March, 2019, about 30,652 acres have been brought under host plantation of Mulberry, Eri and Muga covering 41,026 beneficiaries and produced 2,614 MT of raw silk. As against Rs.643.26 crore released by Ministry under the above projects, an expenditure of Rs.527.63 crore (85%) has been incurred.

**c. Newly approved projects:** Considering the potentialities for sericulture development in NE, Ministry of Textiles has approved 14 new projects for

implementation from 2018-19 onwards with a total cost of Rs. 284.02 cr, of which GoI share is Rs. 261.30 cr to cover 17,141 beneficiaries resulting in production of 366 MT of silk during the project period covering 7,160 acres of plantation from Mulberry, Eri, Muga and Oak Tasar sectors. Besides, 3 new Eri spun silk mills will produce 165 MT of Eri spun silk yarn per annum. Further, Govt. of India initiated development of silk industry in the Aspirational Districts in one/two blocks per district covering either Mulberry, Eri, Muga or Oak Tasar as per the potential of the district with the involvement of State Governments. The projects are as follow:

- (1) Establishment of Eri Spun Silk Mill in Assam,
- (2) Establishment of Eri Spun Silk Mill in BTC,
- (3) Establishment of Eri Spun Silk Mill in Manipur,
- (4) Large Scale Eri Farming in Arunachal Pradesh,
- (5) Integrated Eri Silk Development Project for Sustainable Livelihood to Women folk of BTC through Tapioca plantation,
- (6) Bivoltine Sericulture Development project through Women Empowerment in Wokha district of Nagaland
- (7) Sericulture Development in Aspirational District of Mizoram
- (8) Sericulture Development in Aspirational District of Nagaland
- (9) Sericulture Development in Aspirational Districts of Assam
- (10) Sericulture Development in Aspirational Districts of BTC
- (11) Sericulture Development in Aspirational District of Meghalaya
- (12) Integrated Muga Silk Development for Sustainable Livelihood in Arunachal Pradesh.
- (13) Eri Silk Development Project through Women Empowerment in Chungtia of Mokokchung, district, Nagaland.
- (14) Intensive Bivoltine Sericulture Development Project in Sapahijala in Tripura.

The summary of overall Sericulture projects being implemented under NERTPS is given in the Table below:

#	State	Total Project cost (Rs. Cr.)	GoI Share (Rs.Cr.)	GoI Release (Till March 2019)	Beneficiaries (Nos)		Output during project (MT)	
				(Rs. Cr.)	Target	Achmt	Target	Achmt(P) (upto March 2019)
<b>I</b>	<b>Integrated Sericulture Development Project</b>							
1	Assam	66.67	47.42	37.48	5,965	5,965	196	343.25
2	BTC	34.92	24.68	22.62	3,356	3,356	171	259.00
3	BTC(IEDPB)	11.41	10.61	10.08	654	654	60	86.65
4	BTC(Soil to Silk)	55.36	53.12	37.09	3,526	2,345	245	136.00
5	Arunachal Pradesh	18.42	18.42	17.50	1,805	1,672	79	17.50
6	Manipur (Valley)	149.76	126.60	107.55	6,613	5,555	450	575.00
7	Manipur (Hill)	30.39	24.67	20.50	2,169	1,201	68	60.53
8	Meghalaya	30.16	21.91	19.57	2,856	2,856	162	219.39
9	Mizoram	32.49	24.49	23.26	1,683	1,683	117	134.56
10	Mizoram(IMS DP)	13.52	12.83	12.19	833	800	16	1.75
11	Nagaland	31.47	22.66	21.52	2,678	2,678	166	268.36
12	Nagaland (IESDP)	13.66	12.83	12.19	1,053	1,053	72	34.37
13	Nagaland (PCT)	8.57	8.48	8.06	400	406	Post cocoon & post yarn activities.	

14	Tripura	47.95	33.20	29.58	3,432	3,432	275	289.90
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	35.82	-	-	30 lakh Mulberry & 3.70 lakhs Muga / Eri dfis / yr	
	<b>Total (I)</b>	<b>586.17</b>	<b>483.35</b>	<b>418.54</b>	<b>37,023</b>	<b>33,656</b>	<b>2,076</b>	<b>2,426.27</b>
<b>II</b>	<b>Intensive Bivoltine Sericulture Development Project</b>							
17	Assam	29.55	26.28	24.96	1,144	1,144	29	36.01
18	BTC	30.06	26.75	25.41	1,188	1,188	26	28.80
19	Arunachal Pradesh	29.47	26.20	24.89	1,144	663	20	5.00
20	Meghalaya	29.01	25.77	24.47	1,044	1,033	27	26.10
21	Mizoram	30.15	26.88	25.54	1,169	1,169	26	23.10
22	Nagaland	29.43	26.16	24.85	1,144	1,144	27	13.38
23	Sikkim	29.68	26.43	25.11	1,094	885	27	8.50
24	Tripura	29.43	25.95	24.65	1,144	1,144	27	47.05
	<b>Total (II)</b>	<b>236.78</b>	<b>210.41</b>	<b>199.88</b>	<b>9071</b>	<b>8,370</b>	<b>209.00</b>	<b>187.94</b>
	<b>IEC</b>			<b>2.00</b>				
<b>III</b>	<b>New Projects</b>							
25	Ar. Pradesh (ILSEF)	37.25	35.65	9.12	1,270	-	86	
26	Assam(ESSM)	21.53	19.09	-	2,500	-	-	-
27	BTC(ESSM)	21.53	19.09	-	2,500	-	-	-
28	Manipur(ESSM)	21.53	19.09	-	2,500	-	-	-
29	Mizoram (AD)	11.56	10.82	3.45	650	-	20	-
30	Nagaland (AD)	14.65	13.49	4.50	965	-	18	-
31	BTC -IESDP(Tap)	18.63	17.35	5.78	1,400	-	45	-
32	Nagaland -Biv	22.43	20.68	-	436	-	18	-
	<b>Total(III)</b>	<b>169.11</b>	<b>155.27</b>	<b>22.85</b>	<b>12,221</b>	<b>-</b>	<b>202</b>	<b>-</b>
<b>IV</b>	<b>New Projects</b>							
33	Assam-AD	21.03	19.55	-	1,200	-	55	-
34	BTC-AD-	20.28	18.64	-	960	-	22	-
35	Ar, Pradesh IMSDP	12.69	12.15	-	750	-	12	-
36	Meghalaya-AD	12.08	10.97	-	410	-	14	-
37	Nagaland-Chungtia	17.74	17.11	-	500	-	26	-
38	Tripura-Sepahijala	31.11	27.64	-	1,100	-	35	-
	<b>Total(IV)</b>	<b>114.92</b>	<b>106.05</b>	<b>-</b>	<b>4,920</b>	<b>-</b>	<b>164</b>	<b>-</b>
	<b>Grand Total (I+II+III+IV)</b>	<b>1,106.97</b>	<b>955.08</b>	<b>643.26</b>	<b>63,235</b>	<b>42,026</b>	<b>2,651</b>	<b>2,614.21</b>

P: Provisional

## **MAJOR EVENTS/ WORKSHOP**

- Two National level workshops on “Silk Samagra” was organised at New Delhi on 17.05.2018 and Impal, Manipur on 10.10.2018 to sensitise the DoS personals and other stakeholders/agencies of silk sector about the Scheme components, interventions, operational modalities and implementation etc.
- **SURGING SILKS:** Central Silk board in coordination with the Ministry of Textiles, New Delhi has organised an event “Surging Silk” at Vigyan Bhavan, New Delhi on 09.02.2019 to commemorate the contributions of stakeholders of silk industry. Smt. SushmaSwaraj Hon’ble Minister for

External Affairs has presented awards to different achievers in silk industry including the Silk weaver-cum-trader. Smt. Smriti Zubin Irani, Hon'ble Union Textile Minister presided over the function.

## **SUCCESS STORIES IN SERICULTURE:**

1. Shri.T.Krishna, Chittoor, Andhra Pradesh, a Post Graduate in Political Science turned Sericulturist with a humble beginning as silkworm seed rearer with 1 Rearing Shed and 4 acres of Mulberry garden and now transformed into a successful owner of a Macro Chawki Rearing Centre He started his venture by establishing a CRC unit in 2007. The unit has a brushing capacity of 1,50,000 dfls per month. He has 20 acres of Chawki Mulberry Garden and distribute Chawki Worms to about 60% of the sericulture farmers in Palamner Division of AP, with high successful rate of silkworm rearing and getting an annual return of Rs.40 lakh, which is remarkable.
2. Smt. Arti Mahato, Kharswan, Jharkhand, involved in tasar reeling in Samridhi Reeling Machine of 4 ends (2+2), with GoI support since 2015. She produces about 270 gm of "A" grade superior quality of Raw silk every day and her annual rawsilk production is about 75 kg. She could earn an average income of Rs.75000/ annum.
3. Shri. Syed Azam, Chikkaballapur, Karnataka, with 8th Standard pass, engaged in mulberry silk Reeling since last 30 Years. During 2016-17, he installed a 400 ends Automatic Reeling Machine with GOI support (50%), State Govt support (25%) and remaining as his contribution. Required technology support was extended from CSB. He is able to reel 700 kg of cocoons per day, producing an average of 112 kg of raw silk and getting an average annual income of Rs.10 lakh. He has cleared his loan of Rs.75Lakh, and purchased a Four Wheeler.
4. Shri Amelson Sangma, East Garo Hills, Meghalaya, practising raising of Kissan Nurseries of Eri Host plant, Kesseru, since 2014-15, with financial support under NERTPS for his self-employment venture. He is supplying about 20,000 saplings of Kesseru varieties and getting an average income of Rs.1,60,000/Year. He has supported farmers in hilly terrain areas of Tura in East Garo Hills by supply of healthy saplings to raise plantations under the project.

## **POLICY INITIATIVES**

### **1. Customs Duty on imports:**

At present a basic customs duty of 10% is levied on raw silk and 20% on silk fabric.

**2. Anti Dumping Duty on Raw silk:** In order to safeguard the interest of the domestic silk industry against the cheap imports, an antidumping duty of US\$

1.85 per kg of the landed cost of imported raw silk of 3A grade & Below in the form of fixed duty has been imposed during December-2015 by Director General of Antidumping & Allied Duties (DGAD), which will be in force till Dec 2020.

## B. STATUS OF SILK INDUSTRY

Silk is the most elegant textile in the world with unparalleled grandeur, natural sheen, and inherent affinity for dyes, high absorbance, light weight, soft touch and high in durability. Because of these unique features silk is known as the “**Queen of Textiles**” the world over. On the other hand, it stands for livelihood opportunity for millions, owing to its high employment potential, low capital requirement and remunerative nature of its production. The very nature of this industry with its rural based on-farm and off-farm activities and enormous employment generation potential has attracted the attention of the planners and policy makers to recognize the industry among one of the most appropriate avenues for socio-economic development of a largely agrarian economy of India. Silk has been intermingled with the life and culture of the Indians. India has a rich and complex history in silk production and its silk trade which dates back to 15<sup>th</sup> century. Sericulture industry provides employment to approximately 8.60 million persons in rural and semi-urban areas in India. Of these, a sizeable number of workers belong to the economically weaker sections of society, including women. India’s traditional and culture bound domestic market and an amazing diversity of silk garments that reflect geographic specificity have helped the country to achieve a leading position in silk industry. 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 which is produced only in India with its golden yellow glitter is a prerogative of India.

India is the second largest producer of silk in the world. Among the four varieties of silk produced in 2018-19, Mulberry accounts for 71.50% (25,213 MT), Tasar 8.44% (2,977 MT), Eri 19.40% (6,839 MT) and Muga 0.66% (232 MT) of the provisional total raw silk production of 35,261 MT.

### Performance of Sericulture Sector

Particulars	2015-16 Achmnt.	2016-17 Achmnt.	2017-18		2018-19	
			Target	Achmnt.	Target	Achmnt. (P)
<b>Mulberry Plantation (Lakh ha.)</b>	2.09	2.17	2.42	2.24	2.46	2.45
<b>RAW SILK PRODUCTION:</b>						
Mulberry (Bivoltine)	4,613	5,266	6200	5874	7200	6911
Mulberry (Cross breed)	15,865	16,007	17275	16192	18100	18302
<b>Sub Total (Mulberry)</b>	<b>20,478</b>	<b>21,273</b>	<b>23475</b>	<b>22066</b>	<b>25300</b>	<b>25213</b>
<b>V A N Y A</b>						
<b>Tasar</b>	2,819	3,268	3450	2988	3650	2977
<b>Eri</b>	5,060	5,637	6675	6661	6750	6839
<b>Muga</b>	166	170	240	192	260	232
<b>Sub Total (Vanya)</b>	<b>8,045</b>	<b>9,075</b>	<b>10365</b>	<b>9840</b>	<b>10660</b>	<b>10048</b>
<b>GRAND TOTAL</b>	<b>28,523</b>	<b>30,348</b>	<b>33840</b>	<b>31906</b>	<b>35960</b>	<b>35261</b>

Source: The data received from DOSs & compiled at CSB (Central office); P: provisional

The total raw silk production in the country increased by 10.52% (35261 MT) during 2018-19 over the previous year 2017-18 (31,906 MT). The bivoltine raw silk production achieved a record production of 6,911 MT during 2018-19 by registering 17.6% growth over previous year.

The area under mulberry during 2018-19 increased by 9.3%

The State-wise production of raw silk during 2015-16 to 2018-19 is given in **Annexure- I**.

### Raw Silk Imports:

The quantity and value of raw silk imported during 2015-16 to 2018-19 are given below:

Year	Quantity (MT)	Value (Rs. in Crores)
2015-16	3529	1006.16
2016-17	3795	1092.26
2017-18	3712	1218.14
2018-19 (P)	2785	1041.40

Source: DGCIS, Kolkata ; P : Provisional.

### Exports:

The silk goods export earnings have decreased over the years due to global recession and reduction in demand for silk goods in western countries (Western Europe and the USA, which are the major consumers of silk goods). However, the silk exports are picking up to the non-traditional/new markets such as the UAE, Nigeria, Sudan, Thailand etc., which is an encouraging sign. The export earnings during 2017-18 were Rs. 1,649.48 crores. Export values of silk goods during 2015-16 to 2018-19 are given below:

Items	(Rs. in Crores)			
	2015-16	2016-17	2017-18	2018-19 (P)
Natural Silk Yarn	30.31	15.33	15.67	9.04
Silk Fabrics	1280.60	1051.65	864.81	396.39
Readymade Garments	1078.39	864.33	650.48	1184.54
Silk Carpet	16.88	63.78	17.34	113.09
Silk Waste	89.80	98.33	101.19	129.39
<b>Total</b>	<b>2495.98</b>	<b>2093.42</b>	<b>1649.48</b>	<b>1832.45</b>

Source: Compiled from the Statistics of DGCIS, Kolkata; P: Provisional

### Employment Generation:

The employment generation in the country is raised to 9.12 million persons in 2018-19 (Provisional) compared to 8.60 million persons in 2017-18, indicating a growth of 6%.

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**State wise Raw Silk production during the Years 2015-16 to 2018-19**

(in MT)

#	State	2015-16		2016-17		2017-18		2018-19	
		Target	Achmnt.	Target	Achmnt.	Target	Achmnt.	Target	Achmnt. (P)
1	Karnataka	10000	9823	11000	9571	11120	9322	10750	11592
2	Andhra Pradesh	6700	5086	5505	5970	6090	6778	7805	7481
3	Telangana	135	116	150	119	160	163	200	224
4	Tamil Nadu	1700	1898	2000	1914	2000	1984	2190	2072
5	Kerala	8	11	10	11	12	15	14	19
6	Maharashtra	248	274	285	259	328	373	415	519
7	Uttar Pradesh	265	256	280	269	300	292	340	289
8	Madhya Pradesh	207	257	275	111	230	103	160	83
9	Chhattisgarh	236	263	290	361	405	532	670	358
10	West Bengal	2601	2391	2706	2565	2590	2577	2775	2394
11	Bihar	61	67	84	77	85	63	95	53
12	Jharkhand	2207	2284	2622	2631	2744	2220	2658	2375
13	Odisha	118	117	130	125	140	116	148	129
14	Jammu & Kashmir	170	127	170	145	180	132	190	118
15	Himachal Pradesh	36	32	40	32	40	32	43	34
16	Uttarakhand	37	30	35	34	44	35	45	36
17	Haryana	1	0.6	1	1	2	0.7	2	0.7
18	Punjab	6	0.8	1	3	6	3	5	3
19	Assam & Bodoland	3330	3325	4103	3811	4705	4861	4980	5029
20	Ar.Pradesh	37	37	48	45	58	54	65	59
21	Manipur	428	519	530	529	560	388	435	464
22	Meghalaya	690	857	900	927	1070	1076	1110	1115
23	Mizoram	65	64	70	76	100	83.6	105	92
24	Nagaland	652	631	690	678	770	615	633	620
25	Sikkim	13	6	10	9	17	0.001	3	0.4
26	Tripura	51	52	65	75	85	87	125	102
<b>Total</b>		<b>30,000</b>	<b>28,523</b>	<b>32,000</b>	<b>30,348</b>	<b>33,840</b>	<b>31,906</b>	<b>35960</b>	<b>35,261</b>

(p): Provisional