FUNCTIONING OF CENTRAL SILK BOARD

&

PERFORMANCE OF INDIAN SILK INDUSTRY

(As on 1st January, 2023)

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 Bengaluru. The Board comprises 39 members, appointed as per the powers and provisions under Sub-Section 3 of Section 4 of the CSB Act 1948, for a period not exceeding 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 another 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 and for undertaking pre-shipment inspection of silk goods meant for exports, the Central Silk Board has established 4 Regional Offices at New Delhi, Kolkata, Hyderabad and Guwahati. 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 **1672** as on **01.01.2023**.

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 159 units of CSB located in different States through an integrated Central Sector Scheme viz., “Silk Samagra-2” for the development of silk industry. The Union Cabinet has approved the “Silk Samagra-2” which is the improved version of earlier Silk Samagra Scheme at a total outlay of Rs.4679.86 crore for implementation during 2021-22 to 2025-26. The Silk Samagra-2 scheme comprises of two major activities as under:

i. Core activities of Central Silk Board.

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.

In addition to the core activities directly implemented by CSB, certain beneficiary oriented critical interventions required in the field for the promotion of sericulture are also implemented for transfer and adoption of improved technology packages developed by the Research Institutes of CSB.

ii. Beneficiary oriented Critical Field level interventions.

1. Critical Field Level Interventions other than North Eastern Region.
2. Implementation of Sericulture Projects in North Eastern Region.
3. Provisions to meet expenditure of ongoing Sericulture Projects of NERTPS.

While the core activities of Central Silk Board with four sub-components are implemented through a network of CSB units in the areas of R&D, seed production, project implementation & monitoring and brand promotion of silk in Indian and outside markets, the beneficiary-oriented components are implemented through State Sericulture Departments/other Line Departments with the fund support from Central Silk Board.

The beneficiary-oriented interventions cover the major areas in pre and post-cocoon sector viz., development and expansion of host plantation, support for silkworm rearing, strengthening and creation of silkworm seed production infrastructure, development of farm and post-cocoon capacities, up-gradation of reeling and processing technologies in silk, and capacity building through skill development and skill upgradation. These components shall be provided to the beneficiaries either in package mode to individual beneficiary or in a project mode. There are nine bundles of packages available for sericulture stakeholders to cater to the need of individual beneficiaries as well as Seri-Business Entrepreneurs/corporate sericulture (farm to fabric-large scale farming).

In order to establish synergy between State and Central Sector programmes for sericulture development so as to maximize the efforts for growth and employment through sericulture and also for improving income & livelihood creation for small and marginal farmers, a National Level Workshop on Silk Samagara-2 scheme was organized at Bengaluru involving Directors of State Sericulture Departments, sericulture stakeholders in pre & post cocoon sectors, sericulture industry partners' / Seri Federation / Silk exporters / Authorized users of SILK MARK etc. Besides, the respective State Sericulture Departments have also organised the workshops at state level involving various sericulture stake holders, CSB/State Officers to elucidate the details of the scheme.

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

Research & Development

The Research and Training Institutes of CSB provide scientific and technological support for enhancing the production and productivity for sustainable sericulture through innovative approaches. The main institutes at Mysuru (Karnataka), Berhampore (West Bengal) and Pampore (Jammu and Kashmir) deal with Mulberry sericulture, whereas Ranchi (Jharkhand) deals with Tasar culture and Lahdoigarh, Jorhat (Assam) deals with Muga, Eri and Oak Tasar 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 Centres (RECs) and their sub units are also functioning to provide extension support to sericulturists. In order to provide Research and Development support in post cocoon sector, the Board has established Central

Silk Technological Research Institute at Bengaluru. In addition, the CSB has also set up Silkworm Seed Technology Laboratory and Seri Biotech Research Laboratory at Bengaluru (Karnataka) and Central Sericultural Germplasm Resource Centre at Hosur (Tamil Nadu).

Progress of various Research & Development Projects of CSB R&D institutes during the year 2022-23, up to the end of 3rd quarter is summarised as follows:

- Concluded 14 research projects and implemented/initiated 21 new projects.
- A total of 110 research projects, viz., 51 (Mulberry sector), 28 (Vanya sector), 14 (Post Cocoon sector), and 17 specialized sectors (Seed, Germplasm & Biotechnology) are under progress. These projects emphasize the research in silkworm quality improvement, rearing management & protection, seed technology, host plant improvement, management & protection, biotechnology, post cocoon technologies, socio-economic & impact studies and sericulture by-product utilization.

Highlights of Research Programmes

(i) R&D on Mulberry Host Plant:

- Developed three each of transgenic mulberry lines for FtPEPC (Phospho Enol Pyruvate Carboxylase), AtDREB2A (Dehydration Responsive Element Binding protein) + ATSHN1 (Shine 1/wax inducer 1) expressing better leaf nutritional status, gas exchange parameters, slower chlorophyll leaching and tolerance to drought, salinity & oxidative stress.
- Observed better performance of triploid genotypes Tri-10, Tri-01 and Tri-08 over check varieties in optimal and sub optimal conditions.
- High levels of primary metabolites were recorded in V1, G4 and *Morus multicaulis* and they were found low in Mysore Local variety.
- Identified one antagonistic fungus, two antagonistic bacteria and some potential fungicides of thiazole group against root rot pathogens.
- Observed better ingesta, efficient conversion of ingesta to shell and production efficiency of cocoon shell parameters in G4 and V1 varieties.
- Identified ten polymorphic SSRs between MR2 and V-1 and 13 polymorphic markers between Sahana and V-1.
- Completed DUS (Distinctness, Uniformity and Stability) Characterization of 34 example genotypes, 12 reference varieties and 6 candidate varieties and found that all the candidate varieties are distinct from each other and also distinct from the reference varieties.
- Identified sixteen contrasting genotypes for the higher leaf yield.
- Identified 12 parental polymorphic SSRs against *Lasiodiploidia theobromae*.
- Completed the phenotypic evaluation of 250 diverse Germplasm accessions for Nitrogen, phosphorus, Sulphur and Zinc utilisation efficiency.
- 35 disinfectant /seri-products viz., Vijetha, Vijetha Supplement, Chlorine Dioxide, Serifit, Asthra, Amruth, Poshan, Dr. Soil etc. were analysed for their quality parameters.
- Inducted 27 new mulberry accessions to the mulberry Germplasm.

- ❖ Identified two top performing mulberry accessions(MI-1000, ME-0285) in terms of propagation, growth yield and biochemical traits.
- ❖ Completed mitotic plate preparation for 136 coreset mulberry accession of which 96% accessions are diploid in nature. Karyotype analysis of 40 coreset accessions were completed and found to be metacentric.
- ❖ Identified two formulations viz., BAP+ AA and SNP to reduce the senescence, improve the leaf yield and quality.
- ❖ Identified seven powdery mildew resistant progenies from S-1 x Vietnam-2 populations.
- ❖ Recorded higher leaf yield (10-25%) and cocoon yield (12-14%) in new mulberry crop schedule over the existing schedule in southern region of West Bengal.
- ❖ High Phenotypic Coefficient of Variation (PCV) and genotypic Coefficient of Variation (GCV), high heritability and high genetic advance over the mean value were observed traits viz., hundred leaf weight and number of leaves in longest shoot which can be relied upon for further improvement.

R&D efforts have helped in improving the mulberry productivity from 50 MT/Ha/yr during 2005-06 to 65-67 MT/Ha/yr during 2022-23.

(ii) R&D on Mulberry Silkworm:

- ❖ The Hybrid Authorisation Committee has recommended the authorisation and commercial exploitation of newly developed improved cross breed 12Y x BFC 1 in Eastern & North Eastern India.
- ❖ Developed the equipment for gender classification and sex separation of mulberry silkworms at pupae stage.
- ❖ Standardised the protocol for chemical and microbial extraction of chitin from silkworm pupal exuviae, spent pupae and moth scales.
- ❖ Probiotic characteristics of bacterial isolates from silkworm midgut were evaluated by *in-vitro* and *in-vivo* methods.
- ❖ Analysed the nutrients, bio-active compounds and microbial load in fresh and spent pupae and found out the concentration of Alpha-Linolenic Acid (ALA).
- ❖ Produced protease enzyme from silkworm pupal powder by microbial fermentation.
- ❖ Standardised the method for extraction of sericin and fibroin from cocoon.
- ❖ Comparative characterisation of chitin and chitosan of silkworm pupae and exuviate with that of shrimp was carried out using XRD and SEM.
- ❖ Evaluation of performance of bivoltine hybrid TT21 x TT56 under different agro-climatic conditions is under progress in the field and gives promising results.
- ❖ The hybrid of S8 x CSR16 is authorized as bivoltine single hybrid for commercial exploitation by Hybrid Authorization Committee meeting conducted on 01.09.2021.
- ❖ Identified SNPs and major deletions in Thioredoxin peroxidase gene region related to life-history trait, longevity associated with Paraquat stress tolerance in bivoltine silkworm races and the marker can be used as a molecular signature to identify CSR17.
- ❖ 20 genes of diapause and non-diapause were screened for their expression pattern. Based on the copy numbers for non-hibernating characters and

AEI, the lines having increased expression for non-hibernating characters MAS1 & MAS5 were selected.

- Validated M-LAMP assay with 500 Eri silk moth samples at ESSPC, Hosur and 250 Mulberry silk moth samples at P4 BSF, Hassan.
- A total of 1669 pouches of *Nesolynx thymus* were supplied covering 835 dfls for the management of Uzi fly.
- Supplied 45 units of egg parasitoid, *Trichogramma chilonis* and 39 units of larval parasitoid *Bracon brevicornis* to mulberry farmers of Karnataka, Tamil Nadu and Andhra Pradesh for the management of Leaf roller, *Diaphania pulverulentalis.*
- Introduction of *Blaptostethus pallescens* and *Chrysoperia zastrowi sillemi* as biocontrol agents against mulberry thrips *Pseudodendrothrips mori* found that thrips incidence reduced from 49 per cent to less than 10 per cent in mulberry plantations of Karnataka and Tamil Nadu.
- 24050 dfls of 12Y x BFC1 were tested in field under authorisation trial and showed an average yield of 48.16 kg with 8.64% improvement over control.
- 8,625 dfls of BHP-DH (BHP3.2 x BHP8.9) evaluated with farmers of different eastern & north eastern states of India and recorded 16.12 % (51.0 kgs) increase over control (SK6 x SK7- 43.92 Kgs) in terms of cocoon yield/100 dfls.
- Antimicrobial peptides (PR1, LTP1 & WAP18) have been designed against bacterial pathogens causing flacherie.
- Gene expression studies reveals up-regulation of pyrexia gene in larval brain occurs under high humidity simulated conditions.
- Seri-Win, an eco-friendly bed disinfectant was tested in field and found that, it is performing at par with existing bed disinfectant (Labex) at 26 tested locations.
- Initiated commercial CRCS in Murshidabad (West Bengal) for demonstration. During first chawki (Agrahayani 2021) crop, 6000 dfls of Nx(SK6 SK7) were brushed and chawki worms were sold to 65 farmers in the range of 50-200 dfls/farmer.
- Identified six foundation crosses, three each of oval (PAM114xCSR27, PAM114 x CSR50, CSR 50 x PAM 114) and constricted (PAM1 14x APS4, PAM117 x SK7, SK6 x SK7) with superiority in SR of 20-21% and cocoon yield of approx. 60 kg/100 dfls which are suitable for temperate climatic conditions.
- Under the Phase IX of conservation of silkworm genetic resources, the silkworm gene bank collection comprising 489 (83 multivoltine, 383 bivoltine and 23 mutant accessions) were reared, characterized and conserved.
- Top performing multivoltine and bivoltine accessions are identified based on multiple trait evaluation for rearing and reeling traits after every crop.
- The crop-wise database is updated in the Silkworm Germplasm Information System (SGIS).
- TaqMan assay has been developed for early detection of microsporidian pathogens in B. Mori.
- Pathogenesis and expression pattern of six ORF transcripts of Indian isolates of BmBDV were elucidated. Transferred BmBDV resistance gene to CSR2 and CSR27 and validated BmBDV resistance in SK6, SK7, CSR2 and CSR27 with artificial inoculation.

R&D efforts have helped in improving the yield from 48 Kg/100 dfls during 2005-06 to 70 Kg/100 dfls during 2022-23.

(iii) R&D on Vanya Host Plant:

- Seven superior *Terminalia* hybrids with high leaf yield were identified based on molecular Characterisation.
- Plant growth promoting bacteria were isolated from rhizospheric soils of primary tasar host plants and screened for PGPR attributes.
- Fertilisation recommendation chart has been developed for tasar food plants.
- A formulation of native rhizobacteria having antagonistic effects against *Alternaria* blight has been developed for management of castor blight disease, enhancing plant growth and productivity of the leaf biomass, which is under on station trials.
- Geographical coordinates of 08 wild / cultivated perennial castor accessions growing in North Eastern states of India were collected for their utilization in pre-breeding programme. Collection of wild perennial castor accessions from the field has brought variability to the gene pool for its further exploitation.
- Assessed the impact of petroleum crude oil activities on muga culture in Assam and observed the adverse effects of petroleum pollutants on muga culture. The findings have facilitated in devising suitable mitigation measures to revive muga culture in contaminated areas.

In the last 10 years, four Vanya host plants have been identified and recommended for commercial exploitation.

(iv) R&D on Vanya Silkworm:

- Developed SCAR markers such as TT-PB1, TT-PB2 and TT-PB3 from the polymorphic bands obtained from the RAPD primers such as OPK04 , OPAJ15 and OPA17 and it is being used for validation to distinguish thermo-tolerant and susceptible lines in S8 generation of thermo-tolerant lines.
- *De-novo* Whole genome sequencing of *A. mylitta* was performed using PacBio and Illumina sequencer.
- In-depth survey was carried out in seven different parts of India inside the forest corridors for the collection of *A.mylitta* ecoraces and collected 18 different ecoraces. TasarGeoTag mobile application has been developed and linked with mobile and GAGAN dongle.
- Established Kompetitive Allele Specific PCR (KASP) based SNP barcoding system for the identification of ecoraces. High Density database was established for further line of research in *A.mylitta.*
- Standardised the protocol for mass production of *Cordiceps militaris* on tasar silkworm refuses such as egg, pupa and adult tissues.
- Cocoon softening ability of cocoonase variant trypsin and papain has been tested at laboratory level and it's on station trials are under progress.
- Designed/assembled prototype unit for mass level extraction of sericin from tasar cocoon cooking waste water.
- Signalling network underlying thermo-tolerance of *A.mylitta* had been analysed and being validated for further confirmation.
- Developed the techniques for *Antheraea mylitta* semen collection, its cryopreservation and artificial insemination.
- Developed control measures on the cross transmission of pebrine spores to Muga silkworm *A. assamensis* Helfer from other lepidopteran caterpillars.

- ❖ Pathogen responsible for virosis disease in muga silkworm was identified as cypovirus -4(Reoviridae)
- ❖ Epidemiology of baculovirus and iflavirus infections in *A.proyeli* and *A.mylitta* respectively were established.
- ❖ Developed antibodies against spore wall proteins suitable for early detection of *N.assamasis* and *N. Mylitta* through Lateral Flow assay.
- ❖ Test verified 11 chemicals for enhanced egg laying in Eri silk worm, resulted in 27% more egg production than the control. Similarly, in muga, 22 chemicals were test verified and found 33% increase in egg laying than the control.
- ❖ Eco-friendly bait method was developed to control potential bug predator (*Eocanthecona furcellata* Wolff) in Muga ecosystem.

In the last 10 years, 6 Vanya silkworm breeds (tasar-1, Muga-2, Eri-2, Oak tasar-1) have been developed and are under field trials for commercial exploitation.

(v) R&D on Post Cocoon Technology:

- ❖ Developed and characterised wrinkle resistant and high drape soft silk fabrics which is technically feasible and economically viable.
- ❖ Pre-treatment for cocoon cooking and cocoon cooking condition using vacuum permeation treatment followed by conveyor cooking has been studied and found better as compared to vacuum permeation treatment and conveyor cooking for production of bulk quantities of superior grade raw silk consistently in ARM units.
- ❖ Tasar cooking technology for wet reeling has been developed using vacuum permeation technique to enhance productivity, raw silk recovery and quality of tasar yarn.
- ❖ Standard test method for Muga Silk yarn has been studied and classification/ grading table has been developed.
- ❖ Developed woven and knitted fabrics using silk and silk blended melange yarns.
- ❖ Developed Sericin/polysaccharide encapsulated fertilizer for slow and sustained release of fertilizers which will promote crop growth and quality.
- ❖ Developed methods for converting discarded silk materials /waste to value added products for better sustainability and economics.

R&D efforts in Post cocoon Technologies have helped in improving the Renditta from 8.2 during 2005-06 to 6.3 during 2022-23.

(vi)Technologies/Products/Process-Patents (applied/granted) & Commercialisation:

a. Patents applied:-

- Auto Adjusted Angle Cutting Machine for silkworm Pupal Separation (Patent Application No. 202241052752 dated 15.09.2022)
- Optical tool embedded silkworm pupal gender classification and sorting machine (Patent Application No. 202241060352 dated 21.10.2022)

- Process for Extraction of Chitin/Chitosan from moth scales by Submerging Fragmentation Technology (Patent Application No. 202241059744 dated 19.10.2022)

b. Patents granted:-

- Wet reeling machine for wild silk, Patent No. 407711 dated 27.09.2022
- Machine for Harvesting Silkworm Cocoons from Mountages (Patent No. 394725 dated 12.04.2022)
- Dusting machine for silkworms (Patent No. 394974 dated 19.04.2022)
- Tray Washing Machine (Patent No. 402483 dated 28.07.2022)
- Trade Mark-Nirmool (Patent No. 5146724 dated 24.09.2022)

c. Commercialization:-

- Poshan-M/s R.V.Seri Agrovet, Kolar; M/s. SERIO CARE, Kolar; M/s. Seri- Con Technologies, Bengaluru
- Vijetha- Bed disinfectant-M/S Healthline Pvt.Ltd
- Cocoon cutting cum pupae Separator Machine-M/s NSTG India Pvt. Ltd
- Pebrine visualization Solution (PVS)-M/s Biosafe Hygiene.

(vii) Collaborative and externally funded R & D projects:

- ❖ CSB R&D institutes, in addition to the multi-institutional collaboration (between CSB R&D institutes), are also collaborated with other research Institutes such as IISc Bengaluru, NESAC Shillong, Bhat Biotech Bengaluru, TTRI Jorhat, ICAR (CIFRI Kolkata, NBAIR Bengaluru, IIHR Bengaluru), CSIR (CFTRI Mysuru, NEIST Jorhat) and State & Central Universities (University of North Bengal, Central University of Manipur, AAU Jorhat, Vel Tech. University, Chennai, Adichunchanagiri University, Mandya), PRADAN, NABARD, DoH- Tamil Nadu, Kalyan Foundation-Navsari etc. At present, 20 projects are being carried out in collaboration with these institutes/ organizations.
- ❖ CSB R&D institutes undertake international collaboration with some research institutes of other countries. At present, two research projects are undergoing in collaboration with International Institutes such as Tokyo University of Agri. & Technology-Japan, Yamaguchi University-Japan and Uzbek Research Institute-Uzbekistan.
- ❖ In addition to the in-house funded projects, R&D institutes of CSB also expedite financial assistance from national agencies *viz.*, DBT, DST, PPV &FR and NABARD. A total of 10 research projects with external funding are being carried out at various units of CSB.
- ❖ MOU has been made between CSB R&D institutes and research institutions in Bulgaria, Japan, China, and Australia for the exchange of Genetic material to improve hybrid vigor of mulberry silkworm.

Training

The R&D institutions of CSB spread across the country are intensively involved in training, skill seeding and skill enhancement on a sustainable basis, covering all activities of the silk value-chain pertaining to all the four silk sub-

sectors. Capacity Building and Training initiatives of CSB have been structured under the following five heads:

(i) Skill Training & Enterprise Development Programmes (STEP): Under this category, 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 Development 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 selected 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 and three SCRs are planning to be set up in the current financial year.

(iii) Capacity Building & Training by R&D Institutes of CSB: In addition to conducting structured long-term training programmes (Post Graduate Diploma in Sericulture & Intensive Sericulture Training) the R&D institutes of CSB conduct technology-based training for farmers and other 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) SAMARTH: The textile and apparel industry is one of the earliest industries developed in India. In order to meet the skill gap in the industry, the Government of India launched the scheme "**Samarth"-** a "Scheme for Capacity Building in Textile Sector (SCBTS)". The objectives of the scheme are to skill the youth for gainful and sustainable employment in the textile sector, to provide demand driven, placement oriented NSQF compliant skilling programmes covering the entire value chain of textiles, to promote skilling and skill upgradation in the traditional sectors of handlooms, handicrafts, sericulture & jute, and to enable provision of sustainable livelihood either by wage or self-employment to all sections of the society across the country.

The Central Silk Board is one of the sectoral organizations under Ministry of Textiles carrying out multifaceted task such as physical verification of training centres, implementing partner for conducting the training across the country and also as a ToT agency in silk sector. Under the Samarth

scheme, CSB has been nominated as one of the physical Verification Agencies and in this capacity and CSB has inspected a total of 993 Training Centres allotted to CSB, to ascertain suitability for undertaking skill development programmes under Samarth. 155 batches of SAMARTH training has been completed with 3273 stake holders.

The details of number of persons trained under the above said programmes organized by Research & Training Institutes of CSB during the years 2019-20, to 2022-23(up to December, 2022) is given below:

#	Training courses	No. of persons Trained							
		2019-20		2020-21		2021-22		2022-23(up to Dec, 2022)	
		Target	Achmt.	Target	Achmt.	Target	Achmt.	Target	Achmt.
1	Structured Courses (PGDS, Mulberry & Non-Mulb. Courses & Intensive sericulture training)	130	121	150	109	150	75	250	39
2	Farmers Skill Training, Technology Orientation Programmes, Capsule & Adhoc Courses and Exposure Visit and training in seed sector	10025	8100	6865	6454	6570	6196	6538	4666
3	Other Training Programmes	4050	4560	1490	1434	1030	1740	480	1690
4	STEP	1545	717	860	780	710	953	952	530
5	Training under SRC			2500	3301	2650	3199	2900	1015
Total under Silk Samagra		15750	13498	13225	12804	11110	12163	11120	7940
6	SAMARTH	1360			726		1369	8815	3273

Transfer of Technology (TOT)

The technologies emanated out of the concluded projects are being effectively transferred to the field through various Extension Communication Programmes (ECPs) viz., Krishi Mela cum exhibitions, Farmers' Field days, awareness programmes, Group Discussions, Enlightenment programmes/Technology Demonstrations, workshops/seminars/conferences etc. During the year 2022-23 up to the end of December 2022, a total of 209 ECPs were organized under pre-cocoon sector and various technologies developed by the CSB R&D institutes were transferred effectively among 14239 stakeholders in pre & post cocoon sectors. A total of 68,750 lots of cocoons, raw silk, fabrics, dyes, water etc. were tested for physical, chemical and eco-parameters.

I.T. Initiatives:

- **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 through this portal. Till 31-12-2022, total of 903 advisories and 56, 83,307 SMS messages were sent.

- **SMS service:** Day-to-day market rates of Silk and Cocoons are regularly sent through mobile phones 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 13,871 registered 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 full-fledged Video Conference facility at CSB Complex, Bangalore, CSR&TI, Mysore & Berhampore, CTR&TI, Ranchi, CSR&TI, Pampore, CMER&TI, Lahdoigarh, RO, New Delhi and MSSO Guwahati. Till 31-12-2022, 643 multi-studio Video conferences and web based video conferences were 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 stories are featured in the website.
- **National Database for farmers and reelers**: Farmers and Reelers database has been designed and developed to help policy makers by providing appropriate information for effective decision making. As on 31-12-2022, a total number of 7,65,810 farmers and 15,538 reelers details have been recorded by the states in the database.

2. SEED ORGANISATION

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

The Table below indicates the total quantity of seed production during the year 2020-21 to 2022-23(up to December, 2022).

(Unit: Lakh dfls)

Particulars	2020-21		2021-22		2022-23 (upto December,2022)	
	Target	Achmnt.	Target	Achmnt.	Target	Achmnt.
Mulberry	410.00	356.18	400.00	329.74	425.00	236.26*
Tasar	52.77	47.37	51.40	47.46	46.23	32.21
Oak Tasar	0.576	0.50	0.138	0.053	0.10	0.02
Muga	5.86	5.72	6.463	6.20	6.59	6.04
Eri	6.00	6.48	6.00	6.45	6.20	6.37
Total	**475.206**	**416.25**	**464.001**	**389.903**	**484.12**	**280.90**

* Tentative

IT initiatives under Seed sector:

- Registration of Stakeholders under Central Seed Act: CSB has developed web based Online registration (new/renewal) process to facilitate the stakeholders viz., Silkworm Seed Producers, Chawki Silkworm Rearers and the Silkworm Seed Cocoon Producers through www.csb.gov.in/ https://nssoregwebpages.firebaseapp.com, whicheases the process of paperless submission/transaction for registration.
- "e Cocoon" mobile application: As a part of quick and real-time monitoring by the Seed Analysts /Seed Officers under Central Seed Act, CSB has developed an Android based mobile application "e-Cocoon "for onsite/online reporting of the inspection proceeds of Seed Officers and Seed Analysts.

3. COORDINATION AND MARKET DEVELOPMENT.

Central Silk Board administration includes Board Secretariat, Regional Offices, Certification Centres 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. Besides, Board secretariat undertakes activity to mobilize additional funds through convergence with the programmes/schemes of various Ministries of Govt. of India. 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.

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, commercialization 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.

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 interest 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 2020-21 to 2022-23 (up to 3rd quarter) is given below:

Particulars	2020-21		2021-22		2022-23 (upto 3rd quarter)	
	Target*	Achmnt.	Target*	Achmnt.	Target	Achmnt.
Total No. of new Members enrolled	130	261	200	360	275	320
Total No. of Silk Mark Labels sold (Lakh nos.)	15	24.86	20	30.42	27	29.17
Awareness Programmes/ Exhibition/ Fairs/ Workshop/ Road shows	240	324	300	497	600	700

*The targets for 2020-21 & 2021-22 were considerably slashed in view of the downward trend in business due to COVID19 pandemic.

Silk Mark Expos

In order to ensure that Silk Mark gains further credibility & popularity, Silk Mark Expos were being organized exclusively for Silk Mark Authorized Users across the country.

- SMOI, Guwahati organized "Silk Mark Expo 2022" at Guwahati from 06.04.2022 to 10.04.2022. Approximately 3000 people visited the expo and recorded the business of Rs. 1.4 Crore.
- SMOI, Kolkata Chapter organized "Silk Mark Expo 2022 Patna" at Patna from 27.04.2022 to 01.05.2022. Approximately 2000 people visited the expo and recorded the business of Rs. 30-35 lakh.
- SMOI, Bengaluru Organized Silk Mark Expo at Bengaluru from 4th to 8th August, 2022 at Rangoli, MG road Metro, Bengaluru.
- SMOI, New Delhi Organized Silk Mark Expo from 22nd to 28th August, 2022 at Agha Khan Hall, New Delhi.
- CEO-SMOI visited Romania to participate in the ISC conference cum Exhibition from 5th to 14th Sep, 2022.
- SMOI, New Delhi participated in the "Silk FAB Expo-2022" organized by National Handloom Development Corporation (NHDC) from 8th to 22nd Oct, 2022 at Handloom Haat, Janpath, New Delhi.
- SMOI, Guwahati participated in "89th Nalbari Rass Mahotsav" organized by Assam Tade Promotion Organization (ATPO) during 8th to 19th Nov, 2022 at Nalbari, Assam.
- SMOI, New Delhi participated in the "Sharadotsav Winter Fair" event on 10th & 11th Dec, 2022 organized by New Moti Bagh Ladies club at New Delhi.
- SMOI, New Delhi participated in the "Textile Conclave" on 14th & 15th Dec, 2022 organized by Min. of Commerce & Industry, Consumer affairs, Food & Public Distribution and Textiles at TFC, Varanasi.
- SMOI, New Delhi participated in the event "My Saree My pride" organized by NHDC during 16th to 30th Dec, 2022 at HL Haat, Janpath, New Delhi.
- SMOI, Guwahati participated in the Exhibition during Muga Vanya Krishi Vigyan Mela-2022 organized by Muga Eri Silk worm Seed Organisation (MESSO), CSB at Mendipathar on 24.12.2022.

5. FINANCIAL PROGRESS

The table below indicates year-wise financial performance of the Central Silk Board during the years 2020-21 to 2022-23(up to 3rd Quarter):

(Cr. Rs.)

BUDGET HEADS	2020-21		2021-22		2022-23	
	Allocation (RE)	Expnd.	Allocation (Approved RE)	Expnd. *	Approved Outlay	Expnd. (up to 3rd Quarter)
Administrative Expenditure	447.88	447.88	500.44	488.52	492.78	358.13
Scheme Outlay- **for Silk Samagra**	202.13	202.13	374.56	365.55	382.22	172.63
Total	**650.00**	**650.00**	**875.00**	**854.07**	**875.00**	**530.76**

***Provisional expenditure upto 31st December, 2022

6. OTHER SCHEMES

A. CONVERGENCE EFFORTS:

CSB, Ministry of Textiles, GOI has taken up many convergence initiatives with various Ministries of Govt. of India by availing the financial support from other schemes/Programmes like MGNREGS, RKVY, NAP, TDF and State plan schemes to support sericulture activities from plantation to marketing including infrastructure for both pre & post cocoon sector & extension. During the year 2021-22, states have received sanction for 119 projects worth Rs.1069.58 crores and funds amounting to Rs.686.34 crores were released for the sericulture development. Further, during the year 2022-23, states have submitted 116 project proposals and received sanction for 80 projects amounting to Rs.786.61 crores and received funds of Rs.414.49 crores.

B. SCHEDULED CASTE SUB-PLAN (SCSP)

During 2022-23, an amount of Rs. 20.00 crores has been allocated as per the proposed Revised Estimate towards implementation of beneficiary oriented components under Scheduled Caste Sub-Plan (SCSP).

C. TRIBAL SUB-PLAN (TSP) & North East Tribal (NET)

During 2022-23, an amount of Rs. 15.00 crores and Rs. 25.00 crores have been allocated as per the proposed Revised Estimate towards implementation of beneficiary oriented components under Tribal Sub-Plan (TSP) North East Tribal (NET) respectively. An amount of 9.07 crores under TSP and 10.00 crores under NET have been released to various states at the end of December, 2022.

D. SERICUTURE DEVELOPMENT IN NORTH-EASTERN STATES (NERTPS)

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 has approved 38 Sericulture projects for implementing in the identified potential districts of all North Eastern States under four broad categories viz., Integrated Sericulture Development Project (ISDP), Intensive Bivoltine Sericulture Development Project (IBSDP), Eri Spun Silk Mills and Aspirational Districts with a total cost of Rs.1115.64 crore, of which GoI share is Rs.963.74 crore. Fund release for the balance liability for these projects were subsumed under current Silk Samagra-2 Scheme. As on December, 2022, an amount in total of Rs. 855.74 crore has been released to the above projects under NERTPS & Silk Samagra-2 schemes.

a. **Integrated Sericulture Development Project)ISDP(:** Eighteen projects have been approved with a total cost of Rs.631.97 crore with GoI share of Rs.525.11 crores which includes 18 projects under ISDP in Assam including BTC, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura states. The projects will cover 29,910 acres of Mulberry, Eri & Muga plantation benefitting around 41,068 beneficiaries covering in all NE States.

   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 with 100% Central assistance. This unit targets to print and process 1.50 lakh metre silk per annum.

   Seed Infrastructure Units in CSB :To create infrastructure facilities for production of the quality seeds in Mulberry, Eri and Muga Sectors in Assam, BTC, Meghalaya and Nagaland, 6 silkworm seed production units were set up at a total cost of Rs.37.71 crore with 100% Central assistance. These units have a production capacity of 30 lakh mulberry dfls and 21.51 lakh Muga & Eri dfls for supplying to States and stakeholders.

b. **Intensive Bivoltine Sericulture Development Project)IBSDP(**: To produce import substitute bivoltine silk in NE states, ten projects under IBSDP are being implemented at a total cost of Rs. 290.32 crores with GoI share of Rs.258.74 crores. These projects cover around 4,900 acres of mulberry plantation and benefits around 10,607 women beneficiaries in all NE States (except Manipur) .

c. **Eri Spun Silk Mills (ESSM):** Establishment of 3 Eri Spun Silk Mills in Assam, BTC and Manipur States have been approved with a total cost of Rs.72.31 crore)GoI share of Rs.65.00 crore (to produce 165 MT of Eri spun silk yarn per annum, which benefits around 7,500 stakeholders after completion of establishment.

d. **Development of Sericulture in Aspirational Districts (AD):** Govt. of India initiated development of silk industry in the Aspirational Districts in one/two blocks per district covering Mulberry, Eri, Muga or Oak Tasar as per the potentiality of the district with the involvement of State Governments. Presently, 5 sericulture projects are under implementation in the states of Assam, BTC, Mizoram, Meghalaya and Nagaland at a total cost of Rs. 79.60 crore with GOI share of Rs. 73.47 crore. These projects envisaged to cover 3,360 acres of plantation to benefit around 4,245 beneficiaries.

e. Progress: Upto December, 2022, about 37,326 acres have been brought under host plantation of Mulberry, Eri , Muga & Oak Tasar covering 50,826 beneficiaries and produced 5000 MT(P) of raw silk during the project period (2014-15 to 2022-23). As against Rs. 855.74 crore released by Ministry/CSB under the above projects, an expenditure of Rs.762.12 crore)89(% has been incurred towards creation of about 50,000 assets at individual beneficiary level and at common facility level (Construction of rearing houses, seed grainages, reeling infrastructure, mounting halls, plantation etc.).

The summary of overall Sericulture projects being implemented under NERTPS up to December 2022 is given in the Table below:

#	State	Total Project cost)Rs .Cr(.	Total GoI Share)Rs.Cr(.	Progress during the project period up to December, 2022		
				GoI Release)Rs .Cr(.	Beneficiaries)Nos(	Plantation (Acres)
A	ISDP (18 Projects)	631.99	525.11	485.26	38,178	29,910
	Tripura)Silk Printing(	3.71	3.71	3.71	-	-
	CSB Seed Infrastructure	37.71	37.71	37.71	-	-
	Total for ISDP (20 Projects)	**673.41**	**566.53**	**526.68**	**38,178**	**29,910**
B	IBSDP (10 Projects)	290.32	258.74	237.08	9,379	4,650
C	Eri Spun Silk Mills (3 Projects)	72.31	65.00	19.55	-	-
D	Aspirational Districts (5 Projects)	79.60	73.47	67.59	3,269	2,766
	IEC	-	-	4.84	-	-
Grand Total*)38 projects(		**1115.64**	**963.74**	**855.74**	**50,826**	**37,326**

*Provisional (up to 3rd quarter October to December-2022)

Sericulture Development in North-Eastern States under Silk Samagra-2

As per the directives of Department of Expenditure, Govt. of India, various Central Sector Schemes have been rationalized and schemes with similar objectives are proposed to be merged under one scheme. Keeping in view of the said guidelines of the DOE, Ministry of Textiles, Govt. of India has decided to discontinue the Ministry's umbrella scheme "NERTPS". Ministry of Textiles has directed Central Silk Board to continue the project based sericulture activities in North Eastern States under the proposed Silk Samagra-2 scheme in line with the NERTPS with necessary budgetary provision under NE Budget head of Ministry. It has been further directed that in view of the discontinuation of NERTPS by the Ministry of Textiles, the on-going sericulture projects activities under NERTPS have to be carried forward as committed expenditure under Silk Samagra-2 Scheme.

Progress: Upto December, 2022, about 6640 acres of host plantation have been approved under Mulberry, Eri and Muga sectors covering 10358 beneficiaries and proposed to produce 711 MT (P) of raw silk during the project period (2021-22 to 2024-25). An amount of Rs. 91.15 crore has been released to NE states for the implementation of projects.

Some of major initiatives adopted for monitoring of the implementation of above projects are as follows:

- Geo-tagging of assets created under on-going sericulture projects have been undertaken through NESAC, Shillong. The assets of around 46,094 NERTPS beneficiaries are to be geo-tagged. The 14 projects sanctioned since 2018, the details of land and beneficiaries covered in respect of plantation are being captured using GPS Map Camera App. and geo-tagged details of around 40000 beneficiaries for plantations and other assets have been uploaded in SILKS Portal.
- MIS have been developed under ISDP, IBSDP & Aspirational Districts. So far 90% of MIS have been uploaded under the project.
- As a part of monitoring & evaluation, field visits have been undertaken in the project sites by the scientists of CSB regularly. An Internal Assessment on the progress of projects is being carried out regularly and suggests DoSs to take action on the findings.
- Combined meetings are being conducted at regular intervals with all NE States by CSB and MoT to review the progress of projects.

POLICY INITIATIVES

1. Customs Duty on imports: The basic customs duty on raw silk was enhanced from the level of **10% to 15%** on 1st Feb-2021. The basic customs duty on silk fabric is maintained at 20 %.

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 15th century. Sericulture industry provides employment to approximately 8.8 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 has 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 2021-22, Mulberry accounted for 73.97% (25,818

MT), Tasar 4.20% (1,466 MT), Eri 21.10% (7,364 MT) and Muga 0.73% (255 MT) of the total raw silk production of 34,903MT.

Performance of Sericulture Sector

Particulars	2018-19 Achmnt.	2019-20 Achmnt.	2020-21 Achmnt.	2021-22 Achmnt.	2022-23	
					Target	Achmnt. (April-Dec)
Mulberry Plantation (Lakh ha.)	2.35	2.39	2.38	2.42	2.60	2.55
Raw Silk Production						
Mulberry (Bivoltine)	6987	7009	6783	7941	9250	6362
Mulberry (Cross breed)	18358	18230	17113	17877	19510	13756
Sub Total (**Mulberry**)	**25345**	**25239**	**23896**	**25818**	**28760**	**20118**
Tasar	2981	3136	2689	1466	3850	1070
Eri	6910	7204	6946	7364	7900	6329
Muga	233	241	239	255	290	227
Sub Total (**Vanya**)	**10124**	**10581**	**9874**	**9085**	**12040**	**7626**
GRAND TOTAL	**35468**	**35820**	**33770**	**34903**	**40800**	**27744**

Source: Compiled at CSB from the data received from DOSs.

Raw Silk Production during 2021-22

The total raw silk production in the country was 34,903 MT during 2021-22 which is 3.4% higher than the production achieved during 2020-21 (33,770 MT) and around 88.4% of the annual targeted production for the year 2021-22.

The bivoltine raw silk production increased substantially by 17.1% from 6,783 MT during 2020-21 to 7,941 MT during 2021-22. Further, vanya silk, which includes Tasar, Eri and Muga silks have reduced by 8% during 2021-22 over 2020-21. It is mainly due to reduction in the tasar silk production by 45.5% during 2021-22.

The area under mulberry has increased by 2% in 2021-22 compared to previous year. The state-wise productions of raw silk during 2018-19 to 2022-23 (till December, 2022) are given in **Annexure- I.**

Raw Silk Imports:

The quantity and value of raw silk imported during 2018-19 to 2022-23 (till November, 22) are given below:

Year	Quantity (MT)	Value (Rs. in Crores)
2018-19	2785	1041.35
2019-20	3315	1149.32
2020-21	1804	570.56
2021-22	1978	819.68
2022-23(April- Nov) (P)	2962	1299.46

Source: DGCIS, Kolkata P : Provisional

Exports:

The export earnings during 2021-22 were Rs. 1848.96 crores. Export values of silk goods during 2018-19 to 2022-23 (till November, 22) are given below:

(Rs. in Crores)

Items	2018-19	2019-20	2020-21	2021-22	2022-23 (April –Nov)(P)
Natural Silk Yarn	24.72	16.77	29.37	52.62	29.10
Silk Fabrics and made-ups	1022.43	982.91	729.50	837.41	377.47
Readymade Garments	742.27	504.23	449.56	671.13	474.62
Silk Carpet	113.08	143.43	107.56	79.12	246.93
Silk Waste	129.38	98.31	150.61	208.67	118.28
Total	**2031.88**	**1745.65**	**1466.60**	**1848.96**	**1246.40**

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

Employment Generation:

The employment generation in silk industry in the country is 8.8 million persons in 2021-22 compared to 8.7 million persons in 2020-21, indicating an increase of 1.1%.

Annexure- I

State-Wise Raw Silk Production during the 2018-19 to 2022-23(till December, 2022)

(in MT)

#	State	2018-19		2019-20		2020-21		2021-22		2022-23 (till December,2022)	
		Target	Achmnt.	Target	Achmnt	Target	Achmnt.	Target	Achmnt	Target	Achmnt (P)
1	Karnataka	10750	11592	12000	11143	12600	11292	12500	11191	12750	8722
2	Andhra Pradesh	7805	7481	7946	7962	8208	8422	9305	8834	9530	6903
3	Telangana	200	224	295	297	310	309	337	404	362	216
4	Tamil Nadu	2190	2072	2300	2154	2300	1834	2400	2373	2600	1886
5	Kerala	14	16	20	13	17	7	10	9	13	8
6	Maharashtra	415	519	630	428	475	428	560	523	620	414
7	Uttar Pradesh	340	289	365	309	354	316	395	355	430	236
8	Madhya Pradesh	160	100	165	61	80	47	74	33	85	15
9	Chhattisgarh	670	349	562	480	535	300	561	224	562	145
10	West Bengal	2775	2394	2900	2295	2520	872	1630	1632	1776	1325
11	Bihar	95	55	86	56	58	64	96	56	105	2
12	Jharkhand	2658	2375	2604	2402	2904	2185	2902	1052	2902	834
13	Odisha	148	131	155	137	160	102	185	108	190	48
14	Jammu & Kashmir	190	118	170	117	142	80	150	99	150	79
15	Himachal Pradesh	43	34	50	31	45	20	40	28	40	31
16	Uttarakhand	45	36	42	40	25	25	42	42	46	23
17	Haryana	2	0.7	2	1	1	1	1	0.75	2	0.3
18	Punjab	5	3	5	3	4.5	1	2	3.5	7	4
19	Assam	4980	5026	5395	5316	5519	5462	5855	5700	6063	5004
20	Ar. Pradesh	65	59	75	64	67	43	59	53	60	49
21	Manipur	435	464	600	504	542	327	530	462	557	328
22	Meghalaya	1110	1187	1220	1192	1245	1213	1367	1234	1372	1014
23	Mizoram	105	92	130	104	113	43	59	59	95	68
24	Nagaland	633	620	682	600	649	264	311	315	341	304
25	Sikkim	3	0.4	1	1	2	0.08	5	0.03	2	0.2
26	Tripura	125	230	130	111	125	112	125	113	140	88
Total		**35960**	**35468**	**38530**	**35820**	**39000**	**33770**	**39500**	**34903**	**40800**	**27744**

(P): Provisional