

वार्षिक प्रतिवेदन Annual Report

2014 -15



केन्द्रीय रेशम बोर्ड Central Silk Board

वस्त्र मंत्रालय-भारत सरकार Ministry of Textiles - Government of India

वार्षिक प्रतिवेदन
Annual Report
2014-15



केन्द्रीय रेशम बोर्ड

वस्त्र मंत्रालय - भारत सरकार
केरेबो काम्प्लेक्स, बी टी एम लेआउट, मडिवाला
बेंगलूरु - 560 068, भारत

CENTRAL SILK BOARD

Ministry of Textiles - Govt. of India
CSB Complex, B T M Layout, Madiwala
Bengaluru - 560 068, INDIA

नवंबर 2015

November 2015

द्विभाषी (हिन्दी और अँग्रेजी) : 500 प्रतियाँ

Bilingual (Hindi & English) : 500 Copies

प्रकाशित

डॉ एच. नागेश प्रभु, भा.व.से.

सदस्य-सचिव

केन्द्रीय रेशम बोर्ड

बेंगलूरु - 560 068

Published by

Dr. H. Nagesh Prabhu, I.F.S.

Member Secretary

Central Silk Board

Bengaluru - 560 068

मुद्रित

क्रियेटिव ग्राफिक्स

#149, सुल्तानपेट

बेंगलूरु - 560 053

दूरभाष : 080-2237 0262

Printed by

Creative Graphics

#149, Sultanpet,

Bengaluru - 560 053

Ph : 080-2237 0262

CONTENTS

Page No.

I. ACTIVITIES OF CENTRAL SILK BOARD - HIGHLIGHTS

1.1	Introduction	5
1.2	Performance of Sericulture Industry - A Bird's Eye View	5
1.3	Research and Development	5
1.4	Patenting and Commercialization	7
1.5	Transfer of Technology	7
1.6	Training	8
1.7	IT Initiatives	8
1.8	Seed Organization	8
1.9	Major Events	8
1.10	Special Releases	9
1.11	Accolades and Awards	9
1.12	Visits	10

II. FUNCTIONS AND ORGANIZATIONAL SET-UP

2.1	Introduction	13
2.2	Functions	14
2.3	Constitution	14
2.4	Staff Strength	15
2.5	Vigilance	16
2.6	Public Information Cell - Implementation of Right to Information Act, 2005	16
2.7	Association with ISC and other countries / organizations	16
2.8	Awards Received by CSB & its Institutes	17
2.9	Visit of CSB delegation to other countries	17
2.10	Parliament Related Matter	17
2.11	Policy Initiatives	18

III. PLAN PROGRAMMES OF CSB

3.1	Central Sector Schemes	21
•	Central Sericultural Research & Training Institute, Mysuru	21
•	Central Sericultural Research & Training Institute, Berhampore	25
•	Central Sericultural Research & Training Institute, Pampore	28
•	Central Sericultural Germplasm Resources Centre, Hosur	31
•	Silkworm Seed Technology Laboratory, Bengaluru	32
•	Seribiotech Research Laboratory, Bengaluru	32
•	Central Tasar Research & Training Institute, Ranchi	33
•	Central Muga Eri Research & Training Institute, Lahdoigarh	36
•	Central Silk Technological Research Institute, Bengaluru	39
3.2	Centrally Sponsored Schemes	55

IV. PROJECTS WITH FUNDING FROM OTHER ORGANIZATIONS

4.1	Integrated Sericulture Development Project under NERTPS	69
4.2	Projects Funded by Other Ministries	71
4.3	Integrated Skill Development Scheme	75
4.4	JICA Programmes in India	76

V. FINANCE AND ACCOUNTS

5.1	Receipts (Grants-in-Aid)	81
5.2	Expenditure	84
5.3	Loan	87
5.4	Provision approved by the MOT in the BE for the year 2014-15	87
5.5	Internal Audit	90

VI. SERICULTURE STATISTICS

6.1	Raw Silk Production	93
6.2	Cocoon and Raw Silk Prices	94
6.3	Export of Silk Goods	98
6.4	Import of Silk Goods	99
	• Graphs	

ANNEXURES

•	Organizational chart of the Central Silk Board	103
•	Units of CSB	104
•	List of Board Members	105
•	Zone-wise, State-wise Approved Budget Estimate and Funds Released	110
•	Centrally Sponsored Schemes for Sericulture Development During XII Plan Financial Targets and Achievements Under CDP During 2014-15	111
•	Centrally Sponsored Schemes for Sericulture Development During XII Plan Physical Targets and Achievements Under CDP During 2014-15	116
•	Statement Indicating the Status of State-wise Funds Released During the years 2012-13, 2013-14 & 2014-15 Under CDP	121
•	State-wise Silk Production During 2013-14 & 2014-15	122

Activities of Central Silk Board - Highlights



1.1 Introduction

India has the unique distinction of being the only country producing all the four known commercial varieties of silks in the world namely, mulberry, tasar, eri and muga, of which muga with its golden yellow sheen is unique and prerogative of India. The year 2014-15 has registered a remarkable progress in terms of raw silk production and employment generation. The highlights of achievements of the industry during the year are elucidated below:

and Muga-158 MT) with an increase of 4.5% over the previous year.

- Raw silk yield per hectare has increased from 93.0 kg in 2011-12 to 97.27 kg in 2014-15.
- Cumulative employment generation under sericulture sector has risen to 8.03 million persons in 2014-15 as compared to 7.85 million in 2013-14 with a growth of 2.29%.

Table 1: Raw Silk Production in India

#	Particulars	2014-15	2013-14	% increase
A	Area under Mulberry (ha)	219819	203023	8.3
B	Mulberry Raw Silk (MT)			
	Bivoltine	3870	2559	51.2
	Cross Breed	17520	16917	3.6
	Sub-Total (B)	21390	19476	9.8
C	Vanya Silk (MT)			
	Tasar	2434	2619	-7.1
	Eri spun silk	4726	4237	11.5
	Muga	158	148	7.1
	Sub-Total (C)	7318	7004	4.5
	Total (B+C)	28708	26480	8.4

Source: Compiled from the reports received from State Sericulture Departments

1.2 Performance of Sericulture Industry – A Bird's Eye View

- Country's raw silk production has reached a new height of 28708 MT with a growth rate of 8.4% over the previous year.
- Mulberry raw silk output aggregated to 21390 MT (74.5%). The remaining 7318 MT (25.5%) was Vanya silks.
- Record production of import-substitute bivoltine silk of 3870 MT with an increased growth of 51.2% over the previous year.
- Vanya raw silk has registered a record production of 7318 MT (Tasar-2434, Eri-4726

- Export of Indian silk goods has increased by 14.0% and the export earnings stood at Rs. 2829.88 crore as compared to Rs. 2480.89 crore during the previous year.

1.3 Research and Development

1.3.1 Mulberry Sector

- Three new mulberry varieties, viz., G4, C2038 and Suvarna2 are under field testing. These varieties are capable of yielding more than 50-60 MT/ha/yr under irrigated conditions.
- A new mulberry variety (G2), evolved through conventional breeding technique,

yields better than the current popular variety V1 under irrigated condition and S13 under rainfed conditions in southern region.

- Popularization of the authorized silkworms CSR16 x CSR17, MH1 x CSR2 and APDR15 x APDR115 in south zone, SLD4 x SLD8, GEN3 x GEN2, FC1 x FC2, M.con1 x B.con4, M.con4 x B.con4, M.con1 x M.con4 in eastern and North-eastern zones, CSR46 x CSR47 and APS5 x APS4 in northern and North-western zones is under field trials.
- Two new bivoltine hybrids, viz., G11 x G19 and B.con1 x B.con4 with better yield and adaptiveness are under authorization trials.
- Three new bivoltine hybrids were developed, viz., FC3 x CSR15 (Three way cross hybrid) and (D1 x D2) x (D13 x D11) (Double hybrid) for rearing throughout the year and D2 x D13 (Single hybrid) for favourable seasons with a yield potential of 65-70kg/100 dfls.
- Suitable hibernation schedule was developed for preservation of Barpat (Univoltine) and SK6 and SK7 (Bivoltine) eggs.

New breeds/varieties approved during 2014-15

The new silkworm breeds authorized for different regions are as follows:

Sl. No.	New Breeds / Varieties	Region
1	CSR50 x CSR51	Southern zone
2	AP71 x AP72	
3	PM x FC2	
4	(CSR52 x CSR50) x (CSR51 x CSR53)	All India
5	N x (SK6 x SK7)	Eastern zone
6	M6DP x SK4	
7	BDR-10 - Tasar	All regions
8	C2 - Eri	All regions

1.3.2 Vanya Sector

- Tasar silkworm Daba - BDR10 and Eri silkworm breed - C2 have been authorized for commercial exploitation, while new tasar breed - CTR14 is under field testing.
- An alternative food plant *Lagerstroemia speciosa* was identified for tasar silkworm rearing, which is easy rooter and fast growing and its rearing performance is *on par* with *Terminalia arjuna*. Besides, 16 hybrid combinations of *Terminalia* have been developed.
- Package of practices for the grainage of wild Laria was developed and adopted at selected PPCs of Jharkhand.
- Two high yielding genotypes of Kesseru, Hi-008 and HF005 with a gain in leaf yield have been identified.
- Under silkworm exploration and characterization, more than 200 species of wild sericigenous insects were collected from 6 North-eastern states; 41 species belonging to *Saturinidae* and *Bombycidae* were identified. These species were preserved for future study.
- Ten accessions of eri silkworm were evaluated and E-201 and E-206 have been identified for semi-arid conditions of Andhra Pradesh.
- Two Som accessions (S3 & S6), resistant to leaf spot disease are being popularized in the field.
- Cocoon preservation technique was developed for delaying moth emergence upto 15 days and for synchronized grainage in tasar. Preservation of cocoons at low temperature was found effective.
- An eco- and user-friendly tasar silkworm egg washing and sterilization formulation (Depuratex) has been developed and commercialized.

- 20 species belonging to 9 different genera, viz., *Antheraea*, *Actias*, *Attacus*, *Bombyx*, *Samia*, *Cricula*, *Dendrolimus*, *Lebeda*, *Rhodinia* were identified through molecular markers.

1.3.3 Post-cocoon Sector

- A four-window energy efficient re-reeling machine has been developed.
- Solar powered low cost spinning machine has been developed for rural areas facing electricity problems. It also has a pedal for manual operation.
- Low cost eight-end multi-end reeling machine for tasar silk was standardized.
- Conveyor hot air drier suitable for the indigenous reeling units was developed and technical specifications were prepared.
- Motorized reeling machine that helps in silk recovery of 52% and production of 289g/day/reeler (58 denier), besides, reduction in silk waste and manpower has been developed.
- In Vanya silk post-cocoon sector, wet reeling machine for 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, were developed.
- A hot air drier drying silkworm pupae of 250-500 kg was developed and it is under trial.
- A pellade extraction and pupa separation machine was developed for removal of pellade layer from used silkworm pupae.

1.4 Patenting and Commercialization

- Four products, viz., Depuratex, Sericilin, Nemahari and Jeevan Sudha were commercialized.
- License has also been given to new parties for commercial production of Poshan,

Navinya, Ankush, Sampoorna, PVC stands for rearing of young age silkworms, chawki leaf chopper and machine for harvesting cocoons from plastic collapsible mountages.

- Hot air drier of 250-500 kg capacity for drying silkworm pupae was referred to NRDC, New Delhi, for patenting.

1.5 Transfer of Technology

- The technologies emanated out of the concluded projects have been effectively transferred to the field through various extension communication programmes.
- 1738 ToT programmes were organized and 54 technologies were transferred effectively at the user level.
- 1269 mulberry germplasm accessions are under conservation in *ex-situ* (field gene bank).
- 458 silkworm germplasm stocks were maintained and 34 new mulberry and 6 silkworm germplasm stocks were introduced.
- NPV tolerant bivoltine silkworm lines of improved CSR2, viz., MASN4, 6 and 7 have been developed under marker assisted breeding programme.
- An infectious flacherie virus has been identified from infected tasar silkworms based on RdRP gene primers and it has been designated as AMIFV.
- A double step preservation technology has been developed for eri silkworm eggs upto 11-12 days without affecting the hatching and rearing performance.
- 110523 cocoons and silk samples, 12289 lots of water dyes and other textile auxiliaries and 3267 textile lots were tested.

1.6 Training

- Central Silk Board and its R&D nested units have trained 11100 persons under different long-term and short-term courses (PGDS, Capsule, Adhoc, TUP, SDP, RDP, MDP, Need-based Farmers Training programmes and others).
- 632 candidates have registered for 6 months 'Certificate Course in Sericulture' in collaboration with IGNOU, New Delhi.
- 6689 beneficiaries were trained during the year and 9792 beneficiaries were linked to employment since inception through a comprehensive project 'Integrated Skill Development Scheme (ISDS), a Ministry of Textiles' flagship initiative with focus on 'skill seeding' and 'skill development'.
- CSB is establishing a 'Centre of Excellence' focusing on post-cocoon sector. The construction work is under progress.

1.7 IT Initiatives

- 'SMS Service' has been introduced on day-to-day market rates of raw silk and cocoons for farmers and other stakeholders.
- A national level SERI-5K database of bivoltine cluster farmers has been designed and developed.
- Sericulture Information Linkages and Knowledge System (SILKS) portal has been developed in association with North-eastern Space Application Centre, Department of Space, Shillong (Meghalaya) by capturing geographical images through satellite and used for analysis and selection of potential areas for promotion of sericulture.

1.8 Seed Organization

1.8.1 Mulberry Seed

- National Silkworm Seed Organization of CSB has produced 370.13 lakh dfls against the target of 404.24 lakh dfls through one way system of multiplication of approved breeds.
- 19 Basic Seed Farms (9 bivoltine and 10 multivoltine) and one Centre for Sericulture Development (CSD) of NSSO have generated 63.19 lakh bivoltine and 56.03 lakh multivoltine seed cocoons.

1.8.2 Vanya Seed

- **Tropical tasar:** The Basic Tasar Silkworm Seed Organization of CSB through its network of BSMTCS and CTSS has produced and supplied 86145 tasar nucleus seed for replenishment that resulted into basic seed production of 34.31 lakh dfls by BTSSO and 6.71 lakh dfls through private graineurs.
- **Oak tasar seed:** The oak tasar network units have produced 58000 dfls.
- **Muga seed:** The Muga Silkworm Seed Organization of CSB through its P4, P3, P2 seed centres and its SSPC at Kaliabari has produced 6.11 lakh muga dfls.
- **Eri seed:** The Eri Silkworm Seed Organization of CSB has produced 5.69 lakh eri dfls through its units for distribution to different state departments.

1.9 Major Events

- An exclusive workshop on empowering women through sericulture (as a part of "Sab Ka Saath - Sab Ka Vikas" initiative) was organized by the Ministry of Textiles and Central Silk Board in New Delhi

on 17th September 2014 wherein 54 progressive women sericulture farmers from 27 states were felicitated by the Hon'ble Union Minister of State for Textiles.

- CSB has coordinated the organization of the 23rd Congress of the International Sericultural Commission during 24th – 27th November, 2014 at Bengaluru. This triennial international event has deliberated on various important issues of sericulture development for *inclusive growth*, wherein 315 delegates from 17 countries participated and presented 191 scientific papers. CSB has deputed 82 scientists and technocrats for the event.
- A state-of-the-art Cold Storage unit capable of storing 1.3 crore layings has been established at Mysuru, Karnataka. This facility overseas systematic incubation of the silkworm eggs prior to its dispatch to the farmers. This was inaugurated by Shri Santosh Kumar Gangwar, Hon'ble Union Minister of State for Textiles on 9th February, 2015.

1.10 Special Releases

- The Hon'ble Union Minister of State for Textiles released the special booklet on Women Achievers in Sericulture-2014" during the Workshop on empowering women through sericulture-a commitment to Government of India's initiative, *Sab Ka Saath – Sab Ka Vikas*, held on 17.9.2014 at New Delhi.
- A special issue of Indian Silk on women empowerment was released by His Excellency, the Governor of Karnataka during the inaugural session of 23rd Congress of International Sericultural Commission held at Bengaluru on 24.11.2014.

- A souvenir issue of Indian Silk on the 23rd Congress of International Sericultural Commission was released by Hon'ble Union Minister of State for Textiles during the valedictory session of the congress on 26.11.2014.

1.11 Accolades and Awards

- **National e-governance Award:** Central Silk Board has been awarded with the National e-governance Silver Award-2014-15 for its project on 'Application of remote sensing and GIS technology in sericulture development' by the Department of Administrative Reforms and Public Grievances (DAR&PG) for promoting excellence in implementation of e-governance initiatives.
- **Indira Gandhi Rajbhasha Award:** Central Silk Technological Research Institute, Bengaluru has been awarded the Indira Gandhi Rajbhasha Second Prize for outstanding compliance in Official Language Implementation for the year 2013-14. The Director In-Charge, CSTRI, Bengaluru has received the award from His Excellency, the President of India on 15-11-2014 during a function organised at Vigyan Bhavan, New Delhi.
- **Louis Pasteur Award - 2014:** Dr. B.S. Angadi, Director (Tech), Central Silk Board has received the prestigious Louis Pasteur Award-2014 for his outstanding contribution in sericulture development in the country during 23rd Congress of ISC on Sericulture and Silk Industry held at Bengaluru on 24th November 2014. The award is instituted by International Sericultural Commission, Bengaluru, India.
- **Best Educationist Award:** Dr. S. Nirmal Kumar, Director, CSRTI, Berhampore has

been awarded as 'Best Educationist' by International Institute of Education and Management for his outstanding contribution to the field of education and as 'Star Asia' by International Business Council for his outstanding contribution to the field of education.

- Central Sericultural Research and Training Institute, Berhampore, West Bengal has received 2nd prize for Tourism and Science Festival, Baruipur, Technology Week-cum-

Krishi Mela-2014 and in 26th Krishi Shilpa "O" Baniya Mela, Chandipur.

1.12 Visits

- Hon'ble Union Minister of State for Textiles, Government of India has visited the Central Silk Board Secretariat, CSTRI and SSPC, Bengaluru on 26-11-2014.
- Dr. S.K. Panda, Secretary to Government of India, Ministry of Textiles has visited the Central Silk Board Secretariat, CSTRI and SSPC, Bengaluru on 23-11-2014.

Functions & Organizational Set-up



2.1 Introduction

Central Silk Board (CSB), constituted in April, 1949, by an Act of Parliament (Act No.LXI of 1948), is a statutory body under the Ministry of Textiles, established for the development of sericulture and silk industry in the country.

India enjoys the unique position of producing all the four known varieties of silk, namely, domesticated mulberry silk (*Bombyx mori*), semi-domesticated eri silk (*Philosamia ricini*), wild tasar silk (*Antheraea mylitta*) and the golden muga silk (*Antheraea assamensis*).

Sericulture is a labour intensive industry in all its phases with employment generation of about 8 million people per annum indicating a growth of 2.3% over 2013-14. Since Labour Force Participation Rate in sericulture is far ahead in comparison to similar rural avocations, it has significantly contributed to poverty alleviation thereby achieving the national agenda of *inclusive growth*.

The activities of CSB include research and development, front line demonstration, maintenance of four-tier silkworm seed production network, leadership role in commercial silkworm seed production, standardizing and instilling quality parameters in various production processes, promotion of *Indian Silk* in domestic as well as international markets and advising the Union Government on all matters concerning sericulture and silk industry. These activities are being carried out by CSB through its 327 units located in different states. The details of the units are at **Annexure – I (a & b)**.

Besides, CSB implements a Centrally Sponsored Scheme (CDP) aiming at synergi-

zing and disseminating technologies, innovations developed by its R&D units and incentivising investments among the stakeholders to enhance production, productivity and quality of silk.

2.2 Functions

CSB coordinates and assists in :

- Promotion of development of silk Industry by such measures as it thinks fit.
- Undertaking, assisting and encouraging scientific, technological and economic research.
- Devising means for improved methods of mulberry cultivation, silkworm rearing, developing and distribution of healthy silkworm seed, improved methods of silk reeling and spinning of cocoons and silk-waste, improving the quality and production of raw silk, if necessary, by making it compulsory for all raw silk to be marketed only after the same has been tested and graded in properly equipped Raw Silk Testing and Conditioning Houses (RSTCH).
- Improvement of raw silk marketing.
- Advising the central government on all matters relating to the development of silk industry including import and export of raw silk.
- Collection of sericulture statistics.
- Preparation of reports related to silk industry for Ministry of Textiles, Government of India.

2.3 Constitution

CSB is constituted by 39 members appointed as per the powers and provisions conferred by Sub-Section 3 of Section 4 of the

CSB Act 1948, for a period of 3 years. The new members nominated during the period under report are listed below:

Sl. No.	Name and designation of the nominated member	Period of nomination	Notification details
Under Section 4(3)(b)			
1	The Member Secretary, Central Silk Board, Bengaluru, Karnataka.	03.11.2014 to 02.11.2017	25012/7/2014-Silk dtd.03.11.2014
Under Section 4(3)(c)			
2	Shri P.C. Mohan, Member of Parliament (Lok Sabha), New Delhi.	18.07.2014 to 17.07.2017	25012/4/2014-Silk dtd.19.08.2014
3	Shri Nimmala Kristappa, Member of Parliament (Lok Sabha), New Delhi.	18.07.2014 to 17.07.2017	25012/4/2014-Silk dtd.19.08.2014
4	Smt. P.K. Sreemathi Teacher, Member of Parliament (Lok Sabha), Kannur, Kerala.	18.07.2014 to 17.07.2017	25012/4/2014-Silk dtd.19.08.2014
Under Section 4(3)(d)			
5	Shri Mohamud Dastagira, PO/Dist. Ramanagaram, Karnataka	20.08.2014 to 19.08.2017	25012/56/99-Silk dtd.20.08.2014
6	Shri K. Mudde Gowda, T. Narasipura, Dist., Mysuru, Karnataka.	20.08.2014 to 19.08.2017	25012/56/99-Silk dtd.20.08.2014
7	Shri P. Somanna, Nanjangud, Dist., Mysuru, Karnataka.	20.08.2014 to 19.08.2017	25012/56/99-Silk dtd.20.08.2014
8	The Principal Secretary to Govt. of Karnataka, Bengaluru, Karnataka.	09.10.2014 to 08.10.2017	25012/7/2014-Silk dtd.09.10.2014
9	The Commissioner for Sericulture Development & Director of Sericulture, Govt. of Karnataka, Bengaluru, Karnataka.	09.10.2014 to 08.10.2017	25012/7/2014-Silk dtd.09.10.2014
Under Section 4(3)(e)			
10	The Principal Secretary, Govt. of Tamil Nadu, Chennai, Tamil Nadu.	20.08.2014 to 19.08.2017	25012/56/99-Silk dtd.20.08.2014
Under Section 4(3)(f)			
11	Smt. Soma Bhattacharjee, IAS, Commissioner of Textiles, Govt. of West Bengal, Kolkata, West Bengal.	03.11.2014 to 02.11.2017	25012/7/2014-Silk dtd.03.11.2014
Under Section 4(3)(g)			
12	The Director of Sericulture, Govt. of Assam, Guwahati, Assam.	20.08.2014 to 19.08.2017	25012/56/99-Silk dtd.20.08.2014
13	The Director of Sericulture, Government of Madhya Pradesh, Bhopal, Madhya Pradesh.	09.10.2014 to 08.10.2017	25012/7/2014-Silk dtd.09.10.2014
14	Smt. Vatsala Vasudeva, IAS, Secretary & Commissioner, Cottage & Rural Industries Dept., Govt. of Gujarat, Ahmedabad, Gujarat.	03.11.2014 to 02.11.2017	25012/7/2014-Silk dtd.03.11.2014
15	The Director, Handloom & Sericulture Department, Govt. of Bihar, Patna, Bihar.	03.11.2014 to 02.11.2017	25012/7/2014-Silk dtd.03.11.2014

Sl. No.	Name and designation of the nominated member	Period of nomination	Notification details
16	The Commissioner of Sericulture, Agriculture & Cooperation (H&S), Govt. of Andhra Pradesh, Hyderabad, Andhra Pradesh.	22.12.2014 to 21.12.2017	25012/7/2014-Silk dtd.22.12.2014
Under Section 4(3)(h)			
17	The Commissioner/ Secretary, Department of Agriculture Production, Govt. of J & K, Srinagar, Jammu & Kashmir.	22.12.2014 to 21.12.2017	25012/7/2014-Silk dtd.22.12.2014
Under Section 4(3)(i)			
18	The Commissioner- cum Secretary, Textiles & Handlooms, Govt. of Odisha, Bhubaneswar, Odisha.	20.08.2014 to 19.08.2017	25012/56/99-Silk dtd.20.08.2014

A list of members of the Board as on 31.03.2015 under different sections is enclosed at **Annexure-II**.

2.4 Staff Strength

The group-wise sanctioned strength and working strength of CSB as on 31st March, 2015 is indicated below :

Group	Sanctioned	Filled	GEN	SC	ST	OBC	PWD	Total
A	811	690	461	129	51	43	6	690
B	1483	1409	905	272	137	74	21	1409
C	1556	1275	633	376	172	73	21	1275
D	7	7	1	1	4	1	-	7
Total	3857	3381	2000	778	364	191	48	3381
Percentage			59.15	23.01	10.77	5.65	1.42	100

2.4.1 Implementation of Reservation Policy

The CSB has been following the reservation policy as per the directions of Government of India for persons belonging to scheduled caste, scheduled tribe and other backward class under direct recruitment and for promotion also. Apart from the above, the reservation policy is also extended to the persons with disabilities for direct recruitment in all groups and for promotion under group 'C' category under the Equal Opportunities, Protection of Rights and Full Participation Act, 1995 of Government of India.

2.4.2 Changes in Senior Level Officers

CSB has filled the vacancies at the level of Directors of Research Institutes, as a part of its administrative and financial responsibility for smooth functioning / monitoring of the sericulture developmental activities. During

the period under report, the following Directors have taken over charge:

1. Dr. V. Sivaprasad, Director has been posted to Central Sericultural Research and Training Institute, CSB, Mysuru and taken over charge on 30-06-2014.
2. Dr. Alok Sahay has taken over the charge of Director, Central Tasar Research & Training Institute, Ranchi on 30-06-2014.
3. Dr. Rakesh Kumar Mishra, has taken over the charge of Director, Basic Tasar Silkworm Seed Organisation, Bilaspur on 07-07-2014.

4. Dr. Subhas V. Naik has assumed the charge as Director at Central Silk Technological Research Institute, Bengaluru on 27.02.2015.
5. Dr. Kanika Trivedy has assumed the charge as Director at SBRL, Kodathi, Bengaluru on 27.02.2015 and she has also taken over the additional charge of CSGRC, Hosur on 28.02.2015.
6. Dr. B. S. Angadi, Director, NSSO, Bengaluru has been posted as Director (Tech), at Central Office, Central Silk Board, Bengaluru and taken over charge on 02.03.2015.
7. Dr. P. Jayaprakash has assumed the charge as Director at NSSO, CSB, Bengaluru on 02.03.2015.
8. Ms. Ishita Roy, IAS, Member Secretary has been posted to HRD Ministry, Govt. of India, New Delhi as Joint Secretary, Higher Education and she was relieved of her duties as Member Secretary from CSB on 09.03.2015 to assume her new post in the HRD Ministry.
9. Ms. Sunaina Tomar, IAS, Joint Secretary (Silk), Ministry of Textiles, Govt. of India has taken over additional charge as Member Secretary, CSB on 9.3.2015.

2.5. Vigilance

Measures taken to strengthen the preventive vigilance by streamlining of procedures :

Measures for preventive vigilance, surveillance and detection have been taken for all those units of CSB that have been considered sensitive. Besides the Chief Vigilance Officer, the Directors/Officers-In-Charge of the Board stationed at different Zones have been entrusted with the task of carrying out surprise inspections of the Units/sensitive areas, clearly demarcating their areas of jurisdiction. The periodical inspection reports are scrutinised for necessary action and where disciplinary proceedings is not required. An Internal Audit Wing, supported

by Zonal Audit Teams has been functioning to conduct the Internal Audit on accounts of the Units. The Directors of the Research Institutes and the officers in the rank of Scientist-D holding independent charge have been delegated with powers to function as Disciplinary Authority in respect of certain categories of officials. 45 complaints/petitions were received and 44 petitions were disposed off as on 31-03-2015 after the *prima facie* case is established.

Observance of Vigilance Awareness Week

In accordance with the guidelines issued by the Ministry/Central Vigilance Commission, New Delhi, the Vigilance Awareness Week was observed at the CSB Headquarters and at all its subordinate units between 27-10-2014 and 01-11-2014 in a befitting manner.

2.6 Public Information Cell - Implementation of Right To Information Act, 2005

Thirty nine CPIOS and 215 APIOS have been designated from both Central Office and field units of CSB. The Public Information Cell has received 182 applications from the public during the year, of which 2 applications were pending for disposal as on 31st March, 2015. 9 appeals were also received and were disposed by 31st March, 2015. Applications received and replies furnished to the citizens are uploaded in CSB website www.csb.gov.in.

2.7 Association with ISC and other countries/organizations

CSB continues to coordinate with the International Sericultural Commission (ISC), Bengaluru, India for the development of sericulture and silk industry in the country. The shifting of ISC office from Lyon (France) to Bengaluru, India, has significantly benefited CSB to engage with many other international organizations, governments and reputed institutions for the development of sericulture and silk industry. As an outcome, action has been

initiated to forge bilateral collaborative programmes with institutions in countries like Bulgaria, Brazil, Uzbekistan, Bangladesh, Italy, Australia, Myanmar, and Romania. Special initiatives have been taken to source assistance from international agencies like SAARC, ITC, UNIDO, ESCAP, FAO, etc.

CSB has extended local support for organizing the 23rd International Congress of ISC on Sericulture and Silk Industry held at Bengaluru during 24th to 27th November 2014, inaugurated by Hon'ble Governor of Karnataka. The event has witnessed the participation of 315 delegates from 17 countries and presentation of 191 oral and poster scientific papers. CSB had deputed 82 scientists and technocrats for presentation of their research papers under various sections of the congress.

2.8 Awards received by CSB & its Institutes

1. Dr. B.S. Angadi, Director (Tech), CSB has received the prestigious Louis Pasteur Award-2014 for his outstanding contribution in sericulture development in the country during 23rd International Congress of ISC on Sericulture and Silk Industry held at Bengaluru on 24th November, 2014. The award was instituted by International Sericultural Commission, Bengaluru, India.
2. Dr. S. Nirmal Kumar has been awarded as 'Best Educationist' by International Institute of Education and Management for his outstanding contribution to the field of education and as 'Star Asia' by International Business Council for his outstanding contribution to the field of education.
3. Central Sericultural Research and Training Institute, Berhampore, West Bengal has been awarded 2nd prize for Tourism and Science Festival, Baruipur, Technology

Week-cum-Krishi Mela-2014, and in 26th Krishi Shilpa "O" Baniija Mela, Chandipur.

2.9 Visit of CSB delegation to other countries

Ms. Ishita Roy, IAS, Member Secretary, CSB in the capacity of Secretary General, International Sericulture Commission, visited Cairo, Egypt during 24th & 25th June, 2014 to conduct the Executive Committee Meeting of ISC.

2.10. Parliament Related Matters

2.10.1 Replies furnished to parliament questions

During the year, CSB has furnished reply materials for 122 (Lok Saba 98 & Rajya Sabha 24) Parliamentary Questions that were related to MoT, as per the break-up given below :

Houses of the Parliament	Budget Session	Winter Session	Total
Lok Sabha	55	43	98
Rajya Sabha	17	07	24
Total	72	50	122

2.10.2 Parliamentary Committee Meetings

1. Parliamentary Committee on Personnel, Public Grievances, Law & Justice from Rajya Sabha Secretariat has visited Bengaluru (Karnataka) on 1st & 2nd February, 2015 for an interaction meeting with Officers of CSB to discuss the issues related with Personnel Public Grievances, Law & Justice & RTI.
2. Parliamentary Consultative Committee under the Chairmanship of Shri Santosh Kumar Gangwar, Hon'ble Union Minister of State for Textiles visited Mysuru (Karnataka) on 8th & 9th February, 2015 for an interaction meeting with Officers of

the MOT & CSB to discuss the issues related to Silk & Sericulture.

3. Third Sub-Committee of the Parliament on Official Language visited CSR&TI, Mysuru on 10th February, 2015 for an interaction meeting with Officers of MOT & CSB and discussed the progress of Official language implementation.

2.11 Policy Initiatives

As a result of action initiated by the CSB to protect the interest of the domestic silk industry, the Govt. of India has taken the policy decisions as detailed below:

2.11.1 Anti-dumping duty on raw silk and silk fabric

The Govt. of India has imposed anti-dumping duty on import of raw silk and silk fabric from China PR. The reference price of US \$ 37.32 per kg fixed for import of raw silk of 2A grade and below was in force till January, 2014. Subsequent to closure of the anti-dumping

duty, based on the request of domestic industry, a fresh case was filed on 8th May, 2014 with a view to safeguard the silk industry. The DGAD has initiated the investigation by issuing notification on 9th December, 2014. Accordingly, the anti-dumping duty with a reference price of US \$ 2.08 to 7.59 per metre has been imposed for import of Chinese silk fabric weighing from 20 - 100 g/m which shall be in force till December, 2016. The imposition of anti-dumping duty on import of raw silk and fabric resulted in significant growth of the sericulture sector in the country.

2.11.2 Customs duty on import of raw silk

During the budget announcement of 2013-14, the basic customs duty on import of raw silk was enhanced from 5% to 15% and the same was notified vide Customs Notification No.12/2013-Customs, dated 01-03-2013. The enhancement of duty on import of raw silk resulted in significant growth of the Indian sericulture sector. The same duty structure was maintained during 2014-15 as well.

Plan Programmes



3.1 CENTRAL SECTOR SCHEMES

3.1.1 Research and Development; Training, Transfer of Technology and IT Initiatives

3.1.1.1 Research and Development

3.1.1.1.1 Introduction

The scientific and technological support extended by the Research and Development Institutes of CSB has helped in enhancing the quality of silk production (in both mulberry and vanya sectors), raising the income level of the rural populace, promoting and preserving the cultural heritage of silk industry. The remarkable growth recorded in quality bivoltine silk production marks as an evidence of the contributions made by the research and development efforts of CSB institutions through Cluster Promotion Programme. This also helped in significant reduction in our dependence on silk imports.

The major institutes engaged in research and development of mulberry sector are Central Sericultural Research & Training Institutes at Mysuru (Karnataka), Berhampore (West Bengal) and Pampore (Jammu & Kashmir), while Central Tasar Research & Training Institute, Ranchi (Jharkhand) and Central Muga Eri Research and Training Institute, Lahdoigarh (Assam) cater to the scientific and technical needs of the Vanya sector. Further, Silkworm Seed Testing Laboratory at Kodathi (Karnataka) provides technical support to the seed sector and Seribiotech Research Laboratory at Bengaluru (Karnataka) carries out seri-biotechnology research. The Central Sericultural Germplasm Resources Centre, Hosur (Tamil Nadu) maintains and provides genetic resources of mulberry silkworm and its host plants. The Central Silk Technological Research Institute, Bengaluru (Karnataka) fulfils the R&D requirements of the post-cocoon sector. The research endeavours are as follows:

3.1.1.1.2 Mulberry Sector

• Central Sericultural Research and Training Institute, Mysuru, Karnataka

The Research & Development programme covering mulberry and silkworm breeding, production and protection, besides, extension and training activities have been taken up to address and cater to the needs of on-farm sectors of mulberry silk in the states of Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Telangana, Maharashtra and Madhya Pradesh. The major achievements are as follows:

Mulberry Crop Improvement, Production and Protection

- Four mulberry hybrids [No. 6, 12, 4 & 10] identified for final yield evaluation out-yielded the V1 [check] variety by over 15%. Ninety-five fungal isolates from root rot infected samples were characterized through DNA profiling and pathogenicity tests. The most virulent strain identified is being utilized for screening the mulberry accessions for resistance to root rot.
- 550 mulberry hybrid seedlings (hybrid progeny of 14 crosses) were short-listed through artificial inoculation under progeny row trial for developing mulberry varieties resistant to root rot and root knot.
- A single window resource data base for 22 mulberry diseases was developed for effective disease management in mulberry.
- Yield data of four crops has been recorded for three test varieties (G4, C-2038 & Suvarna-2) and two checks (Vishala & V1) for identification of suitable high yielding mulberry varieties under All India Co-ordinated Experiment (Mulberry).
- Two crop data of 16 varieties for 57 characters were recorded for development of DUS guidelines for mulberry.

- Seed gardens for new mulberry varieties, G2 for chawki rearing (16 acres) and G4 for late age rearing (17 acres) were established to popularize the varieties and to take up plantation in about 300 acres in the field.

Silkworm Crop Improvement, Production and Protection

- The productive bivoltine single hybrid CSR16 x CSR17 with high cocoon shell percentage (23-24%) and raw silk recovery (18.0-19.0%), was evaluated with 5.17 lakh dfls through 2,132 farmers of Southern States. An average yield of 64.30 kg/100 dfls was recorded.
- Three productive bivoltine hybrids viz., S8 x CSR16, SSBS 5 x SSBS 6 (single hybrids) and FC3 x CSR17 (three-way cross) having an yield potential of 70-80 kg per 100 dfls, with high cocoon shell percentage (23-24%) and raw silk recovery (19-20%) have been developed.
- Two BmNPV tolerant bivoltine hybrids, 21 x 35 and [(21 x 118) x (62 x 87)] were developed through marker assisted selection programme utilizing BmNOX protein.
- Four thermo-tolerant silkworm lines were developed through SSR markers (LFL0329 & LFL1123).
- Four polyvoltine lines tolerant to high temperature and BmNPV were short-listed and are currently at F10 generation.
- L14, polyvoltine silkworm breed producing international grade silk was improved for cocoon colour and size uniformity, survival (disease resistance/tolerance), productivity, and diapause reduction and trimoulting behaviour. The field trial of hybrid with improved lines recorded cocoon yield upto 63kg/100 dfls.

- Cauvery Gold (L14 x S8), an improved crossbreed with higher productivity & superior fiber quality was developed utilizing improved L14 lines and new bivoltine male components.
- The expression of MetAP2 gene of *Nosema bombycis* was observed to be inhibited by Fumagillin and could be utilized for therapeutic control of pebrine infection in silkworm.
- SERI DIS – web page for the data collection and monitoring of silkworm diseases in seed and commercial crops was developed and the programme is being conducted in Maharashtra and other southern states.
- The biocontrol agent, *Nesolynx thymus* (411 lakh numbers) was produced and supplied for uzi fly control and ladybird beetles (1.25 lakh numbers) for the control of Mealy bug.
- A machine for effective washing and disinfection of the rearing trays has been developed for the benefit of chawki rearing centres and farmers.

Sericulture Extension

- 2241 MT bivoltine raw silk (about 60% of total bivoltine raw silk production in the country) was produced in 106 clusters in Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Telangana and Maharashtra through rearing of 213.6 lakh dfls with an average cocoon yield of 68.2kg/100 dfls. 20174 acres of mulberry plantation was taken up by 14505 farmers.
- Institute Village Linkage Programme (IVLP-Seri Model Village) was re-initiated at 11 locations in Andhra Pradesh, Karnataka, Tamil Nadu, Telangana and Maharashtra. Rearing of 3.59 lakh dfls of bivoltine hybrids resulted in improvement of cocoon yield by 8.5%.

- 1863 farmers from Northern Karnataka and adjoining states of Telangana and Maharashtra were sensitized with new technologies and products including new G2 mulberry variety and G11 x G19, a silkworm double hybrid.
- 83900 dfls were chawki reared in 32 batches and supplied to 194 farmers covering 65 villages through model CRCs. Cocoon yield ranged between 67.4 - 81.5 kg/100 dfls.
- 41220 sericulturists were sensitized with new technologies through 830 Extension Communication Programmes in mulberry cultivation, silkworm rearing and crop protection.
- An entrepreneurial development programme sponsored by the National Research Development Corporation, Govt. of India was initiated for the production and supply of cocoon harvesters developed by the institute.

Patents and Commercialization

- Six patent applications (preparation of pupa powder, culturing of Cordyceps, use of spent silkworm moths, pupae for human food, preparation of pupae oil and preparation of silkworm powder) were filed to National Biodiversity Authority for clearance.
- Eight technologies, viz., Poshan, Navinya, Ankush, Sampurna, PVC chawki stand, cocoon harvester, chawki leaf chopper and hand operated silkworm separator were commercialized through NRDC with eight firms.
- MOUs were entered with the manufacturers of Samruddhi, Serimore and Sanitech Super for the commercial utility after thorough technical evaluation.

- Consultancy projects for validating the products/technology were initiated for Seri Swacch and Seri Fit with manufacturers.

Human Resource Development

- 499 beneficiaries were trained in 26 batches on cocoon handicrafts, mulberry cultivation and seed multiplication, quality bivoltine cocoon production, commercial chawki rearing, mulberry & silkworm diseases and pest management under Integrated Skill Development Scheme (ISDS), Ministry of Textiles, Govt. of India.
- 751 persons were trained under structured and need-based programmes. This includes 3 months training for 51 entrepreneurs/CRC owners and one month training for 76 entrepreneurs in CRC activities.
- One month Orientation Training Programme in Sericulture was organized for three Japan Overseas Cooperation Volunteers (JOCV) working in Andhra Pradesh, Tamil Nadu and Karnataka.
- A six week special training programme on sericulture and silk industry sponsored by Indian Technical & Economic Cooperation of Govt. of India was organised with 14 trainees from Bangladesh, Philippines, Uganda, Thailand and Egypt.

Achievements of Regional Sericultural Research Stations

RSRS, Anantapur, Andhra Pradesh

- 1977.6 acre with 1264 farmers have been covered under mulberry plantation with new varieties.
- Soil testing/analysis was conducted for 337 samples and soil correction measures were recommended.
- Evaluation trial of CSR16xCSR17 conducted with 1.43 lakh dfls through 509 farmers

recorded an average cocoon yield of 64.04 kg /100 dfls.

- Transfer of Technology (TOT) programmes were conducted on INM, Poshan, Navinya, IPM & composting with 525 farmers.
- Uzi infestation was reduced to < 4% from 25-40% with a supply of the biocontrol agent, *Nesolynx thymus* (1119 sachets/ 539 farmers/31 villages).
- Rearing of 26,650 bivoltine hybrid layings with 152 farmers under IVLP recorded an average cocoon yield of 56.8 kg/100 dfls with an improvement of 8.34%.
- 1700 farmers were sensitized with new sericulture technologies through organizing two workshops and 240 extension communication programmes.
- Rearing of 48.89 lakh dfls of bivoltine hybrids with 17,117 farmers under CPP recorded an average cocoon yield of 65.4 kg/100 dfls.
- 1230 farmers were trained under TUP in 82 batches and 108 persons under ISDS.

RSRS, Chamarajanagar, Karnataka

- Seri-Lac culture model was carried out to assess the feasibility of lac production in mulberry plantation. First crop results showed yield of 200-250kg lac/acre/year resulting in realizing an additional income of Rs. 60000-75000.
- Adoption of Affordable Micro-Irrigation Technology (AMIT) in tree mulberry cultivation (2.4x2.4m) resulted in an increase in mulberry leaf yield to 3060kg/acre compared to 2380kg/acre in bush plantation.
- Uzi infestation was limited to 4.14% from 10.06% with supply of bio-control agent, *Nesolynx thymus* to 68 farmers.

- Reduction of Tukra Mealy Bug infestation from 20% to 7.42% was achieved through *S. coccivora* beetle production and supply (77 boxes/54.5 acres).
- 180 farmers in 12 batches under TUP and 59 persons under ISDS were trained.

RSRS, Kodathi, Bengaluru, Karnataka

- Plantation with new mulberry variety was taken up in 10133.6 acre with 6934 farmers.
- Soil testing/analysis was conducted for 214 samples and soil correction measures were recommended.
- Rearing of 36750 dfls of CSR16 x CSR17 with 145 farmers recorded an average cocoon yield of 61.53kg/100 dfls under evaluation trial.
- 77.29 lakh bivoltine hybrids dfls were reared in 36 clusters under CPP and an average cocoon yield of 66.41kg/100 dfls were recorded.
- Transfer of Technology (TOT) programmes were conducted for 344 farmers on INM, Poshan, Tukra, Navinya, IPM & composting.
- Rearing of 38800 bivoltine hybrid dfls under IVLP recorded an average yield of 61.23kg/100 dfls with an improvement of 12.79%.
- 9590 farmers were sensitized through 244 extension communication programmes on various technologies.
- 765 farmers in 48 batches were trained under TUP and 81 persons under ISDS.

RSRS, Salem, Tamil Nadu

- Natural enemies of Thrips were collected from farmers' gardens of Karnataka and Tamil Nadu towards identification and recommendation of most effective biocontrol agent.

- On-station trials revealed the superiority of new ICB (NDV6 x CSR51), single hybrid (D2 x D13) and double hybrid (DH3) in terms of cocoon yield and improved silk quality.
- On-farm trials of new productive bivoltine hybrid (S8 x CSR6) and NPV tolerant hybrid (MASN4 x CSR2) recorded an average cocoon yield of 82 kg and 65.2 kg/100 dfls, respectively.
- Papaya Mealy bug management was undertaken with 486 units by mass multiplication and supply of *Acerophagus papayae*.
- Mass multiplication of biocontrol agents *Cryptolaemus* (48 units) and *Scymnus* (108 units) to control tukra; *Trichogramma* (157 cc) and *Bracon* (245 pockets) to manage leaf webber and *Chrysoperla* (66000 nos.) for Thrips were produced and supplied.
- 222 pouches of *Nesolynx thymus* were released for Uzi Fly management in rearing houses.
- Soil testing was conducted for 480 samples and soil correction measures were recommended.
- TOT programmes were conducted on INM, Poshan, Navinya, IPM & composting for 443 farmers.
- Rearing of 1,17,487 dfls of bivoltine hybrids with 200 farmers under IVLP resulted in an average cocoon yield of 71.1kg/100 dfls with an improvement of 12.9%.
- 13066 farmers were sensitized on various new technologies through workshops and 240 extension communication programmes.
- Rearing of 60.36 lakh dfls of bivoltine hybrids in 28 clusters in Tamil Nadu and

Kerala under CPP recorded highest cocoon yield (75.4kg/100 dfls) in the country.

- 1394 farmers were trained in 93 batches under TUP and 92 persons under ISDS.

- **Central Sericultural Research and Training Institute (CSR&TI), Berhampore, West Bengal**

CSR&TI, Berhampore and its nested units have made significant contributions for the improvement of sericulture in eastern and North-eastern states through research and development interventions. The research was mainly focused on regional requirements. During the period, 37 research projects were conducted addressing problems in various aspects of sericulture industry. Major achievements made during the year are as follows:

Mulberry improvement and productivity

- A mulberry variety C-9 with better responsiveness to fertilizer applications was developed.
- Mulberry varieties such as C-108 (15.4 MT/ha/crop), C-384 (9.7MT/ha/crop) and C-212 (9.2MT/ha/crop) with better leaf yield under low temperature than the control S-1635 (8.7MT/ha/crop) was developed.
- Tested four new mulberry varieties under All India Coordinated Experimental Trial on Mulberry (AICEM) along with national and local control varieties in 7 test centres and the variety C-2038 was found yielding better in all the test centres except at RSRS, Kalimpong (hills of West Bengal), where Tr-23 registered the highest leaf yield.
- Moderate tillage with grass cover was found having the maximum capacity of “Carbon Capturing Efficiency” over the existing practices across seasons.

- Foliar application of cationic micronutrients based on their availability in soil has been worked out for eastern and North-eastern India.
- C-2028, a mulberry variety with tolerance to water logged conditions has been popularized in eastern and North-eastern states.
- Assessment, development and management of mulberry cultivation in West Bengal have been initiated through satellite data acquisition in collaboration with North Eastern Space Applications Centre (NESAC), Shillong.

Mulberry protection

- Causal organisms of root rot disease of mulberry in the Gangetic plains of West Bengal have been isolated and identified with the help of Indian Type Culture Collection, Indian Agricultural Research Institute, New Delhi and National Fungi Culture Collection of India, Pune.
- A calendar for application of fungicide was developed and uploaded along with disease forewarning in the institute's website www.csrtiber.res.in for control of mulberry diseases in eastern and North-eastern India.
- Three additive genes controlling bacterial leaf spot resistance in mulberry were identified.

Silkworm improvement and productivity

- Three bivoltine, two multi x bivoltine and two multivoltine silkworm hybrids authorized for commercial utilization were popularized among the farmers of eastern and North-eastern states through rearing of 10 lakh dfls. The new hybrids showed significantly higher cocoon yield than the control hybrids.

- Shuttle breeding approach was adopted for development of improved silkworm breeds utilizing oval and dumbbell silkworm breeds.
- Eight breeding lines of multivoltine with high shell percentage (>17%) and high neatness (>85 p) were developed.
- Using *Id* inhibitor carrier breeds, multivoltine breeds with higher shell weight were developed.

Silkworm protection

- To ensure better efficiency against various diseases, a new silkworm room disinfectant 'Ghar Sodhan' has been formulated with cost-benefit ratio of 1:5.19.

Cost reduction

- An efficient, economic & eco-friendly weed mower-cum-shoot harvest/pruning machine has been developed and it is being validated in the nested units and at farmers' level.
- Popularisation of irrigation water requirement at 50% saving under micro-irrigation system has been taken up in the field for effective use and conservation of irrigation water. Popularization of 'cost effective drum kit irrigation system' is under progress in the field.

Technology transfer

- Five technologies were popularized among 2083 farmers in eastern and North-eastern region.
- Botanical pesticides for management of major mulberry pests were popularized.
- Foliar application of KCl (1%) in mulberry under rainfed condition was popularized for obtaining higher leaf yield.
- Application of 0.015% Thiamethoxam is taken up for management of white fly.

Extension communication programmes

- Under ECP, 73 Awareness Programmes (3599 farmers), 56 Audio visual Programmes (2599 farmers), 59 Exhibitions (4307 farmers), 61 Field Days (2115 farmers), 68 Group Discussions (2382 farmers), 38 Technology Demonstrations (1291 farmers) and 7 Resham Krishi Mela & Technology workshops (2603 farmers) were organized.

Bivoltine cluster promotion programmes

- Fifteen bivoltine clusters at West Bengal (4), Odisha (2), Bihar (1), Assam (3), Manipur (2), Mizoram (1), Nagaland (1) and Tripura (1) have been successfully organized in 8 states under eastern and North-eastern zones.

Human resource development

Various human resource development programmes were organized for Transfer of Technology for sustainable development of sericulture. A total of 958 persons were trained (PGDS-44, skill updation programme-112, integrated skill development scheme-405, need-based training programmes-397). Regular training was imparted to farmers/participants on different aspects of sericulture, viz., mulberry cultivation, silkworm rearing and disease and pest management etc., developed by the Institute.

Publications

- 46 research articles, 8 books, 15 extension manuals and 76 technical bulletins/leaflets were published.
- 11 research abstracts were published in national and 5 in international journals presented in seminars/symposia conferences.

Official language implementation

- Awarded 3rd prize by Shri Keshari Nath Tripathi, Hon'ble Governor of West Bengal for outstanding contribution in official language (Hindi) in eastern and North-eastern states.

Achievements of Regional Sericultural Research Stations

RSRS, Kalimpong, West Bengal

- Accredited with ISO 9001:2008 certification.
- Better performance of mulberry varieties TR-23 (10.6 MT/ha/yr) at RSRS, Kalimpong and C-2038 (19.1 MT/ha/yr) at Ambari-Falakata Sericulture Farm has been recorded under the All India Coordinated Experimental Trial.
- 690 muga seed dfls produced and supplied to DoT (Seri), West Bengal and MSSO, Guwahati for further multiplication.
- Various HRD programmes were organized for Transfer Of Technology (TOT) and 64 persons were trained (ISDS-28, TTP-06 and FTP-30). Regular trainings were also imparted to the farmers/participants on different activities of sericulture.
- Under technology dissemination programme, 156 farmers/seri-stakeholders were benefited with improved sericulture technologies through resham krishi mela, field days, awareness programmes and group discussions, technology dissemination, audio-visual programmes and exhibition.

RSRS, Koraput, Odisha

- Accredited with ISO 9001:2008 certification.
- Implementation of Institute Village Linked Programme resulted in increase in mulberry leaf yield by 8.8% over control (9.8 MT/ha/year) at farmers' level.

- Raised 19500 saplings of S-1635 and C-1730 mulberry varieties were raised and 5000 S1635 and 6000 C1730 saplings were supplied to DoS, Odisha for expansion of mulberry acreage.
- Survey and surveillance of mulberry foliar diseases at farmer's level facilitated taking up appropriate precautionary measures.
- Beneficiary Empowerment Programme were conducted for 75 sericulturists of Odisha and 15 farmers were trained under ISDS at Denkikote Block, Keonjhar, Odisha.

RSRS, Jorhat, Assam

- Accredited with ISO 9001:2008 certification.
- Predatory efficacy of Coccinellid predator, *Scymnus posticalis* Sicard was investigated to develop appropriate strategy for controlling white fly infestation on mulberry. Mass culture of mealy bug on potato sprouts and pumpkin is under progress.
- Technological interventions under IVLP resulted in 12.6% gain in leaf yield and 18.5% gain in cocoon yield at farmers' level.
- Out of the five mulberry varieties evaluated at RSRS, Jorhat and REC, Imphal under AICEM programme, C-2038 showed highest leaf yield.
- Under popularization of silkworm hybrids, 1.7 lakh dfls of FC1 x FC2 and SK6 x SK7 silkworm hybrids were supplied to 2237 farmers during autumn and spring seasons.
- 3997 stakeholders were sensitized through audio-visual programme, exhibition, field day, vichar gothi and krishi mela. Besides, 742 farmers were trained on mulberry and silkworm technologies

and disease & pest management practices. ISDS trainings were also organized.

- Farmers' directory covering 805 farmers was published besides publishing 6 technical bulletins and 5 pamphlets.

RSRS, Ranchi, Jharkhand

- Under AICEM test trials of mulberry, C-2038 variety performed better.

- **Central Sericultural Research and Training Institute (CSR&TI), Pampore, Jammu & Kashmir**

The Institute with its network of 3 RSRSs and 18 extension centres is catering to the needs of sericulture development in North and North-western region of India. Under bivoltine production programme, 49 clusters and 5 Institute Village Linkage Programmes are operational. The achievements of the institute during 2014-15 are as follows:

Mulberry improvement, production and protection

- Evaluation of mulberry varieties/genotypes raised in germplasm bank under temperate conditions has revealed that tropical genotypes flowered one month earlier than temperate, but their fruit and seed weights were low compared to temperate genotypes.
- The mulberry variety S-140 performed better than Goshorami in terms of yield, frost damage and biochemical parameters under temperate conditions of Jammu and Kashmir. Leaf yield of S-140 ranged from 21.9 to 29.5 MT/ha/year as compared to Goshorami (11.2 to 17.7 MT/ha/year) in dwarf type plantation.
- Seasonal spore population study on isolation of native *Arbuscular mycorrhizal* (AM) fungi and bacterial endophytes, revealed that AM spore population was

moderate in autumn season (19-28 spores/10g soil) and was low in winter (10-15 spores/10g soil). Out of 10 bacterial isolates, CSBPB04 is the single isolate that gave positive result for side-rophore activity, while the other isolates CSBPB03 and CSBPB05 showed positive results for starch utilization.

- Integrated nutrient management approaches increased organic carbon (0.76%), Fe (28.45 ppm), bacterial (1.58×10^6 CFU/g) & fungal content (2.4×10^5 CFU/g) in the soil compared to control (0.62%, 11.00 ppm, 1.06×10^6 CFU/g & 0.8×10^5 CFU/g, respectively).
- A diagnostic guide to common natural enemies of mulberry crop pests in Kashmir valley has been prepared for easy identification.
- Under the project “Exploration of Natural Enemies for Management of Insect Pests and Diseases of Mulberry”, the activity and seasonality of 3 parasitoids, viz., *Perilampus* sp., *Campoletis* sp. and *Brachymeria lasus* (Walker) were reported for the first time in Kashmir.
- Three powdery mildew feeding Coccinellids, viz., *Halyzia sancriata* Mulsant, *Propylea luteopustulata* (Mulsant) and *Stethorus aptus* Kapur were also reported for the first time from Kashmir.
- On-farm demonstration of Integrated Pest and Disease Management Module (IPDM) in Kashmir region revealed 23 to 40 percent reduction in major insect pests and diseases over control.
- Under the project ‘Women Empowerment’, adoption of sericulture technologies has recorded an increase of 12 kg over the average cocoon yield leading to an increased income level by Rs. 5257.
- The technology demonstration on fertilizer application for scattered mulberry trees

under temperate conditions of Kashmir showed an improvement of 14.46% leaf yield in the field.

Extension

- 84.69 MT of bivoltine raw silk were produced through 49 clusters.
- Under popularization of authorized hybrids, Gen3 x Gen2, APS45 x APS12, APS5 x APS4, SK6 x SK7, Dun17 x Dun18, CSR46 x CSR47 and CSR (DH) in North-West India, showed better performance over CSR double hybrid (FC1 x FC2).
- Two krishi melas have been organized, one each in Uttarakhand and Himachal Pradesh, wherein more than 2000 farmers took part and the latest technologies on sericulture were disseminated and discussed.
- Under Catalytic Development Programme, one Community Based Organization (CBO) of 200 sericulture farmers was developed in Tral Tehsil in association with Sericulture Development Department, Pulwama. One Cluster Level Association (CLA) comprising of 10 Sericulture Cluster Groups (SCGs) of 20 farmers each was formed.

Training

- 2645 DoS staff and farmers across North-West India were trained under various training programmes. Further, 761 unemployed youth were also trained under Integrated Skill Development Programme.

RSRS, Miransahib, Jammu & Kashmir

- Out of 10 mulberry germplasm accessions maintained at germplasm bank, biochemical parameters of Koku-20 and Koku-21 showed higher total protein content; BC-259 showed higher

carbohydrate content, under sub-tropical conditions of Jammu division.

- Five top ranking mulberry genotypes identified for spring rearing under sub-tropical conditions of Jammu are S-1635, S-146, C4, AR12 and Sujapur local. The Station has been awarded ISO 9001: 2008 Certificate for Research, Extension, Consultation and Human Resource Development.
- Under evaluation and characterization of mulberry germplasm accessions at RSRS, Jammu, the leaf yield of top five mulberry varieties where S-1635 (0.789kg/plant), S-146 (0.585kg/plant), C-4 (0.564 kg/plant), AR-12 (0.509kg/plant) and Sujapur Local (0.496Kg/plant) during spring 2014.
- Application of Triazole compound Paclobutrazol (10-25 mg L⁻¹) was found effective in improving the survivility of saplings in nursery under water stress conditions.
- Vishala showed 71-96% survivility under on-farm trials conducted at different parts of Jammu.
- 60-65% improvement was obtained in cocoon productivity with the adopted farmers during spring and autumn crop 2013 and 2014 by adopting improved techniques of silkworm rearing and disease management.

RSRS, Sahaspur, Uttarakhand

- More than 90% survivility was recorded in S-140 (rechristened as PPR-140) mulberry variety and the saplings were supplied to DoS, Uttarakhand.
- Under "Identification of autumn specific silkworm breeds/hybrids", highest pupation rate of 81.50% was recorded in APS-9 x

APS-5, followed by 78.05% in APSHT-05 x CSR-51 compared to 69.10% in control (SH-6 x NB4D2) in late spring. In late autumn rearing, highest pupation rate of 82.35% was recorded in BRO-2 x APSHT-05, followed by 80.13% in CSR-46 x APS-9, against 77.27% in control (SH-6 x NB4D2).

- Production and supply of the bio-fertilizers by utilizing the local strains of nitrogen fixing bacteria *Stenotrophomonas maltophilia* resulted in improvement of leaf yield at farmers' level.
- Under AICEM trial, highest leaf yield was recorded in S-146 (3.34 MT/ha/yr) and C-2038 (3.33 MT/ha/yr) during spring and in Tr-23 (8.62 MT/ha/yr) during autumn season.
- Revalidation trials of mulberry pruning technologies revealed leaf quality improvement and reduction of disease incidence in the mulberry crop and resulted in successful silkworm rearing during autumn season.

RSRS, Ghumarwin, Himachal Pradesh

- Plantation of S146, S1635, TR10, S34, S36, and Vishala mulberry varieties has been taken up at Bhadrog Farm.
- 25000 dfls were chawki reared under CPP, and distributed to 300 farmers during spring and recorded 51.97 kg/100 dfls, while during autumn, 7350 dfls were chawki reared and distributed to 246 farmers. An average cocoon yield of 36.50 kg/100 dfls has been recorded.
- 898 farmers were sensitized on latest technologies in mulberry cultivation and silkworm rearing through extension communication programmes.

- **Central Sericultural Germplasm Resources Centre (CSGRC), Hosur, Tamil Nadu**

This institute is recognized as a National Active Germplasm Site for mulberry and silkworm with a mandate for conserving and utilizing the Seri-biodiversity of India in an effective manner. CSGRC encourages other research organizations and institutions to conduct research in silkworm and mulberry by supplying required resource material to them. Achievements of CSGRC during the year are as follows:

- 1269 mulberry germplasm accessions are under conservation in *ex situ* field gene bank. 34 new mulberry and six silkworm germplasm stocks were introduced during the year.
- 458 silkworm germplasm stocks (77 multivoltine, 361 bivoltine and 20 mutants) were maintained through scheduled rearing.
- 17 mulberry accessions (MI-0214, MI-0768, ME-0016, MI-0025, MI-0332, ME-0244, ME-0107, MI-0699, MI-0026, MI-0256, MI-0477, ME-0125, MI-0298, MI-0762, MI-0437, MI-0763, MI-0314) were identified for higher water use efficiency (WUE).
- 23 mulberry accessions (MI-0139, MI-0178, MI-0573, MI-0416, MI-0193, MI-0533, MI-0256, MI-0332, MI-0768, MI-0762, MI-0477, MI-0622, MI-0226, MI-0657, MI-0763, MI-0346, MI-0025, MI-0699, MI-0314, MI-0214, MI-0670, MI-0827, MI-0161) were identified for higher Nitrogen Use Efficiency (NUE).
- 20 mulberry accessions (MI-0437, MI-0376, MI-0327, MI-0670, MI-0657, MI-0012, MI-0476, MI-0242, MI-0129, MI-0245, MI-0161, MI-0763, MI-0716, MI-0310, MI-0145, MI-0497, MI-0499, MI-0027, MI-0139 & MI-0764) were identified for saline tolerance and 18 accessions (MI-0226, MI-0670, MI-0836, MI-0652, MI-0762, MI-0449, MI-0764, MI-0437, MI-0716, MI-0822, MI-0310, MI-0248, MI-0702, MI-0190, MI-00643, MI-0499, MI-0788 & MI-0466) for alkaline tolerance.
- Micro plot technique was introduced in mulberry for stress tolerance evaluation. Low leaf necrosis and Na⁺/K⁺ ratio were found associated with salinity tolerance while chlorophyll stability linked to alkalinity tolerance.
- 150 core mulberry accessions were identified based on molecular analysis and their correlation with quantitative and qualitative traits. E-Herbarium was prepared for unique mulberry accessions.
- 22 new mulberry germplasm accessions were characterized for morphological, reproductive and anatomical descriptors.
- 125 mulberry accessions were conserved in cryo gene bank.
- Eight multivoltine and two bivoltine silkworm accessions were evaluated for post-cocoon parameters and 37 accessions were evaluated for fibroin/sericin content.
- 10 top bivoltine silkworm germplasm stocks were identified and evaluated for important economic characters during spring and autumn seasons at eight selected centres across the country.
- 71 mulberry accessions and 196 silkworm germplasm stocks were supplied to various R&D institutions.
- Mulberry germplasm catalogue (Vol-V) was published with data on morphology, reproduction, leaf anatomy, growth and yield, propagation, biochemical, disease incidence and passport information of 150 accessions.

- **Silkworm Seed Technology Laboratory (SSTL), Kodathi, Bengaluru, Karnataka**

Development of technologies for improvement of silkworm seed sector, monitoring of silkworm diseases, transfer of technologies and imparting training to the stakeholders is the mandate of SSTL, Kodathi. The important achievements during the year are as follows:

- Evaluation trials confirmed the safe employment of 4, 6, 8 and 10 month hibernation schedules for preservation of the bivoltine silkworm breeds SK6 and SK7 and the tropical univoltine race, Barpat.
- A technology for preservation of eri silkworm eggs upto 11-12 days without affecting the hatching and rearing performance, by adopting double step preservation method was developed.
- Photoperiodism manipulation studies showed maximum moth emergence between 5 to 8 AM in trivoltine (97.55%) and bivoltine (89.68%) tasar cocoons.
- Nuclear seed (P4) of Nistari (Chalsa, Balapur and Debra) and new multivoltine breeds, viz., M12W, M6DPC and MCON1 were maintained true-to-breed characters and 2680 basic seed dfls were supplied.
- The embryo test of the bivoltine pure and hybrid seed (28 batches of 241 lots) received from different units of DoS and CSB were conducted and probable dates of release of layings for incubation were provided.
- Solar Passive Energy Model (SPEM) rearing house has been test verified for its suitability to conduct silkworm seed crop rearing through training programmes. Optimum temperature (21-29°C) and humidity (47-89%) required for silkworm can be easily maintained in SPEM rearing house.

- Silkworm disease monitoring surveys were conducted in co-ordination with state sericulture departments of Karnataka, Andhra Pradesh and Tamil Nadu 398 bivoltine and 1457 multivoltine samples were tested.
- Demonstration of technologies on seed crop rearing, silkworm disease management, egg production and handling, long term preservation of crossbreed eggs were taken up for 605 officers/technical personnel, seed farmers and registered seed producers of Karnataka, Andhra Pradesh, Tamil Nadu and NSSO.
- 424 sericulture personnel of DoS/CSB and farmers were trained on various aspects of seed technology under various training programmes.

- **Seribiotech Research Laboratory (SBRL), Kodathi, Bengaluru, Karnataka**

Using the state of the art facilities, Seribiotech Research Laboratory, Kodathi carries out cutting-edge research on silkworms and their host plants through a multi-disciplinary approach. The institute has already made its mark on development of transgenic silkworm, identification and utilization of molecular markers associated with productivity and disease resistance, elucidation of gene functions, easy and precise detection of pathogens and diversification of the usage of silk proteins to new avenues with considerable economic and health care benefits. The major achievements made during the year are as follows:

- PCR-based techniques were developed for reliable and early detection of major pathogens of the mulberry silkworm, *Bombyx mori*. These techniques were demonstrated to scientists of various research institutes for field utilization.
- NPV tolerant bivoltine *B. mori* lines (improved CSR2), viz., MASN4, 6 and 7,

developed under Marker Assisted Breeding Programme, were tested under limited field trial. Hybrids of MSN4 x CSR4 and CSR4 x MASN 4 performed well with an average cocoon yield of 65 kg/100 dfls against 60 kgs of CSR2 hybrids.

- The vitellogenin receptor (VgR) genes of *Bombyx mori* and *Samia ricini* were characterized to utilize it as a potential marker for screening silkworm parental stocks to develop high fecundity commercial hybrids.
- 30% enhancement in NPV tolerance was found in NPV tolerant transgenic lines of CSR4 and CSR27 when reared upto BC₄F₁₀ generation.
- The full length cloning and sequencing of the DNA polymerase gene of the Indian isolate of *B.mori* Densovirus-2 was done.
- The silkworm breeds APHTP-5, APS-9 and BBE198 were identified as potential parents for developing BmDENV-2 resistant silkworm hybrids as they possessed BmDENV-2 resistant (*nsd-2*) gene.
- Micro-array analysis of hemocytes after uzi fly infection in *B.mori* revealed upregulation of detoxification genes such as carboxyl esterase, hydrolases, glutathion transferase, alcohol dehydrogenase and peptidase inhibitor indicating activation of detoxification mechanism in hemocytes.
- Role of hemocytes in humoral immunity as well as cellular activation of encapsulation events against the uzifly maggot in *Bombyx mori* was revealed by the presence of host-response proteins like immune - inducible protein, cell adhesion protein and hemocyte-specific integrin alpha subunit 1 in hemocytes after infestation of uzi fly.

- Proteomic studies in microsporidian infected *B. mori* larvae showed enhanced expression of host-response proteins such as hemocytin, antichymotrypsin, chymotrypsin inhibitor, prophenol oxidase sub-unit 2, SERPIN 9 and arylphorin revealing activation of humoral immune system in hemocytes.
- An infectious flacherie virus has been identified from flacherie-infected tasar silkworms based on RdRp gene primers and has been designated as AmIFV.
- Cloning, sequencing and phylogenetic analysis of MetAP II gene of *Nosema bombycis* showed similarity with the MetAP II gene of *Nosema cerenae*.

3.1.1.1.3 Vanya Sector

- **Central Tasar Research and Training Institute (CTR&TI), Ranchi, Jharkhand**

The Central Tasar Research and Training Institute, Ranchi in Jharkhand is the premier research institute, endowed with responsibility to generate useful technologies and their effective transfer in field as per the requirements of tropical and oak tasar sectors. It is providing support to all Tasar growing States in the Country through its network of eight Regional Tasar Research Stations, 10 Research Extension Centres and three P4 stations with ultimate objective of providing techno-economic empowerment to stakeholders, mostly tribals. Besides carrying out research on different aspects of tasar culture, the institute undertakes on molecular level research unearth intricacies of tasar silkworm for achieving higher productivity and quality. The achievements of the institute and its nested units during the year are as follows:

Host plant improvement, production and protection

- 16 hybrid combination of *Terminalia sp.* were developed and 29 F₁ seedlings were isolated, which are under multiplication through clonal propagation for further evaluation.
- Suitable package for propagation and cultivation of new host plant, *Lagerstroemia speciosa* has been standardized.
- Bioassay studies revealed that larval duration was slightly higher in *L. speciosa* as compared to *Terminalia arjuna* and *T. tomentosa* whereas ERR was almost similar on all the food plants.

Silkworm Improvement, Production and Protection

- CTR-14 was evolved for high fecundity (>250 eggs/df). The multilocational trial of evolved silkworm was conducted at five RTRSs/RECs under varied agro-climatic conditions.
- F1 of eco-races Laria x Raily showed better performance on Sal with respect to cocoon yield and qualitative traits.
- The germplasm of 12 eco-races of tropical tasar silkworms - Daba, Sukinda, Sarihan, Modal, Modia, Raily, Korbi, Dhurki, Barharwa, Netarhat, Baraf and Laria are being maintained.
- AmCPV tolerant of Daba BV and Daba TV of *Antheraea mylitta* has been developed and is under field evaluation.
- Cold temperature treatment (20-22° C) to diapausing pupae for 15 days during the months of April and May delayed the onset of moth emergence by 10-15 days.
- Preliminary works on isolation and characterization of sericin from tasar cocoon have been taken up. The anti-

tyrosinase activity of sericin indicates its possible use for cosmetic purpose.

Post-cocoon Technologies

The portable motorized reeling charkha and reeling-cum-spinning machines developed by the institute were subjected to multi-locational trials. The peak performance of motorized reeling charkha was 296 g/4h and the yarn produced is of 60/70 denier suited for weft. While the peak performance of reeling-cum-spinning machine for 60-70 denier yarn on two ends is 85 g/4h, the yarn thus produced is recommended for both warp and weft.

Patent

A patent (No. 264864 dated 27.01.2015) has been granted to the institute for “A Drug Formulation for the control of Pebrine disease in Tasar Silkworm”.

Achievements of Regional Tasar Research Stations

RTRS, Jagdalpur, Chhattisgarh

Technical support is provided to DoS, Chhattisgarh for conservation, multiplication and popularization of local eco-race Raily. A study was carried out on economic and morphometric characters of cocoons and moth, reproductive potential, life history, life cycle, natural multiplication, pest and predators of Raily. IVLP was initiated with 100 farmers.

RTRS, Baripada, Odisha

Technical support was extended to DoS, Odisha in conservation and evaluation of tropical tasar silkworm races, including Modal eco-race, in Similipal Biosphere Reserve. In order to conserve the dwindling local eco-race Sukinda under *ex situ*, 1200 good cocoons were kept in the grainage for multiplication and broadening of its genetic base. A study was carried out for standardization of second crop of Daba TV. IVLP was initiated with 100 farmers.

RTRS, Dumka, Jharkhand

Work on conservation of local eco-race Sarihan was carried out and rearing of 492 dfls recorded a harvest of 14235 cocoons @ 29 cocoons/dfl. These cocoons were preserved for grainage purpose. Besides, the Station also extended technical support to DoS, Jharkhand.

RTRS, Bhandara, Maharashtra

Work on conservation and multiplication of eco-race Bhandara was continued. The summer preservation of cocoons, I, II & III grainages and rearing during I, II & III crops were conducted for this eco-race. Based on strategy developed for conservation of eco-race Bhandara, a joint project was prepared with DoS. RTRS provided technical support to DoS, Maharashtra and BAIF and associated with DoS in preparation of project for development of tasar sericulture in Maharashtra. Under the Cluster Development Programme, a baseline survey at Nishti was conducted and technical guidance was provided to farmers. 25 farmers were trained in tasar rearing technology. 350 farmers attended awareness programme on Seed Act and 99 seed farmers applied for registration.

RTRS, Warangal, Telangana

A survey was carried out in core zone for conservation of eco-race, Andhra Local of *Antheraea mylitta* Drury through natural regeneration methods. 841 wild cocoons of Andhra Local were collected and preserved. Under Cluster Promotion Programme, 99 farmers reared 8620 dfls during I crop and harvested 157850 cocoons. Out of 32980 dfls produced, 9470 dfls were reared in II crop and 237500 cocoons were harvested.

RTRS, Bhimtal (Oak tasar), Uttarakhand

Rearing of 736 dfls of Oak tasar silkworm was conducted during preponed crop and 37700 cocoons were harvested. During autumn crop, 250 dfls were reared and 6558 cocoons

were harvested. Grainage of 4415 cocoons was carried out and 900 dfls were produced with cocoon: dfl ratio of 4.90. A nursery of 2000 seedlings is also raised for gap filling purpose. Selection of *Q. semicarpifolia* patches in Munsyari area was made for high altitude rearing.

RTRS, Imphal (Oak tasar), Manipur

Morphometric characterization of the wild adult silk moths belonging to 12 species of 7 genera has revealed a wide variation in colour, size, shape and antennal character. *Attacus atlas* (L.) is the largest moth having wing span size of 215.16 mm in male and 221.61mm in female while *Bombyx huttoni* is the smallest with 35.47 mm in male and 53.22 mm in female. Survey was also carried out for the presence of *Antheraea frithi* on *Lithocarpus dealbata* and 51860 seed cocoons were collected. These cocoons have been preserved in *ex-situ* conditions for use in conservation programme.

Human Resources Development, Extension Communication and Transfer of Technology

- Under multi-locational trial, establishment of Chawki garden of *Terminalia arjuna* for two crop system at different locations showed encouraging results.
- Multi-locational trials of two improved accession nos. 102 and 123 of *T. arjuna* continued with recording of data on different parameters.
- Technology of application of SM-5, a secondary nutrient formulation, was validated with 80 farmers. Application of the formulation resulted in increase of leaf yield by 32% and cocoon yield by 24%. The formulation has been finally released to the field for adoption.
- Multi-locational trial of newly developed Daba BV race BDR-10 was conducted at RTRS Warangal; RECs Kapistha,

- Hatgamaria, Bangriposi, Kathghora and Nasik respectively. The data indicated that hatching percentage, larval period and weight of matured larva of BDR-10 were better than the ruling variety *i.e.*, Daba BV. Average cocoon productivity of BDR-10 was 48.91/dfl against 43.43/dfl in Daba BV.
- Multi-locational trial of improved line of silkworm CTR-14 conducted at RTRS, Baripada; REC, Kathghora, Hatgamaria, Kapistha and Jhansi was a mixed success. It needs further trials.
 - 84 SHGs with 1549 farmers were nurtured. During seed crop, 28515 dfls were reared by 94 farmers of SHGs producing 1126343 cocoons. Resham Doots and seed crop rearers of SHGs produced 147335 dfls for commercial crop. During commercial crop, 186200 dfls were reared by farmers of SHGs, which produced 6814920 cocoons.
 - 12 SHGs with 191 farmers were formed to promote cooperative culture in Oak Tasar. Seed crop rearing of 4350 dfls was carried out by 27 farmers and 132680 cocoons were harvested. Commercial rearing of 14195 dfls was conducted by 96 farmers and 529442 cocoons were harvested @ 37.29 cocoons/dfl. The temperate units also produced 58045 oak tasar dfls to cater to the needs of stakeholders.
 - 117 motivational activities were organized wherein 6510 farmers participated.
 - 1891 persons in 84 batches were provided training under different programmes at main institute (Structured course: 34 in 2 batches; Integrated Skill Development Scheme: 1048 in 44 batches; Training Initiatives: 471 in 20 batches and ad-hoc programmes: 338 in 18 batches). 1111 farmers in 45 batches were trained on various aspects of tasar culture at nested units.
 - To facilitate different technology transfer to farmers and farm rearings, 9756 dfls were reared and 4, 05,245 cocoons were harvested. 65814 dfls were produced and supplied to DOSs.
 - 850 dfls of different eco-races were produced under conservation and multiplication programme.
 - **Central Muga Eri Research and Training Institute (CMER&TI), Lahdoigarh, Assam**

The Central Muga Eri Research & Training Institute, Lahdoigarh, Jorhat with its network of Regional Muga/Eri Research Stations and Research Extension Centres provides R&D support for development of muga and eri cultures. During 2014-15, 9 CSB funded, 4 DBT funded and 5 DST funded research projects were taken up under different themes like environmental challenges and global warming, drudgery reduction and women friendly technologies, input cost reduction, eco-friendly and organic farming. The highlights of research works done during the year are as follows:

 - Three biofertilizer potential bacterial isolates, *viz.* *Pseudomonas aeruginosa* strain MAJ PIA03, *Bacillus firmus* strain MAJ PSB12 and *Achromobacter sp.* SSK4 strain KAZ AZB05 have been identified from the castor rhizosphere soil samples.
 - *Ailanthus grandis* was found suitable for sustainable eri silkworm rearing.
 - For developing high yielding breed of muga silkworm, sib-mating and inbreeding of the selected lines in subsequent generations (F14-F18) were done followed by directional selection of the targeted characters, *viz.*, higher survivility (more

than 50% ERR) and higher shell weight (0.50 g).

- Embryo isolation technique was standardized and embryo chart was prepared for different developmental stages of muga silkworm eggs. It was also observed that muga silkworm eggs can be preserved upto 15 days at 7°C with > 85% hatching.
- Muga silkworm gut micro flora were morphologically and biochemically characterized. Two most potential gut-bacteria MGB-05 and MGB-11 were identified as *Bacillus stratosphericus* and *B.cerius*.
- More than 400 insect specimens were collected from muga ecosystem for developing diagnostic keys and preserved in the insect repository. Illustrated diagnostics have been prepared for 120 species.
- Isolated bacterial pathogens from diseased cadavers of muga silkworm and four bacteria have been identified as muga silkworm pathogens.
- Post-authorization trial of eri C2 breed recorded an average fecundity of 320 eggs/df, and production of 238 cocoons/df with an average ERR of 79%. In case of BTC, Assam, the average fecundity was 355 eggs/df, production was 252 cocoons/df with an average ERR of 81%. More than 20000 dfls of C2 eri breed were distributed to farmers under SMV.
- Two high yielding genotypes of Kesseru, HF 008 and HF 005, have been identified with potential leaf yield of 27.57 and 26.72 MT/ha/year respectively. The genotypes HF 008 and HF005 showed a gain in the leaf yield by 10.28% and 6.68% over control.
- Under a DST funded project on “Sustainable Rural Livelihood”, training programmes were organized on eri

spinning, product design, dyeing of eri silk and product development. The beneficiaries were credit linked with HDFC Bank Ltd. and State Bank of India for setting up the eri silk based enterprises.

- Under silkworm exploration and characterization programme, more than 200 specimens of wild sericigenous insects were collected from six states of North-East India (Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur and Mizoram). 41 species were identified belonging to Saturniidae and Bombycidae. All the specimens have been preserved for future reference.
- For acclimatization of muga silkworm to indoor conditions, same stock was reared continuously for 14 generations and 15-45% ERR was recorded in different seasons.
- *Terminalia chebula* based formulation “Muga Heal” was sprayed on the leaves of selected Som plants at farmers’ fields during Chotua (March-April, 2014), Aherua (July-August, 2014) and Kotia crops (October-November, 2014). Data indicated enhancement of ERR by 15-30% and reduction of Flacherie disease incidence by 15-20%.
- Forecasting and forewarning system for pests and diseases of muga host plants and silkworm has been developed. During the year, more than 44,160 farmers were covered by mobile SMS for forewarning of pests and disease incidence. The forecasting and forewarning calendars have also been uploaded in the institute’s website on regular basis.
- Trial of “Leaf Surface Microbes (LSM)” was conducted during muga silkworm rearing in Aherua and Kotia crops, 2014. During Aherua crop, no difference in rearing per-formance was observed

between treatment and control. During Kotia crop, 47.5% ERR was obtained under treatment against 43.3% ERR in control.

Extension, HRD and Transfer of Technology

- Farmers Field Schools, three each in muga and eri sectors were established. Benchmark information of each FFS centre was collected and lead farmers were identified for all FFSs. Technology awareness, training and demonstration programmes were organized at the fields of lead farmers.
- 5330 beneficiaries were trained on different seri-technologies under different programmes.
- Demonstration programmes were conducted for disinfection and disease management in muga areas covering 200 farmers of Assam and Meghalaya. Feedback has shown a gain in cocoon yield of 11 to 22 cocoons per gram dfl over control.
- 90 farmers were identified for popularization of bio-intensive farming techniques in muga. Awareness programmes and demonstrations were conducted at farmers' fields on sowing of green manure crops (Dhaincha), incorporation of green manure crops, sowing of inter crops (black gram/sesame), application of vermi-compost etc. Training programme on vermi-compost was also organized for 181 farmers.
- For dissemination of technologies in muga and eri culture, silkworm rearing was conducted in different seasons at farmer's fields under Seri Model Village (SMV). Adoption of technologies under SMV programme resulted in enhanced quality cocoon production from 33 to 38 cocoons/

dfl in seed crop and 49 to 63 cocoons/dfl in commercial crop over benchmark. Good cocoon quality led to higher cocoon price @ Rs.550/- per kg against Rs.250/- per kg before implementation of SMV.

- Institute organized training on "Extension System Management" and "Planning, Monitoring & Evaluation and Technology Management" for the benefit of employees in coordination with NAARM, Hyderabad.
- Workshop on "Basic Diagnostic Techniques of Microbes and Insects of Muga Eco-system" was organized on 16th-18th March, 2015 under Institutional Bio-tech Hub project.
- 8 krishi melas, 45 technology awareness programmes, 13 exhibitions and 43 field days were conducted and accordingly feedback was collected from the farmers.
- The institute has conducted 46 front line technology demonstrations in coordination with KVKs on Integrated technology package of muga and ericulture, BANI machine, muga silk plus, muga cocoon dryer and disease forewarning.

RMRS, Boko, Assam

- Eight wild genetic resources of muga silkworm are being maintained under *ex-situ* conditions at GCC, Damalgre, West Garo Hills, Meghalaya.
- S3 and S6 morphotypes of Som have been identified as disease tolerant and 21000 saplings were raised and supplied to the field.

RERS, Shadnagar, Andhra Pradesh

- Eight castor genotypes were evaluated under rainfed semi-arid conditions. The castor genotypes CSP-106, CSP-105 and CSP-103 exhibited higher values for silk ratio and other commercial characters.

- Ten accessions of eri silkworm were evaluated to identify eco-races suitable to semi-arid conditions of Andhra Pradesh during different seasons. Accessions E-201 and E-206 showed superiority in case of multiple rearing and reproductive traits, respectively.

- **Central Silk Technological Research Institute (CSTRI), Bengaluru, Karnataka**

Central Silk Technological Research Institute with its 11 Demonstration-cum-Technical Service Centres, 6 Silk Conditioning and Testing Houses, 4 Textile Testing Laboratories, One Zonal Office, 2 Raw Silk Testing Centres, 2 Cocoon Testing Centres and One Regional Silk Technological Research Station, spread across India, caters to the Research and Development and technical needs of the silk industry in post-cocoon sector. Significant contributions made by the institute and its nested units are as follows:

Research

- A 4-window energy efficient closed type reeling machine has been developed for energy saving.
- Fine-tuning of cocoon quality index for unfavourable season for both multi-bivoltine and bivoltine cocoons has been worked out.
- Conveyor hot air drier suitable for Indian reeling units has been designed and the technical specifications have been prepared.
- Two varieties of silk woven fabrics were developed with two different weaves and varied structural parameters and it was observed that the changes in structural parameters can improve the comfort properties of these fabrics and some varieties can be ideally suitable for both winter and summer applications and also

cater to the requirements of both men's shirtings and ladies' blouses.

- Eri silk fibers were blended with wool fibers in drawing stage to produce three different blends of eri/wool yarns. 16 sets of fabric samples using the eri, wool and eri/wool blended yarns were prepared. It was observed that increased proportion of eri silk results in improved strength of the blended yarn.
- As a follow up of the tasar research projects on machinery development/modification, multi-locational mass trials were conducted on tasar reeling and suitable reeling machines for the stake holders of different regions have been identified for technology transfer.
- Four research projects were carried out and eight new research projects have been just initiated.

Exploratory Works

Work on reeling of outer, middle and inner layer of muga cocoons, development of improvised device for eri cocoon opening, design and development of improved handloom to reduce drudgery, improving the cohesion characteristics of multibivoltine/tasar/muga raw silk using bivoltine sericin coating in reeling process, design and development of eri cocoon degumming machine, loom up-gradation through pneumatic lifting mechanism to ascertain the impact made in reducing drudgery and improving quality and productivity, reeling performance of fresh and defective cocoons of tasar as well as quality characteristics of yarn produced and development of environment friendly silk dyeing technology was carried out.

Product Development

Fifteen products, viz., chanderi cushion cover, denim laser cutting design (print), denim finished product, mulberry (warp) and eri (weft)

union blended fabrics - printed for sari, shirting & dress material applications, mulberry (warp) and tasar (weft) union blended fabrics - printed for saris, eri noil yarn (4ply-warp) and coir yarn wrapped with eri noil yarn (weft) union blended fabrics, traditional lambani dress in silk, queen dress with traditional stitches, dress with all four varieties of silk, men's jubba with lambani stitches, denim bags, handicraft with traditional craft, silk wall hanging with lambani craft, silk shawls / stoles - natural dyed shawls (mulberry, tasar, eri) and silk book - aroma treated were developed.

Patents

Patents were filed for (i) development of hot air drier with generator of 250-500 kg capacity per batch for drying silkworm pupae and (ii) wet reeling machine.

Training

The Institute has trained 2380 persons during the year covering 835 persons under STP / QEP / BEP / capsule courses/adhoc courses and 1545 persons under Integrated Skill Development Scheme.

Testing

During the year, 110523 lots were tested, which included 94967 cocoon and raw silk lots, 12289 lots of water, dyes, other textiles auxiliaries and 3267 textile lots.

Extension Activities

The main institute and its sub-units have conducted 549 technology demonstrations and field programmes and adopted 48 reeling/twisting/weaving/NMR units covering 720 beneficiaries. 1370 field visits were undertaken by scientists and staff for solving field related problems and for addressing various field issues.

Three Institute Village Linked Programmes were implemented at Kollegal & Ilkal in Karnataka

and Kumarapalayam in Tamil Nadu. Five Cluster Promotion Programmes in Vanya sector were implemented at Jajori & Abhayapuri in Assam, Bero in Jharkhand, Raigarh in Chhattisgarh and Harichandanpur in Odisha. Five MSME projects were implemented at Y.N. Hosakote in Karnataka, Dharmavaram in Andhra Pradesh, Salem in Tamil Nadu, Srinagar in Jammu & Kashmir and Sualkuchi in Assam. Eri blend spun yarns have been produced in collaboration with spun silk mills and popularized, which led to creation for huge demand of eri shells.

Collaborative Projects

The following collaborative projects implemented by CSTRI, Bengaluru are continuing during 2014-15:

- Development of products using silk in Solapur & Aurangabad weaving cluster.
- Production of superior quality of eri yarn for conversion into suiting and knits.
- Production of tasar peduncle spun yarn furnishing fabrics and shawls.
- Documentation of GI products.
- Documentation of developed products.

Catalytic Development Programme

Nine automatic reeling machines and 162 silk reeling machines (multi-end reeling machine, improved cottage basin, motorized charka & twisting machines) were commissioned in the field. 85 reeling sheds, 116 hot driers, 958 silk weaving machines/equipments (loom upgradation, PLM & CATD) and 3 silk dyeing machines were installed in the field.

CSTRI Sub-units

The sub-units of CSTRI were involved in conducting various training programme, organizing technology demonstrations and field programmes, conducting field oriented

research, implementation and monitoring of various XII Plan CDP schemes. The sub-units were also involved in adoption of reeling, weaving, twisting and dyeing units for continuous monitoring for overall improvement. Testing service is another major activity of the sub-units.

3.1.1.2 Training

CSB Academic Affairs

The CSB organizes a number of trainings at its research and training institutes under

Sl. No.	Training Courses	No. of persons trained	Category of Trainees
1	Structured Courses (PGDS Mulberry & Non-Mulb. Course)	33	DoS sponsored candidates
2	Capsule Courses	4071	CSB/DoS/NGO
3	Adhoc Courses (TUP + SDP + MDP + RDP + Need-based + Farmers' Trg Prog.)	4872	Farmers/Beneficiaries/Entrepreneurs
4	Other Programmes	2124	Farmers/Officials
TOTAL		11100	

different human resource development programmes. The training details indicate that large number of stake holders was covered under different trainings during the period.

Further, CSB also runs a 6 months 'Certificate in Sericulture' course in English in collaboration with IGNOU wherein, 133 persons have been enrolled during the year making the cumulative enrolment up to 633 persons till date through 10 Programme Study Centres distributed throughout the country. The course material is under translation in 9 Indian languages for the benefit of participants.

Integrated Skill Training and Enterprise Development Programme (STEP)

In addition to the above, the Training Division of CSB also conducts management based training programmes under the component 'Skill Training and Enterprise

Development by Training Division covering around 484 persons. The break-up of the programmes conducted are indicated here under:

#	Name of the prog.	Place	No. of prog	Partici-pants
1	Resource Development Programme	Berhampore (for DoS, Manipur under MSP)	3	90
		Dimapur	1	20
		Aizawl	1	20
		Agartala	1	20
		Guwahati	1	14
		Sub-total	7	164
2	Management Development Programme	Dehradun	1	22
		Bilaspur	1	22
		Berhampore	1	25
		Ranchi	1	22
		Lahdoigarh	1	22
		Imphal	1	35
		Sub total	6	148
3	Technology Up-gradation Programme	Ramdia, Hajo (Assam)	1	172
		Sub-total	1	172
		TOTAL	Grand Total	14

3.1.1.3 Transfer of Technology

- The technologies emanated out of the concluded projects have been effectively transferred to the field through various extension communication programmes.
- 1738 ToT programmes were organized and 54 technologies were transferred effectively at the user level.
- 1269 mulberry germplasm accessions are under conservation in *ex-situ* (field gene bank).
- 458 silkworm germplasm stocks were maintained and 34 new mulberry and 6 silk-worm germplasm stocks were introduced.
- NPV tolerant biovltine silkworm lines of improved CSR2, viz., MASN4, 6 and 7 have been developed under marker assisted breeding programme.

- An infectious flacherie virus has been identified from infected tasar silkworms based on RdRP gene primers and has been designated as AMIFV.
- A double step preservation technology for eri silkworm eggs up to 11-12 days without affecting the hatching and rearing performance has been developed.
- 110523 cocoons and silk samples, 12289 lots of water dyes and other textile auxiliaries and 3267 textile lots were tested.

The details on Transfer of Technology activities of individual Research and Training Institutes of Central Silk Board are discussed under R&D scheme.

Institute Village Linked Programme (IVLP)

For effective transfer of technology from lab-to-land and establishment of model sericulture villages, CSB has decided to implement Institute Village Linked Programme through its main R & D Institutes, with the following objectives :

- Identify domains for new technology requirement at macro and micro level.
- Introduce technological interventions with emphasis on stability and sustainability along with productivity of small farm production system.
- Introduce and integrate appropriate technologies to sustain technological interventions and their integration to maintain productivity and profitability taking environmental issues into consideration.
- Facilitate adoption of appropriate on-farm value addition of agricultural products, by products and wastes for greater economic dividend.
- Facilitate adoption of appropriate technologies for removal of drudgery increased efficiency and higher income of farm women.

- Monitor socio-economic impact of the technology intervention.

Central Silk Board has adopted 48 clusters under Institute Village Linkage programme covering 5000 farmers through 100% technology adoption programme. 27 clusters are covered under Bivoltine programme with 3573 farmers. 27 bivoltine and 19 vanya clusters have also been organised covering 3778 and 1462 farmers respectively, besides, 3 clusters under post-cocoon sector. The cluster progress will be directly monitored by CSB R & D institutes to add on to the bivoltine production programme.

3.1.1.4 IT Initiatives

Computerisation

The Central Silk Board has been using the Information Technology to improve the functioning of the Board as well as assisting scientists in their research activities for the past 25 years. Central Silk Board has taken many initiatives to make the stakeholders reap advantages of Information Technology in getting timely and accurate information, providing access to various data and reports through sets of databases maintained at Central Office, Bengaluru.

The present set-up of Information Technology infrastructure in the Central Silk Board consists of:

- Hosting of the website www.csb.gov.in and intranet service for CSB units and employees deployed at Central Office with two state of the art servers with a high speed internet (10 Mbps IBW).
- Linux and Windows Server 2003 operating systems are used in Servers. Windows-7, Vista, Windows-XP and Linux are used on desktop computers.
- MS-Office 2000/2007/2010 and Open Office are used for general office correspondence, Research, Technical and

Statistical data maintenance. Power Builder, VB.net, ASP.net, PHP, Java is used for developing front end and web interfaces on LAN. Oracle, My SQL, MS-Access and Foxpro are used for managing data, handled through applications. SPSS and Windostat are used for analysis of research and statistical data.

- There are about 950 computers in CSB, including servers, Core i7, Core i5, Core i3 & Dual core computers and Notebooks, which are extensively used for research data compilation, analysis of data, sericulture statistics, office productivity and routine correspondence in CSB and its nested units.
- Video conferencing facility established at Central Office, CSB is being used extensively to conduct meetings, reviews etc., covering the entire nation. More research institutes are in the process of establishing VC studios for effective communication.
- Biometric finger print capturing system for recording attendance is successfully implemented other CSB units also to ensure punctuality and discipline. This will ensure proper time management and better output by officials.
- Major applications developed and deployed during the year include :
 - i. *SMS Services*: Rates of sericulture products are made available by SMS. The SMS facility has gone a long way in keeping farmers updated on price movement
 - ii. *SERI-5K Database*: SERI-5K database is designed and developed to maintain and manage bivoltine cluster farmers throughout India.
 - iii. *SILKS Portal*: Sericulture Information Linkage and Knowledge System

(SILKS) portal has been developed in association with North Eastern Space Application Centre, Department of Space, Govt. of India, Umiam, Meghalaya by capturing geographical images through satellite and used for analysis and selection of potential unutilized land for promoting sericulture. The SILKS portal is hosted and maintained by Computer Section.

- iv. *Mkisan.gov.in*: Using timely a mkisan portal and relevant advisory SMS messages are sent to farmers in local language.
- v. *MyGov*: CSB has initiated an open discussion forum in MyGov portal on the topic "How to increase the demand of Indian Silk products in the country as well as abroad".

3.1.2. Seed Organization

3.1.2.1 Mulberry Seed (National Silkworm Seed Organization - NSSO)

National Silkworm Seed Organization (NSSO) has carved a niche for itself in sericulture industry in the country, in more than one way covering not only in production of quality basic silkworm seed but also in production and supply of quality commercial bivoltine and cross breed silkworm hybrid seed through its Basic Seed Farms (BSFs) and ISO 9001:2008 certified Silkworm Seed Production Centres (SSPCs). The organization scaled to newer heights with the highest and best ever production creating a record of the highest quantum of basic and commercial seed. Further, while touching the highest production of bivoltine hybrids ever in its history, NSSO has maintained its clientele for crossbreed silkworm seed with a considerable share. Thus, NSSO has excelled in quality mulberry seed production and played a pivotal role in the country's mulberry raw silk production

in line with the mandate and services of a diligent and committed team.

Seed Cocoon Generation and Basic Silk-worm Seed Production at Basic Seed Farms

The BSFs formed the back bone of NSSO operations through a record generation of quality seed cocoons and basic seed. Meticulous planning, scientific and systematic execution of activities for seed maintenance and multiplication (P3, P2 and P1) at all its 19 Basic Seed Farms (9 Bivoltine and 10 Multivoltine) and one Centre for Sericulture Development (CSD) have resulted into production of quality seed cocoons and basic seed through one way system of multiplication of approved breeds. These farms performed well and surpassed the targeted generation of bivoltine seed cocoons by generating 63.19 lakh bivoltine and 56.03 lakh multivoltine seed cocoons against a target of 58.30 and 70.03 lakh, respectively (Figs. 1 & 2).

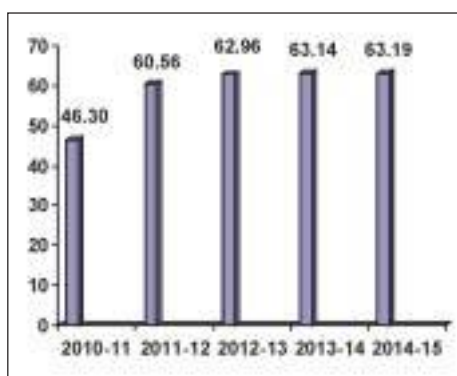


Fig.1: Bivoltine seed cocoon generation

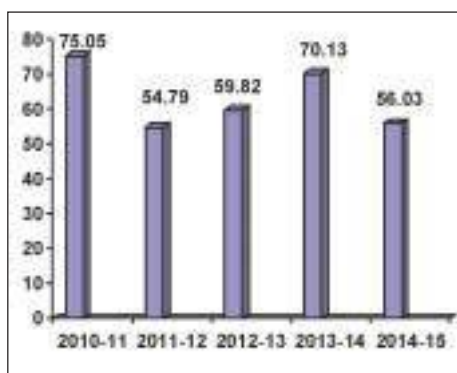


Fig.2: Multivoltine seed cocoon generation

Out of 15.24 lakh basic seed (13.31 lakh bivoltine and 1.92 lakh multivoltine) produced during the year, 13.20 lakh bivoltine and 1.67 lakh multivoltine basic seed were distributed as detailed below:

Breed		P3	P2	P1
Production	Bivoltine	2157	39027	1290315
	Multivoltine	1209	17745	173257
	Total	3366	56772	1463572
Supply	Bivoltine	1118	22665	1296413
	Multivoltine	1209	15870	150198
	Total	2327	38535	1446611

The state-wise P1 bivoltine and multivoltine basic seed distribution by NSSO is presented in Figs. 3 & 4, respectively.

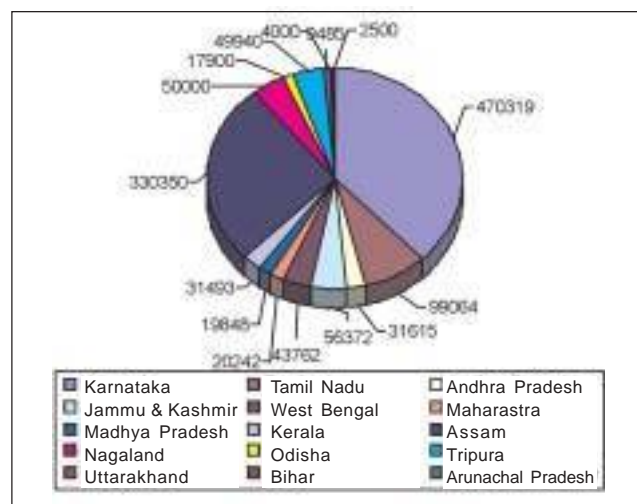


Fig.3: State-wise bivoltine basic seed distribution

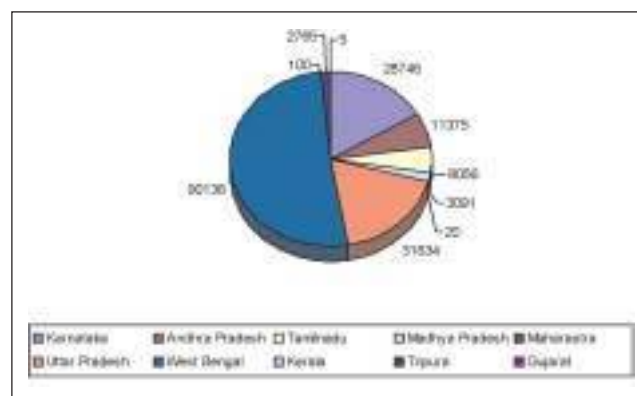


Fig.4: State-wise multivoltine basic seed distribution

Generation of quality seed cocoons through Adopted Seed Rearers (ASRs)

ASRs are provided with facilities like rearing trays, chawki rearing stands, room heaters, humidifiers, de-humidifiers, power sprayers, disinfection masks, improved mountages etc., with these facilities, 1105.98 lakh bivoltine seed cocoons were generated for production of bivoltine hybrid and crossbreed dfls. Besides SSPCs, NSSO has also supported the DoS, Registered Seed Producers (RSPs) and SSPCs of West Bengal and DoS, Uttar Pradesh and North-eastern states by gene-rating 55.56 lakh (38.25 lakh – West Bengal, 15.74 lakh - Uttar Pradesh & 1.57 lakh to North-eastern states) bivoltine seed cocoons in South India and supplying to them against an indent of 47.32 lakh seed cocoons (32.88 lakh - West Bengal, 12.87 lakh - Uttar Pradesh and 1.57 lakh North-eastern states) registering an achievement of 117.41%.

The Seed Cocoon Procurement Centre (SCPC) at Kunigal has supported the SSPCs by procuring 97.81 lakh multivoltine seed cocoons for preparation of cross breed layings. SCPCs at Denkanikottai, Kunaigal and Punganur had generated 24.80, 38.01 and 21.42 lakh multivoltine seed cocoons respectively through ASRs for production of crossbreed dfls at SSPCs.

Commercial Seed Production at SSPCs

The cumulative performance of the ISO certified SSPCs has resulted into a record production of 370.16 lakh dfls with an achievement

of 104.2%. The production includes, 251.57 lakh bivoltine hybrid dfls (67.96%) (Fig.5 & 6) and 118.59 lakh cross-breed dfls (32.04%). 251.57 lakhs of bivoltine hybrid dfls were produced against a target of 210.00 lakh with an achievement of 119.80%. This includes 12.60 lakh CSR hybrids, 227.45 lakh double hybrids, 6.60 lakh traditional hybrids and 4.93 lakh new hybrids. PM x CSR2 formed (39.67 lakh) the core production of multi x bi hybrid followed by Nistari x Bivoltine (40.09 lakh).

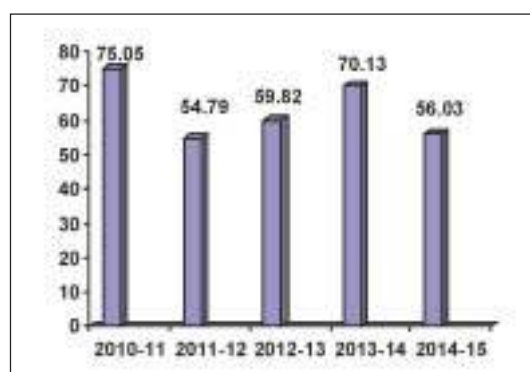


Fig.5: Production of bivoltine hybrid dfl

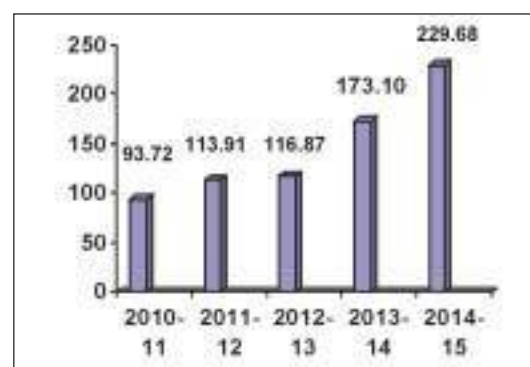


Fig.6: Distribution of bivoltine hybrid dfl

Combination wise - target and production of dfls (in lakhs)

Combination		Target	Achievement	Percentage
Bivoltine Hybrids	CSR2 x CSR4	36.00	12.60	35.00
	FC1 x FC2	161.00	227.45	141.27
	SH6 x NB4D2	13.00	6.60	50.77
	Others		4.93	
Total		210.00	251.57	119.80
Multi x Bivoltine Hybrids	PM x CSR2	64.00	39.67	61.98
	PM x FC2		14.27	
	N x Bi	50.00	40.09	80.18
	N x M12 (W)	31.00	17.96	57.94
	Others		6.61	
Total		145.00	118.59	81.79
Grand Total		355.00	370.16	104.27

Production of Quality F1 dfls

Seed quality is maintained in all its SSPCs adopting ISO quality management system at every production process. The egg recovery in multi x bivoltine hybrids produced in the southern region was 29.13% against the norm of 28.00%. In bivoltine hybrids, the average egg productivity in the case of CSR hybrids was 60.06 g/kg cocoons against the norm of 60 g/kg cocoons and for double hybrids it was 63.82 g/kg cocoons against the norm of 65 g/kg cocoons. 229.68 lakh bivoltine and 114.9 lakh multi x bivoltine hybrid dfls were supplied to various state departments and CSB units.

Extension Activities

The extension units including Sericulture Service Centres (SSCs) and Sericulture Service Units (SSUs) together with Scientists of SSPCs identified as CDFs for clusters played a significant role in distribution of commercial seed produced at SSPCs and in providing extension support through crop monitoring and transfer of proven technologies to the field. During the year, 32 SSCs and 29 SSUs distributed 170.10 lakh dfls including 81.39 lakh bivoltine hybrid dfls. The comparative bivoltine commercial seed distribution over the last 5 years is presented in Fig.3. Distribution of 89.80 lakh dfls (80.41 lakh bivoltine hybrid and 9.39 lakh crossbreed dfls) through the CRC Discount Scheme gained immense popularity.

Post-authorization Trials of New Silkworm Hybrids

Post-authorization trial programme was continued as per schedule during the year with production and supply of dfls from different identified bivoltine, multi x bi and multi x multi combinations. Hybrid dfls have been produced as per the programme with the supply of P1 dfls from respective research institutes and supplied them

to the coordinating institutes for distribution among farmers for field evaluation. Earnest efforts have been made to produce and supply the dfls of the identified new combinations with the help of SCPCs utilizing the seed cocoons of respective parental breeds by dedicated seed rearers. A quantity of 11.54 lakh dfls comprising 4.93 lakh of bivoltine x bivoltine combinations and 6.61 lakh of multi x bi combination dfls were produced and supplied for evaluation. The silkworm hybrids were distributed among the farmers of South, North and North-East India through the coordinating institutes.

Training

NSSO has organized various training programmes on seed crop rearing production. 264 persons were trained during the year.

Publications

During the year, the NSSO has published 15 research papers and popular articles presented / accepted for scientific seminars/ workshops. Further, the following booklets have been published :

- NSSO Newsletter
- Silkworm Seed Production Centre – ISO Certification Manual
- Brochures in Hindi on “Uttar Bharat ke krishakon ke liye dwipraj reshama keetpalan ki takhnique” and “Safal dwipraj reshama keetpalan ke liye vishuddikaran ki takhnique”

Impact of NSSO on Bivoltine Raw Silk Production

NSSO leads in bivoltine raw silk production by contributing nearly 60% of the country's requirement through direct distribution of 229.68 lakh bivoltine hybrid dfls and 40% through supply of bivoltine basic seed to various state sericulture departments for utilizing the same for commercial bivoltine silkworm seed production.

3.1.2.2 Vanya seed (BTSSO, MSSO and ESSO)

Tropical Tasar Seed : Basic Tasar Silkworm Seed Organization (BTSSO)

BTSSO is responsible for organizing the systematic seed production and supply of tropical tasar, functioning at Bilaspur, Chhattisgarh with its network of 21 Basic Seed Multiplication & Training Centres (BSM&TCs) functioning in different states and a Central Tasar Silkworm Seed Station (CTSSS) at Kota in Chhattisgarh, responsible for production and distribution of tasar nucleus seed to BSM&TCs for multiplication, in addition to maintenance of germplasm of different silkworm races. The Centre has produced and supplied 86145 dfls nucleus seed during the year to all BSM&TCs for replenishment of existing stock. The cumulative performance of these BSM&TCs resulted in production of 34.31 lakh dfls during the year besides production of 6.71 lakh dfls by BTSSO through the private graineurs. A shift in production strategy has been adopted wherein the BTSSO will focus only in production & supply of entire nucleus seed requirement. The state seed production units gradually will take up production of entire basic seed to meet their demand with private participation.

Oak Tasar seed: The cumulative production of oak tasar seed by two RTRSSs, one Oak Tasar grainage, three RECs and two REC-cum-BSM&TCs located in 6 states during the year 2014-15 was 0.58 lakh dfls.

Muga seed: Muga Silkworm Seed Organization (MSSO) at Guwahati, Assam under the Muga Seed Development Project comprises of two P4 and five P3 Muga Seed Stations (Central Sector) and 10 P2 seed centres and six reeling units (under state). The infrastructure created under state sector has been handed over to the respective state governments for further maintenance after completion of the project period. The present reorganized MSSO with the units created under Central sector has two P4 units, six P3 units for

production of basic seed and one Muga Silkworm Seed Production Centre (MSSPC) for the production of commercial seed. A summer seed zone has also been established for Muga at Kalimpong (WB) for production and supply of Muga seed in unfavorable season. The cumulative performance of Muga Basic Seed Stations during the year was the production of 4.53 lakh dfls. Besides, one Muga SSPC located at Kaliabari (Boko) in Assam has produced 1.58 lakh dfls.

Eri seed: The activities of Eri Silkworm Seed Organization are also undertaken by MSSO, Guwahati, Assam with its single Eri SSPC in North-eastern region and four Eri SSPCs in non-traditional states producing 5.69 lakh eri dfls during 2014-15 for distribution to different state departments.

3.1.2.3. Seed Act

NSSO continued its efforts for implementation of the provisions of Central Silk Board (Amendment) Act, 2006. During the year, 3362 new applications were scrutinized and processed. 3148 multi-colour, bilingual (Hindi-English) Registration Certificates were prepared using the special software package. Certificates in respect of 104 Registered Seed Producers, 71 Registered Chawki Rearers and 2973 Registered Seed Cocoon Producers were issued. All the RSPs and RCRs of different states were linked to the concerned Seed Officers and Seed Analysts. The database of registered stake holders was updated from time to time and sent to the State Sericulture Departments and also uploaded in the CSB website. On-site inspection of the premises of RSPs and RCRs by Seed Analysts and Seed Officers was carried out for the purpose of system and product certifications, respectively. Certificate training course of three months duration was organized at CSRTI, Mysuru for chawki rearing and in SSTL, Kodathi for seed production. 52 persons completed training in 3

batches in chawki rearing and 21 persons in a single batch in seed production techniques. Certificate training for matriculates makes them eligible for registration under Seed Act.

3.1.3 Co-ordination and Marketing Development

3.1.3.1 Coordination

3.1.3.1.1 Board's Secretariat

The Central Silk Board has been assigned the responsibility for the overall development of silk industry in the country, besides, advising Govt. of India in the matters related to the silk industry. Various developmental and inter-related supportive programmes, as well as R&D schemes are implemented by CSB.

The Central Silk Board with its headquarters located at Bengaluru monitors the activities of R&D organisations, frontline demonstrations, maintenance of frontier silk-worm seed production net work, leadership role in commercial silkworm seed production, standardizing and instilling quality parameters in various production processes, promotion of Indian Silk in domestic and international markets. These activities are being carried out by the R&D institutes, seed organizations, ROs, RMBs / MRMB located in the country.

Meetings of the Board and Standing Committee

During the period under report, three Standing Committee Meetings were convened on 03.07.2014, 07.11.2014 & 03.02.2015 and one Board Meeting was conducted on 07.11.2014.

Publicity and Media Programmes

During the year under report, the Publicity Section at CSB headquarters has carried out various publicity and media activities on sericulture and silk industry and the details are as follows:

I. Periodicals

Indian Silk: The Central Silk Board continued publication of *Indian Silk* - the monthly bilingual industrial journal devoted to the sericulture and silk industry of India is continuing its publication. Presently, the journal is in its 53rd year of publication. During the year, Indian Silk has covered important national and international events besides its regular columns, which is as follows :

- A special issue of Indian Silk on "Workshop on Empowering Women through Sericulture" – a commitment to Government of India's initiative *Sab Ka Saath – Sab Ka Vikas* and the same was released by His Excellency, the Governor of Karnataka on 24.11.2014 during the inaugural session of 23rd ISC congress at Bengaluru.
- A souvenir issue on the occasion of 23rd International Congress on Sericulture & Silk Industry held at Bengaluru highlighting the curtain raiser articles and special features. The issue was released by the Hon'ble Union Minister of State for Textiles on 26.11.2014 during the valedictory session of 23rd ISC Congress at Bengaluru.

Besides, Indian Silk has also published:

- Time relevant articles on Geographical Indicators to Silk & Silk Products – Pochampalli Ikat,
- Features on the status of sericulture in select states,
- Success stories on sericulturists, reelers, weavers and designers
- Features on the status of sericulture in select states.
- Visits of dignitaries like Union Minister of State for Textiles, Chief Ministers; Ministers and MP/MLAs of different

states; Principal Secretaries, Secretary (Textiles), Financial Advisor, MOT and senior bureau-crats to various sericulture programmes in different units of CSB.

- Indian Silk has continued its efforts to make the magazine indexed in select national and international abstract services and more informative with regular publication of interesting columns like 'This Issue That Year', 'Do You Know' 'Research Briefs', 'Research News', National and International Trade events, CSB News, SMOI News, etc.

II. Publications

- Fifth revised edition of CSB publication *Handbook of Sericulture Technology* has been brought in English. This provides an overview of sericulture industry in India including all relevant information on plantation and silkworm rearing, disease and pest management and mechanisation.
- Similarly, 4th revised edition of Handbook of Sericulture Technologies in Kannada was also published. The revised edition of the book in Telugu is under print.
- A special booklet on *Our Women Achievers in Sericulture-2014* highlighting the success stories of 54 women sericulturists from 27 states who excelled in their performance as sericulture entrepreneurs and became role models for others. This booklet was released by the Hon'ble Union Minister of State for Textiles during the inaugural session of the national workshop on women empowerment held on 17.9.2014. Besides, the creative designing of dias, backdrops and printing of standees, banners and invitation cards, certificates and badges of the workshop were undertaken.
- A special corporate brochure on *Indian Silks – Unleashing Magic* has also been brought out highlighting the importance of Indian sericulture and silk industry and the initiatives of CSB in ensuring an all round development of the industry and its support to the social cause and propagating sericulture as an effective tool for inclusive growth.
- A bilingual annual administrative report of Central Silk Board and its units for 2013-14 with information on its R&D activities and developmental projects.
- A bilingual training calendar for 2014-15 consisting information on training courses offered by the CSB and its units.
- A Hindi in-house publication Resham Bharati devoting to the promotion of official language in coordination with the Hindi Section, Central Office.

III. Press & Media Relations

The publicity section has issued a number of press notes to print and electronic media highlighting the various activities of the CSB and ensured wide coverage for sericulture and silk related activities and events. The major ones include:

- a. One-day workshop on Empowering women through Sericulture on 17th September, 2014.
- b. 23rd International Congress on Sericulture & Silk Industry held at Bengaluru during 24-27th November, 2014.
- c. Inauguration of Cold Storage Plant at Mysuru by Hon'ble Union Minister of State for Textiles on 9th February, 2015.
- d. A curtain raiser news story on the event was telecast in All India Radio and Doordarshan, Bengaluru on 8th February, 2015. The event hit the headlines and was covered in detail by both national and regional news papers and media.

IV. Participation in exhibitions and trade fairs

- a. Public Information Campaign Exhibition held during 13th-15th December, 2014 at Gadag, Karnataka.
- b. Publicity campaign held during 20th - 22nd December, 2014 at Chikkamagalore, Karnataka in coordination with CSR&TI, Mysuru and CSTRI, Bengaluru.
- c. National Agri Fest 2014 at Mananthavady, Wayanad, Kerala held during 19th - 26th December, 2014.
- d. 26th Krishi O Banijya Mela held during 6th - 15th December, 2014 at Chandipur, Mednipur, West Bengal.
- e. Rural Livelihood Mela organized by Ramakrishna Mission Ashram at Sarghachi, Murshidabad, West Bengal during 20th - 28th March, 2015.
- f. Actively involved in updating of Indian Silk magazine, new publications and video films on sericulture on CSB website.
- g. Fulfilled 100% OLIC through correspondence, noting and drafting in Hindi/bilingual.

Official Language Policy

Implementation of official language policy in Central Silk Board is continued as per the guidelines of the Department of Official Language, Ministry of Home Affairs, Govt. of India, New Delhi. Efforts are continuous for accelerating the progressive use of Hindi for all official purposes. Performance awards presented by different organisations to the units of Central Silk Board for their contribution in official language implementation during 2014-15 are indicated below:

1. Central Silk Technological Research Institute, Bengaluru has been awarded the Indira Gandhi Rajbhasha Second Prize

2. Central Tasar Research & Training Institute, Ranchi has been awarded the Regional Official Language First Prize for Eastern Region; Rajbhasha Shree Award [Shield] from Rajbhasha Swabhiman Trust, New Delhi and a Citation for House Magazine Resham Vani from Rashtra Bhasha Swabhiman Trust, New Delhi.
3. Central Sericultural Research & Training Institute, Berhampore has been awarded with Regional Official Language Third Prize for Eastern Region and Karyalaya Deep Smrity Chinha Prize from Rajya Bhasha Samsthan, New Delhi.
4. Muga Silkworm Seed Organization, Guwahati, Assam has been awarded the Citation of Refinery Official Language Shield Scheme of TOLIC, Guwahati.
5. Regional Office, Central Silk Board, Guwahati also received Citation of Refinery Official Language Shield Scheme of TOLIC (Undertaking), Guwahati.

Compliance of Official Language Act, 1963 & Rules, 1976

Cent percent compliance was ensured as per the Rule-5 of Official Language Rules, 1976 and in original correspondence. 112 Offices including Board Secretariat have so far been notified under Rule 10(4) of Official Language Rules, 1976.

Other achievements

Training: Two persons from Central Office were trained, one each in Hindi Pragya and Stenography. Similarly, 28 persons from Central Office and 59 staff members from other units were trained in Hindi language on computer.

Meetings: Quarterly meetings were convened on 18.06.2014, 19.09.2014, 22.12.2014 and 23.03.2015.

Hindi week/ fortnight: Joint Hindi fortnight was observed from 1st - 15th September, 2014 in CSB premises. Organised competitions like Hindi reading, Handwriting, Noting-drafting, What does the picture say, Cross word, Glossary, Memory test, Oral quiz and Hindi singing were organised. Hindi Day/ Week/ Fortnight was also organized in other units of the Board. Besides, CSB has organized a town level inter office competition on Hindi extempore speech on 9th October, 2014.

Workshop: Five one day full-time Hindi workshops were organised on 30th June, 2014, 26th September, 2014, 18th December, 2014 and 11th & 12th March, 2015 focusing on computer training in Hindi. CTR&TI, Ranchi has organized Technical Orientation Workshop for implementation of Tasar Promotion Programme in Hindi on 19th August, 2014. SBRL, Bengaluru organized technical workshop on 17th December, 2014 in Hindi. Hindi workshops were also organized in sub-units of the Board.

Software and its use: Unicode software and Leap Office 2000 are being used in Central Silk Board as per the guidelines of Department of Official Language, Ministry of Home Affairs, Govt. of India. The CSTRI, Bengaluru has taken corporate licence of Bank Script Software for bilingual preparation of pay slips for CSB.

Inspection: The third parliament sub-committee on official language has conducted inspection on official language implementation on 10th February, 2015 at Central Sericultural Research & Training Institute, Mysuru. Inspections pertaining to the implementation of official language were also carried out in all its units.

Publications: In-house Hindi magazine *Resham Bharati* is being published half yearly.

Translation: The Hindi section of Board's secretariat has translated Annual Report and Certified Accounts with Audit Certificate & Audit Report for 2013-14, Calendar of Training Courses for Sericulture for 2014-15 and background note on Silk & Sericulture in Hindi.

Rolling Shield Award: Under the Rajbhasha Rolling Shield Programme, the following units have been awarded for their performance in official language implementation:

- National Silkworm Seed Organization, CSB, Bengaluru.
- Muga Silkworm Seed Organisation, CSB, Guwahati.
- Basic Tasar Silkworm Seed Organization, CSB, Bilaspur.
- Regional Sericultural Research Station, CSB, Sahaspur, Dehradun.
- DCTSC, CSTRI, CSB, Bhandara, Maharashtra.
- Zonal Office, CSTRI, CSB, Bilaspur.
- Regional office, CSB, Guwahati and
- Regional office, CSB, Kolkata.

Under the new provision of Rolling Shield programme for different sections of Central Silk Board, Planning and Monitoring Section bagged the award for the year 2012-13. CTR&TI, CSB, Ranchi organized Rolling Shield distribution function on 15th September, 2014. CSR&TI, CSB, Berhampore organized its distribution function on 25th September, 2014 and CSTRI, CSB, Bengaluru also has introduced Rajbhasha Rolling Shield Scheme to boost the implementation of Official Language Policy in the main Institutes and in their Sub-units and sections.

3.1.3.1.2. Regional Offices of CSB Functions and Activities

The Regional Offices (RO) maintain liaison with States and their Departments

of Sericulture and nested units in their jurisdiction. They coordinate with these agencies regarding various sericulture development programmes implemented in respective states. They are functioning at different locations, viz, New Delhi, Mumbai, Kolkata, Jammu, Hyderabad, Bhubaneshwar, Guwahati, Lucknow, Chennai and Patna. Other activities of Regional Offices are:

- Member Conveners of State Level Sericulture Co-ordination Committee (SLSCC) meetings constituted by CSB.
- Organizing entrepreneurship development programme.
- Collection of data pertaining to sericulture and silk industry, analyzing and forwarding to Central Office for maintaining the Management Information System database.
- Conducting base-line surveys in selected areas to work out productivity economics of sericulturists.
- Co-ordinating with the Directors of the research institutes in their jurisdiction in respect of field trials, transfer of technology, surveys and evaluation studies.
- Critically evaluating the sericulture programmes run by the Non-Government Organizations and other voluntary agencies in different states.

- Organizing the implementation of development programmes in states.
- Coordinating the trainings/workshops and other publicity programmes on the directions of Central Office
- Undertaking voluntary quality inspections of silk goods meant for exports.
- Assisting the states in formulation, implementation and evaluation of centrally sponsored Catalytic Development Programme.
- Acting as Central Public Information Officers/Assistant Public Information Officers to provide information to the public as per the provisions of the RTI Act, 2005.
- Coordinating implementation/execution of 'Silk Mark' Chapters by Silk Mark Organization of India (SMOI).

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

The organogram of Regional-cum-Zonal offices and Regional Offices of Central Silk Board is given below:

Regional-cum-Zonal Office	Zone	Regional Office (RO)	States Covered
RO, New Delhi	Northern Zone	Direct	Punjab, Haryana, Himachal Pradesh, Rajasthan, Uttarakhand
		RO, Jammu	J&K
		RO, Lucknow	Uttar Pradesh
Regional Office, Kolkata	Eastern Zone	Direct	West Bengal
		RO, Bhubaneshwar	Odisha, Madhya Pradesh, Chhattisgarh
		RO, Patna	Bihar, Jharkhand
Regional Office, Guwahati	North-eastern Zone	Direct	8 NE States
		MRMB	All muga producing states
Regional Office, Chennai	Southern Zone	Direct	Tamil Nadu
		RO, Mumbai	Maharashtra, Gujarat
		CO, Bengaluru (Nodal Officer)	Karnataka, Kerala
		RO, Hyderabad	Andhra Pradesh, Telangana

Export Promotion Scheme

Pre-shipment inspection

The CSB has offered inspection service to the exporters and importers under voluntary quality inspection scheme, based on their request, on payment of service charges prescribed by the Board. The inspection service is extended to silk waste and certification meant for export, carpets as an export promotion measure along with affixing of '100% Natural Silk Pile Carpet' labels based on the purity and natural silk/mixed silk goods certified for exports.

The CSB has extended the inspection and certification service to 30.94 lakh sq.mt valued at Rs. 317 cr. during the year and various tariff certificates such as GSP, Handloom Certificate, Handicrafts Certificate and Certificate of Origin etc., have been issued and an amount of Rs. 18.89 lakh has been generated as revenue. The centre wise silk/mixed silk goods certified under voluntary quality inspection scheme and the revenue generated by way of extending service to the various institutions and exporting community during the year is as under:

Certification Centre	Quantity (Lakh sq. mt.)	Value (Rupees in Crore)	Revenue generated (Amt. in Rupees)
Mumbai	4.354	40.763	2,07,450
Bengaluru	20.704	130.610	11,12,400
New Delhi	3.509	97.687	2,78,525
Kolkota	1.545	11.362	2,03,500
Chennai	0.702	16.111	43,400
Varanasi	0.045	2.302	7,700
Srinagar	0.082	14.991	34,200
Hyderabad *	0	3.170	2,100
Bhagalpur	0	0	0
Grand Total	30.941	316.996	18,89,275

Issue of various tariff certificates

Various tariff certificates including GSP, Handloom certificates, Certificate of origin and Handicraft certificates are issued by CSB on inspection of silk goods and on self declaration by the exporters as well.

To enable foreign importers to avail duty free or concessional duty for the import of natural silk/mixed silk products into their country under the EXIM Policy and Bilateral agreements, various tariff certificates viz., Handlooms Certificate to E.E.C., Handicraft Certificate to E.E.C, Australia, Austria, Switzerland and Tariff Certificate, Certificate of origin and other Special Certificates of origin to U.A.E, Sri Lanka, Yugoslavia etc., are issued to goods inspected and certified for export and on the self declaration by the exporters against payment of requisite fees prescribed by the Board.

Testing facilities

Laboratories attached to certification centres of the Board extending testing services for checking silk quality, physical / chemical properties and other parameters through analysis of silk swatches for identification of constituent yarns and their percentage.

Need-based technical assistance has also been extended and identified the constituent yarns and percentage of silk content in products for different organization like Customs Department, Directorate General of Foreign Trade, Directorate of Sericulture, and other Textiles Institutes and Institutions as well as private firms and individuals.

3.1.3.2. Market Development

Raw Material Banks for tasar and muga

The CSB has set up Raw Material Banks for cocoons and by-products under price stabilization scheme of Govt. of India on "no profit no loss basis" to support the primary growers and supply cocoons at steady price and also to protect the interest of rearers from exploitation by middlemen. They ensure right incentive for production, relieve the beneficiaries from wide

fluctuations in market prices of cocoons and raw silk and provide off-the-shelf supply of essential raw materials to actual users & manufacturing exporters of silk goods at steady prices.

RMBs for Tasar at Chaibasa (Jharkhand) with 4 Sub-depots and for Muga at Sibsagar (Assam) with 3 Sub-depots ensure economic and fair price to the primary tasar and muga cocoon growers. The transaction details of tasar & muga cocoons made by RMBs are given below:

(Unit: Qty. in lakh nos, & Value in lakh Rs.)

Sector	Procurement of cocoons		Sale of cocoons	
	Quantity	Value	Quantity	Value
Tasar	180.35	192.60	237.70	306.11
Muga	5.42	9.40	5.20	8.27

3.1.4 Quality Certification System

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

3.1.4.1 Silk Mark Organization of India (SMOI)

The CSB is popularising "Silk Mark" through the Silk Mark Organization of India (SMOI). "Silk Mark", an assurance label for purity of silk, protects the interests of the consumers from the traders selling spurious products in the name of pure silk.

The progress achieved under the Quality Certification Systems (QCS) scheme during 2014-15 is given below:

Particulars	2014-15	
	Target	Achievement
Total No. of Authorized Users enrolled	250	285
Total No. of Silk Mark Labels sold (Lakh nos.)	28	25.50
Awareness Programmes Exhibitions/Fairs/ Workshops/Road Shows (Nos.)	360	430
Cocoon Testing Centres (Nos.)	10	2*
Raw Silk Testing Centres (Nos.)	3	*

* Target not achieved due to paucity of funds

To enhance the consumer confidence in Silk Mark, SMOI has launched an innovative method of labeling i.e., Silk Mark Fusion Label. This new system of labeling allows the label to get fused onto the products which is non-transferable, loaded with various security features like the hidden text visible under UV light, random label number with track & trace facility etc. The system is under further improvement with introduction of QR code for each label to facilitate consumers to know more about the product and its origin and also to make it user friendly at Authorised User level.

SMOI has continued to conduct a series of Silk Mark Expos across the country to provide a platform for our Authorised Users to display products and improve their business. During the year 14 expos have been organised in cities & towns across the country.

3.1.4.2 Cocoon / Raw Silk Testing Centres

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 Cocoon Testing and Raw Silk Testing Centers under the Central Sector scheme 'Quality Certification System' will put quality testing system in place ensuring production of quality cocoons and raw silk. This scheme will also bring quality awareness among the producers for better returns. Accordingly, 22 CTCs & 4 RSTCs have been proposed with the XII Plan assistance. During the year, Two (2) Cocoon Testing Centres i.e., one each at Tamil Nadu and Tripura have been established.

3.1.5 Export, Brand Promotion and Technology Up-gradation

During XII Plan, the Brand Promotion of Indian Silk is being implemented to provide

impetus to the Indian Silk export promotion in international market. The activities carried during the year under brand promotion programme are as follows :

- Undertaken programmes for Indian Silk at Sualkuchi, Uppada and Chanderi.
- Equipment was supplied to the testing laboratories of SMOI chapters at Kolkata and Guwahati.
- Adopted some weaving clusters to support weavers for quality improvement and for providing market access. Five silk clusters – Varanasi, Bhagalpur, Uppada, Pochampalli and Sualkuchi have been identified for the purpose. After interactive sessions with weavers, designers and other stake holders of these clusters, the Authorised Users/Weaver Societies have been selected for online promotion of their products on pilot basis. In association with M/s. Gocoop, an e-commerce platform www.silkmark.gocoop.com has been created and made live. Product enquiries have started flowing and the same are being monitored and coordinated with Gocoop and the concerned weavers.

3.2. CENTRALLY SPONSORED SCHEMES

3.2.1. Catalytic Development Programme

The Catalytic Development Programme (CDP) initiated during IX Five Year Plan is a unique and effective tool for transfer of technologies evolved by the Research Institutes to the field. It was continued through X, XI and XII Plans (till 2014-15) with certain

modifications for encouraging investments among the stakeholders to enhance production, productivity and quality of silk.

CDP in XII Plan emphasizes for production of superior quality Bivoltine silk to reduce the import dependency, increase thrust on Vanya silk and to create more employment in rural areas, through sericulture. The zone-wise, state-wise budget estimate approved and fund released during the years 2012-13, 2013-14 and 2014-15 are given at **Annexure-III**.

During the year, an expenditure of Rs. 213 cr. has been incurred under CDP which is inclusive of the mandatory requirement of Rs. 60 cr. for North-eastern States, Rs. 25 cr. for Scheduled Caste Sub Plan (SCSP) and Rs. 6.59 crore for Tribal Sub Plan (TSP). The scheme-wise details of physical targets and financial outlay and achievements made during 2014-15 are furnished at **Annexure- IV (a, b & c)**.

Beneficiary coverage under CDP during 2014-15		
(Unit: No. of beneficiaries)		
#	Components	2014-15
I	On-farm or Pre-cocoon Sector	
a)	Mulberry	
1	Mulberry Plantation	12,958
2	Seed Testing Facilities	3
	Sub-total for mulberry	12,961
b)	Vanya	
3	Tasar Graineurs	376
4	Tasar Seed Rearers	2,295
5	Muga Private Graineur	75
6	Eri Graineurs / seed rearers	286
7	Augmentation of Tasar Plants	1,839
8	Eri food plantation / Perennial Eri Plantation	1,114
9	Muga food plantation	895
	Sub-total for Vanya	6,880
	Sub-Total (On-farm Sector)	19,841

3.2.1.1 Beneficiaries directly supported during 2014-15

During the year, 21733 beneficiaries were covered under different components under CDP as detailed below: The total beneficiary coverage in NE States comprises around 70% ST and 60% women.

II	Post-cocoon Sector	
10	Reeling sheds	75
11	Multi end reeling	102
12	Automatic Reeling Machine	11
13	Cottage basin reeling units	59
14	Charka Reeling	18
15	Dupion Reeling	
16	Master reeler	18
17	Vanya reeling & spinning	896
18	Shuttle less loom	
19	Handloom	585
20	Computer Aided Textile Designing	106
21	Common Facility Centres	22
22	Economic ovens	
	Sub-Total (Post-cocoon Sector)	1,892
	Grand Total	21733

3.2.1.2 Major achievements under CDP during 2014-15

a. Seed sector

In order to improve the quality and productivity of silkworm seed, for both mulberry and vanya, the following components have been assisted under CDP:

#	Name of the Scheme / Component	Achievement
	Mulberry Seed	
1	Franchise disinfection programme of NSSO (Nos.)	10
2	Support to construct Rearing Houses for Adopted Seed Rearers (ASRs) of NSSO (Nos.)	23
3	Revolving Capital fund support for State grainages and RSPs (Nos.)	16
4	Assistance for purchasing Seed Testing equipments for State grainages and private RSPs (Nos.)	3
5	Support to strengthen basic seed farms of States (Nos.)	6
6	Support to upgrade State and Private commercial seed production units (No. of units)	15
	Vanya Seed	
	Tasar	
1	Assistance to Private Tasar Graineurs (Graineur)	376
a	Assistance to existing tasar graineurs for upgradation of seed production capacity (Graineur)	1417
2	Assistance for strengthening of tasar seed multiplication infrastructure (Tropical Tasar) (PPC)	20
a	Estt. of Basic Seed Production units (by SHGs, Co-operatives/NGOs) (Seed prod. Unit)	1
3	Assistance for strengthening of tasar seed multiplication infrastructure (Oak Tasar) (Grainage)	2
4	Assistance for Tropical Tasar Rearers (Rearer)	2233
a	Assistance for Oak Tasar Seed Rearers (Rearer)	62
b	Assistance for mobile testing facility for disease monitoring and seed cocoon testing (Nos.)	7
	Eri	
5	Assistance to State Deptts. for strengthening of Eri farm cum grainages (Farm cum Grainage)	2
a	Assistance to Eri Private Graineurs (Graineur)	70
b	Assistance to Eri Adopted Seed Rearers (Rearer)	216
c	Upgradation of State Eri Basic Seed farm cum grainages (Farm cum Grainage)	1
	Muga	
6	Assistance to Muga Private Graineurs (Graineur)	75
a	Assistance to existing Muga Private Graineurs for upgradation of seed production capacity (Graineur)	2
7	Assistance to State Deptts. for strengthening of Muga seed multiplication infrastructure (P2) (Farm cum Grainage)	
a	Assistance to Muga Adopted Seed Rearers (Rearer)	237

b. Cocoon sector

To improve the quality and productivity of cocoons, mulberry and vanya, the following components have been assisted under CDP:

#	Mulberry Cocoon	
1	Support for mulberry plantation development (acres)	12958
2	Assistance for irrigation and other water conservation and usage techniques (acres)	8683
3	Supply of rearing appliances (including improved mountages)/ farm equipments to farmers (No./ acres)	10242
4	Supply of quality disinfecting materials and other crop protection measures for farmers (Seed Farmers)	42185
5	Assistance for construction of rearing houses (Nos.)	10724
6	Assistance for maintenance of Chawkie gardens, construction of Chawkie Rearing Centre (CRC) buildings and procurement of Chawkie Rearing equipment (Nos.)	162
7	Production units for Biological inputs/Door to Door Service Agents for Disinfection and inputs supply & Assistance for Sericulture Poly-Clinics (Nos.)	72
8	Support for development of Kissan Nurseries (acres)	182
9	Maintenance cost for Mulberry Plantation raised during X & XI Plan for 3 years (acres)	828
10	Support for construction of Vermi Compost Sheds (Nos.)	815
11	Assistance towards fencing of mulberry gradens in NE States (acres)	2296
12	Assistance towards expansion of Rearing Houses to construct Mounting Halls in NE States (Nos.)	1542
13	Support for increasing the yield of existing rainfed mulberry gardens through water conservation techniques (acres)	1775
	Vanya Cocoon	
	Tasar	
1	Support to rearers for Augmentation of Tasar Host Plantation (ha.)	550
a	Assistance to beneficiaries for raising Tasar food plant seedlings (Kisan Nurseries) (Nursery units)	51
b	Assistance to Tasar rearers for maintenance of existing Chawkie plantation (Rearer)	854
c	Assistance to Tasar rearers for maintenance of existing Tasar plantation (ha.)	305
2	Assistance for raising and maintenance of systematic Oak Tasar Plantation (ha.)	130
3	Assistance for construction of Cocoon Storage Houses in Tasar sector (No.)	55
a)	Assistance for construction of Cocoon Storage and stifling facilities for Tasar rearers (No.)	201
	Eri	
4	Support for Castor/Tapioca cultivators with Start-up tools (acre)	94
5	Augmentation of perennial eri food plants with supply of start-up tools (acre)	1020
a	Assistance for raising Kesseru food plants nursery (Nursery units)	28
6	Assistance for construction of Rearing Houses (Nos.)	2402
	Muga	
7	Augmentation and maintenance of Muga food plants with start-up tools (Acre)	795
a	Assistance for raising Muga food plants nursery (Nursery unit)	28
b	Assistance for maintenance of existing Muga food plantation (acre)	100

c. Post-cocoon Technology (PCT)

In order to improve the quality and productivity of the silk yarn and fabrics, CSB is implementing various Post-cocoon Technology components under CDP covering reeling, spinning, weaving and marketing sectors. The details of the PCT components implemented under CDP and their achievement during 2014-15 are given in the table below:

#	Name of the Scheme / Component	Achievement
Mulberry		
1	Support for construction of Reeling Sheds	
A	Improved Cottage basin units	
a	36 ends unit (6 basins of 6 ends each) (Nos.)	5
b	6 basins unit (10 ends per basin) (Nos.)	22
c	10 basins unit (10 ends per basin) (Nos.)	48
2	Support for motorized charkha to dissuade child labour (Nos.)	18
3	Support for establishment of improved cottage basin reeling units	
a	36 ends unit (6 basins of 6 ends each) (Nos.)	9
b	48 ends unit (6 basins of 8 ends each) (Nos.)	50
4	Support for establishment of multi-end reeling units	
a	6 basins unit (10 ends per basin) (Nos.)	20
b	10 basins unit (10 ends per basin) (Nos.)	34
c	Support for existing multi-end units for procurement of additional equipments/ re-conditioning (Nos.)	48
5	Support for establishment of automatic reeling units	
a	200 ends unit (Nos.)	8
b	400 ends unit (Nos.)	3
6	Support for establishment of automatic dupion reeling units (142 ends) (Nos.)	2
7	Assistance for twisting units (480 ends) (Nos.)	47
8	Interest subsidy on working capital loan sanctioned by banks to reeling units (Nos.)	35
9	Incentive for production of bivoltine silk	
a	Gradable bivoltine silk reeled on multi-end reeling units (Rs.100/- per kg.) (kgs.)	73.007/mts
b	2 A grade & above bivoltine silk reeled on automatic reeling units (Rs.150/- per kg.)(kgs.)	0.490 MTS
Vanya		
10	Support for Vanya reeling/spinning sector	
a	Reeling cum twisting machines (Nos.)	318
b	Wet reeling machine (2 basins of 6 ends each) (Nos.)	8
c	Two in one Reeling cum Twisting machine (Nos.)	70
d	Tasar cocoon sorting machine for Co-operatives/SHGs (Nos.)	13
e	Motorized / Pedal operated spinning machine (Nos.)	437
f	Solar operated spinning machine (Nos.)	50
General (Mulberry-70% & Vanya-30%)		
11	Providing services of Master reelers/Technicians	18

Post-yarn (Mulberry-70% & Vanya- 30%)		
12	Support for handloom sector	
a	Loom upgradation through jacquards and other equipments developed by CSTRI (Nos.)	585
b	Pneumatic lifting mechanism for handlooms developed by CSTRI	120
13	Support for setting up of Common Facility Centre for yarn dyeing & fabric processing	
a	Computer Aided Textile Designing (CATD) (Nos.)	106
b	Tub Dyeing - 25 kg. capacity units (Nos.)	1
c	Tub Dyeing - 50 kg. capacity units (Nos.)	3
d	Arm Dyeing - 50 kg. capacity units (Nos.)	10
e	Fabric Processing - 250 kg capacity units (Nos.)	2
(i)	Zero discharge type (5000 litres/day) (Nos.)	4
(ii)	Discharge to ground type (5000 litres/day) (Nos.)	2
14	Providing services of master weavers/designers/technicians	
a	Master weavers/designers (Nos.)	18
Marketing (Mulberry- 70% & Vanya- 30%)		
15	Support to states for creating/upgrading marketing infrastructure for cocoon and raw silk (states/agencies)	4
16	Support for setting up of hot air driers	
a	50 kg. capacity units (Electrical) (Nos.)	49
b	100 kg. capacity units (Electrical) (Nos.)	26
c	50 kg. capacity units (Multifuel) (Nos.)	2
d	100 kg. capacity units (Multifuel) (Nos.)	1
e	2000 kg. capacity conveyor hot air dryer (Imported) (Nos.)	1

d. Support Services

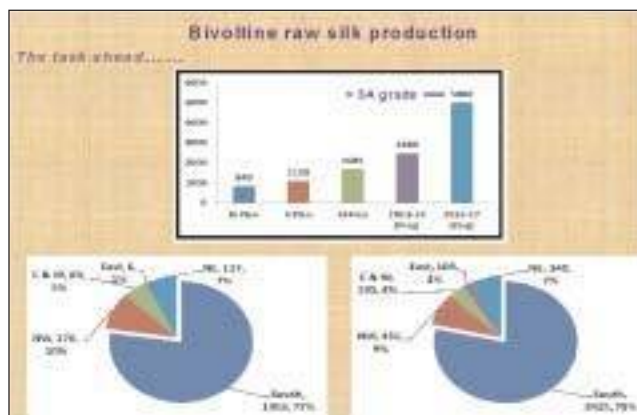
#	Name of the Scheme / Component	Achievement
1	Crop Insurance Support (For all Sectors)	8536
2	Publicity for sericulture	Rs.36.70 lakh spent
3	Health Insurance Programme for sericulture farmers and workers (Policies)	5000
4	Capacity building for sericulture sector (Includes all training and exposure visit to CSB, States and other Stakeholders)	
a	Beneficiary Empowerment Programme (BEP) (Nos.)	7724
b	Sericulture Resource Centres (SRC) (Nos.)	27
c	Skill Training & Enterprise Development Programmes (STEP) (No. of batches)	17
5	Developing Community Based Organizations (CBOs) in line with Resham Doot Concept (No. of SHGs)	138
6	Support for Convergence Activities for Sericulture Development - Cluster Development Projects (Cluster projects)	222
7	Special Initiatives (Flexi Fund) – Token Provision	Rs. 240.30 lakh spent

3.2.1.3 Implementation of Scheduled Caste Sub-plan (SCSP) and Tribal Sub-plan (TSP)

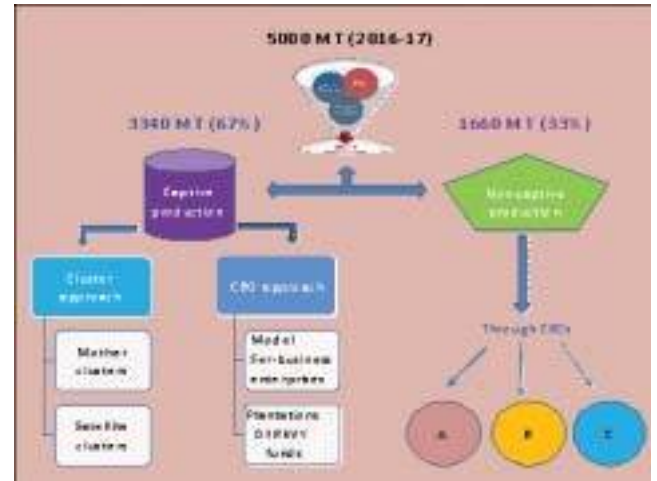
The objectives of the programme include substantial reduction of poverty and unemployment creating productive assets, human resource development and arrest exploitation through physical and financial security among the scheduled castes and scheduled tribes. During 2014-15, an amount of Rs. 25.00 cr. and Rs. 6.59 cr. released to the states under Scheduled Castes Sub-Plan and Tribal Sub-Plan respectively as per the budget approval by MoT.

3.2.1.4 Bivoltine Sericulture in India

During XII Plan, the foremost thrust would be to augment the import substitute silk in the country and to increase the production of BV silk to 5000 MT from the current production level of 1685 MT. To achieve the target, Central Silk Board in association with State Sericulture Departments has planned to organise 172 Bivoltine Clusters to produce about 3340 MT of Bivoltine Silk during XII Plan through clusters besides concentrating in Non-Captive areas to produce remaining 1660 MT. The current status of bivoltine raw silk production and its projections to the end of XII Plan are indicated below (Fig-1).



And the mechanism to achieve the targeted bivoltine raw silk production upto the end of XII Plan is indicated in Fig.2.



The achievement under cluster promotion programme during the year is detailed as under :

- The BV Cell at CSB Hqs as the nodal agency and the Directors of CSRTI, Mysore/Berhampore/Pampore/NSSO, Bengaluru are monitoring the implementation of 172 clusters and 27 IVLPs in close coordination with respective State DoSs with role clarity to different stakeholders.
- All the dfls are properly incubated and chawki reared through identified CRCs and only chawki worms are distributed to the identified farmers.
- Monitoring of CPP was done through Crop Review Meetings, Joint Coordination Committee Meetings by BV Cell of CSB and established effective coordination with different stake holders.
- With the joint concerted efforts, the production of bivoltine raw silk has reached to 3766 MT during the year registering a growth rate of 108%.
- About 2353 MT of raw silk has been produced through 172 clusters.

The details of state-wise progress of Bivoltine Silk production for 2014-15 are given below :

Production of bivoltine raw silk through captive and non-captive areas during 2014-15

Sl. No.	Name of the State	Clusters	Raw Silk output (MT) during 2014-15		
			Captive area	Non-captive area	Total
Southern zone					
1	Karnataka	46	895	309	1204
2	Tamil Nadu	28	692	515	1207
3	Andhra Pradesh	13	464	31	495
4	Telangana	4	45	6	51
5	Maharashtra	9	113	86	199
6	Kerala	2	7	0	7
	TOTAL	102	2216	947	3163
North-western zone					
1	Jammu and Kashmir	25	36	111	147
2	Uttarakhand	7	7	22	29
3	Himachal Pradesh	8	10	20	30
4	Punjab	1	1.3	2.7	4
5	Haryana		0	0.3	0.3
	TOTAL	41	54	156	210.3
Central-western zone					
1	Madhya Pradesh	5	18	50	68
2	Uttar Pradesh	8	30	57	87
3	Chhattisgarh	0	0	0.45	0.45
	TOTAL	13	48	107	155.45
Eastern zone					
1	West Bengal	4	10.4	16.6	27
2	Odisha	3	0.3	1.7	2
3	Bihar	1	0	0.35	0.35
	TOTAL	8	10.7	18.65	29.35
North-eastern zone					
1	Assam & BTC	3	8	17	25
2	Mizoram	1	0	32	32
3	Nagaland	1	2.5	3.5	6
4	Manipur	2	11.5	85.5	97
5	Tripura	1	1.7	23.3	25
6	Sikkim	-	0	5	5
7	Andhra Pradesh	-	0	2	2
8	Meghalaya	-	0	16	16
	TOTAL	8	23.7	184.3	208
	GRAND TOTAL	172	2353	1413	3766.1

3.2.1.5 Vanya Cluster Programme

XII Plan has envisaged production of 9,000 MT of Vanya silk and emphasized the need for proper intervention in critical areas. Central Silk Board in association with State Sericulture Departments has planned to organise 50 Vanya Clusters to produce about 400 MT of Vanya Silk during XII Plan technology demonstration and dissemination besides concentrating in Non-Captive areas for the remaining 8600 MT. CTRTI, Ranchi; CMERTI, Lahdoigarh; BTSSO, Bilaspur and MSSO, Guwahati have been entrusted to monitor the clusters in close coordination with DoSs. Based on the response received from the Vanya silk producing states, 50 clusters and respective CDFs (45 clusters in pre-cocoon and 5 clusters in post-cocoon sectors) have been identified by CSB and the DOSs to ensure completion of benchmark survey and diagnostic studies & preparation of cluster projects in harmony.

Two Orientation Workshops have been organized on 19th August, 2014 at Ranchi and on 25th September, 2014 at Guwahati for bringing awareness and capacity building of Cluster Development Facilitators (CDFs) and state officials to take off the implementation process. Central assistance has been released to the states to start the implementation. Detailed guidelines were issued for cluster level, state level and institute level committees for implementation and periodical review of progress. Progress in muga & eri clusters was reviewed on 27th November, 2014 at Jorhat and those of tasar clusters were reviewed on 26th February, 2015 at Ranchi to expedite the implementation process. Training of beneficiaries has been initiated in different muga and eri clusters.

3.2.1.6 Vanya Silk Market Promotion Cell

Vanya Silk Market Promotion Cell (VSMPC) was established under CDP with an objective of providing input support to Vanya silks in the areas

of market promotion, product development and diversification. The activities of VSMPC continued during 2014-15 focusing on generic, brand and market promotion of Vanya silks as summarized below :

- **Organizing Vanya Silk Expos:** VSMPC in association with SMOI organized Silk Mark - Vanya Silk Expos at Trivandrum, Hyderabad, Bengaluru and Chennai with a special focus on brand and market promotion of Vanya Silks. This apart, Vanya Silks Theme Pavilion was also organized and Vanya Silk products displayed for bringing awareness among the consumers.
- **Participation in exhibitions:** VSMPC has participated in 7 Silk Mark Expos – held at Tiruvananthapuram, Hyderabad, Bengaluru, Chennai, Cochin, Belagavi and Jammu. VSMPC in association with CSTR, Bengaluru; ESSO, Guwahati; CSR&TI, Mysuru and CTR&TI, Ranchi & their nested units with exclusive Vanya Silk Theme Pavilions in all the 7 Expos. The Generic and Brand promotion of *Vanya Silks* is being done through these exhibitions. Exclusive *Vanya Silk* products developed were displayed in the theme pavilions.
- **Product development and commercialization:** VSMPC has developed Thermal wear from eri silk under the Collaborative project with AIFD Bengaluru. These products displayed in Expos, Interaction meets and fashion shows. VSMPC and P3D jointly developed new products, viz., Linen x Gicha, Throwster x Tasar Katia, Mulberry x Muga, Tasar x Muga combinations. 56 products under “100 days programme” were developed. Product development was done in Chanderi cluster using eri, tasar and muga spun yarn in Chanderi sarees as weft in silk products. These products have been developed in the Chanderi, Madhya Pradesh

clusters. VSMPC co-ordinated in development of silk products with traditional lambani embroidery work in Sandur cluster (Bellary Dist of Karnataka). VSMPC has interacted with the manufacturers and exporters in Bengaluru, Tirupur, Erode, Bhagalpur and other places to apprise them of commercializing the new products.

➤ **E-listing and e-marketing:** E-listing of diversified products developed by VSMPC & P3D and e-marketing of these designs facilitated e-marketing of Vanya silk products of primary producers/weavers/Co-operative societies in association with M/s. Gocoop, Bengaluru. An initiation has been made in association with SMOI and M/s. Gocoop, Bengaluru for e-listing and e-marketing of Vanya silk products of primary producers / weavers/Co-operative societies. In this regard, 5 firms from Bhagalpur, Bihar area and 5 firms from Assam state have been registered with M/s. Gocoop during the year under report.

➤ **Promotion of organic silk:** The Vanya silk manufacturers are being encouraged in promoting Vanya silks as Organic silks and VSMPC has been facilitating the agencies with relevant information to get accreditation of Organic / Eco silk. The information in the form of CD has been forwarded to the Vanya Silk Logo Authorized Users for reference and further necessary action. VSMPC has collected the information on:

- **Indian standards for organic textiles** published under National Programme for Organic Production by Department of Commerce, Ministry of Commerce and Industries, New Delhi includes the standards for Silk.
- **Organic vanya silk certification** – A one stop certification service is available from M/s. One Cert Asia

Agri Certification Pvt. Ltd., Jaipur, Rajasthan.

- List of Accredited Certification bodies under NPOP.

The above information on Organic Silk Certification norms, procedures and formalities has been provided to the DoSs and other agencies/entrepreneurs.

➤ **Vanya silk shoppes:** Vanya silk shoppes allotted to the beneficiaries continued to function *i.e.*, one in Bengaluru and two in New Delhi. Vanya silk shoppes in New Delhi and Bengaluru have been allotted to new beneficiaries for the period 2014-17 with revised ToR enhancing the period of allotment from 24 to 36 months and maintenance fee from Rs. 8000 to Rs. 15000 in case of New Delhi shoppes and to Rs. 10000 for Bengaluru shoppee. Wide publicity has been given to Vanya Silk Shoppes through print media; web-site etc., for sales promotion and its regular maintenance is undertaken. Support is also extended for preparing suitable advertisement, providing linkages with designers, boutiques and bulk consumers, etc.

➤ **Collaborative projects** drawn with external agencies are indicated as below:

- **Design and development of thermal jackets and undergarments using eri silk** by Army Institute of Fashion and Design, Bengaluru with an out lay of Rs. 8.00 lakh has been concluded. The thermal undergarments and jackets developed under the project have been displayed in the Interaction meet / fashion show and the Vanya silk expos.
- **The project entitled, “Development of knitted and woven diversified products from tasar, eri and muga spun yarns”** by CSTRl, Bengaluru undertaken at a total cost of Rs. 3.95

lakh is under progress. The eri silk knitted T-shirts and ladies' tops have been developed, while the development of muga and tasar knit wear products are under progress.

- **Development of eri silk/coir union blended products** undertaken jointly by CCRI, Coir Board, Kalavoor and CSTRI, Bengaluru with a total outlay of Rs. 3.00 lakh. Fabric was produced using the blended yarn of coir and eri noil silk as weft and coir yarn/ cotton yarn as warp, to identify suitable combination for manufacture of diversified products. Products like jackets, carpets and bags etc., produced by using the hand spun and machine spun yarn.
- **Development of eri silk inner/intimate wear for commercialization** through NIFT-TEA Knitwear Fashion Institute, Tirupur at a cost of Rs. 2.80 lakh has been taken up and the project is under completion stage.

3.2.1.7 Product Design, Development and Diversification (P3D)

The activities under Product Design Development Diversification (P3D) continued with 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.

I Product development

- The following silk and silk blended fabrics have been developed
 - i) Silk cotton blends - 60% & 40% and 70% & 30%

- ii) Silk modal fabrics - 60% & 40%
- iii) Linen tasar and Linen katia fabric
- iv) Silk x bamboo fabric.

The apparels and life style products are developed from the above fabrics in association with fashion designers.

- The P3D and VSMPC in association with CSTRI, Bengaluru, Sandur Kushala Kala Kendra and French visual artist implemented the project on product development in Sandur sponsored by SMOI involving the tribal lambani artisans and developed the following products. The products developed by lambani tribal artisans were released by Shri Santosh Kumar Gangawar, Hon'ble Minister of State for Textiles (Independent Charge), Govt. of India, during ISC Congress held in Nov. 2014 for commercialization.

Other products

- Garments with traditional Lambani stitches in silk fabric and silk embroidery threads.
- Life style products like quilts, cushion covers and table runner etc., with mirror and thread work.
- Accessories like bags, wall hangings and pouches.
- The P3D in association with the CSTRI, Bengaluru and NIFT, Bhopal has developed the Chanderi sarees with Kora silk weft and spun silk (all four varieties silk). The products were shown to Mruganayane (MP Federation) and other manufacturers, traders for commercialization and products are highly appreciated by the manufacturers.
- Mulberry crepe sarees with natural Bagh prints have also been developed and commercializing of these products is under progress.
- Developed natural dyed fabrics in tasar and eri in association with M/s Naturals, Erode

for development of natural dyed products. Development of products from natural dyed fabrics is under progress.

II. Collaborative projects on product development with other Institute

➤ Two projects on 'Development of Silk Union Fabrics and study of their properties' and 'Design and Development of Fashion Garments using varieties of silk' have been implemented during 2014-15 in coordination with AIFD, Bengaluru. The photo-shooting of garments developed and documentation work is under progress.

➤ A project on "Contemporary Ideation", in collaboration with NIFT, Bengaluru has been taken up. The project has been completed. The NIFT, Bengaluru has handed over the garments, final report and utilization certificate to P3D.

III. Commercialization of products: Silk blended products, silk tasar clutch purses and Lambani art work bags have been commercialised through HHEC. P3D has co-ordinated with manufacturers and commercialising partners in development and production.

IV. Participation in exhibitions: P3D actively participated in Theme Pavilions during the Vanya-Silk Mark exhibition at Thrivananthapuram, Cochin, Hyderabad, Chennai, Bengaluru, Belgavi and Jammu & Kashmir.

V. Other activities

- Coordination in designing the layout plan for renovation/extension of P3D/reception area at CSB entrance.
- Participation in the ISC congress held at Bengaluru.
- During the period the following dignitaries; Shri Santosh Kumar Gangawar, Hon'ble Minister of State for Textiles (Independent Charge), Govt. of India; Shri S.K. Panda, Textile Secretary; Shri B.P. Pandey, AS&FA, Ministry of Commerce & Textiles; Dr. Anieff Salleh, Professor, University of Malaysia and Shri Nirmal Sinha, CMD, HHEC, New Delhi visited the P3D cell and appreciated the activities and efforts in development of new silk products and commercialization of products.

Projects with Funding from other Organizations



4.1 Integrated Sericulture Development Project under NERTPS

North East Region Textile Promotion Scheme proposed by Ministry of Textiles, Government of India is a project based strategy for boosting the textile sector implemented in North-eastern region in addition to regular schemes during the XII Plan. The expenditure under this scheme will be met from the 10 per cent budget outlay being earmarked for the North-eastern states. The scheme has been approved by the Planning Commission with an allocation of Rs. 1038.10

facilitated North-eastern states with formulation and submission of specific projects. EFC at Ministry of Textiles, Govt. of India has considered and sanctioned 10 projects with a total outlay of Rs. 445.64 cr. for implementation during 2014-15 to 2016-17 as detailed below:

4.1.1 Manipur Sericulture Project (Mulberry)

The Project was under consideration of the Ministry of Textiles, Govt. of India since the conception of the umbrella scheme, viz., "North East Region Textile Promotion Scheme". The project was sanctioned with an outlay of

							Rs. In Lakh
#	State	GOI	Sharing Pattern			Total	Funds released by GOI - 2014-15
			MGNREGS	State	Benef.		
1	Assam	4741.78	1152.66	431.11	341.78	6667.33	0.00
2	BTC	2467.60	611.02	227.70	186.12	3492.43	104.36
3	Arunchal Pradesh	1842.22	0.00	0.00	0.00	1842.22	719.26
4	Manipur						
a	Mulberry	12660.00	0.00	1294.74	1021.00	14975.75	3008.03
b	Mulberry/ Eri	2467.49	190.24	228.37	153.08	3039.17	0.00
	Total (a+b)	15127.49	190.24	1523.11	1174.08	18014.92	3008.03
5	Meghalaya	2191.30	485.73	197.12	141.68	3015.82	101.37
6	Mizoram	2449.00	436.93	208.93	154.35	3249.20	141.43
7	Nagaland	2266.15	514.72	203.00	162.73	3146.60	127.65
8	Tripura	3320.12	983.90	281.44	209.13	4794.58	141.46
8a	Tripura (Printing)	341.00	0.00	0.00	0.00	341.00	0.00
	Total	34746.66	4375.20	3072.41	2369.87	44564.10	4343.56

cr. and was subsequently approved by the EFC on 8th April, 2013 and CCEA on 7th November, 2013. The Scheme covers all textile sub-sectors, the traditional VSE sectors of Handlooms, Handicrafts, Sericulture, Jute, allied fibres as well as the Powerloom and the Garmenting/Made-up sector. Accordingly, Central Silk Board has

Rs. 149.758 cr. for a period of 3 years w.e.f., 2014-15 to 2016-17 with a sharing pattern of Govt. of India for Rs. 126.60 cr, State for Rs. 12.947 cr. and Beneficiary for Rs.10.210 cr. while the Ministry of Textiles, Govt. of India remains as the executing agency and DoS, Manipur is the implementing

agency of the project. The project is expected to yield 638 MT of mulberry raw silk with a value of Rs. 159.38 cr. during the entire project period. Further after attaining full potential, the project shall facilitate production of 202.5 MT mulberry raw silk/year with a value of Rs. 50.62 cr. at current prices. An amount of Rs. 30.08 cr. has already been released to Manipur state during the year 2014-15 for meeting the project implementation expenditure. The project progress is briefly discussed below;

- 500 beneficiaries have been identified for plantation development with 1 acre each, 140 for irrigation facilities, 500 for construction of rearing houses with mounting halls and beneficiary training as per the 1st year target.
- 4.6 MT cuttings of improved mulberry varieties were procured and 20 Kissan nurseries were raised in the project districts. The saplings have been utilized for developing the plantation in 200 ha and maintenance of 640 ha of existing plantation.
- 140 ha of mulberry plantations have been supported with irrigation facilities. Construction of 500 Adult Rearing houses has been taken up for those beneficiaries who raised mulberry plantation, construction of 425 nos of mounting halls and repairing of 800 existing portable Rearing Houses is under progress.
- 90 newly recruited and trained persons have been deployed in the project districts for supervising the project implementation. 200 new and 200 existing farmers of the project area have been trained. Apart from this, 5 units of Door to Door service agents have been identified and supported.
- 2 Commercial grainages at Khonghampat and Sangaipat have been identified for equipment support to achieve the enhanced production target of 10 lakh dfls/year.

- Site selection for construction of Technical Service Centres at Bishnupur and Thoubal districts and Farmers' Training Centre at Sangaipat has been made.
- Rearing of 11.69 lakh dfls in the project area through 2500 farmers produced 615.45 MT of mulberry cocoons with an yield of 52 kg cocoons/100 dfls. Improvement was observed both in cocoon production and productivity.
- An amount of Rs.13.47 cr. of GOI share has been utilized during the year 2014-15.

The project is under progress

4.1.2 Integrated Sericulture Development Project for the Development of Silk Industry in Arunachal Pradesh

The Integrated Sericulture Development Project for Arunachal Pradesh has been sanctioned by the Ministry of Textiles, Govt. of India with an outlay of Rs. 34.72 cr, for a period of 3 years w.e.f. 2014-15 to 2016-17. The total cost of the project includes Rs. 16.306 cr. for the CDP components of Central Silk Board and Rs. 18.42 cr. for components proposed under NERTPS, with a sharing pattern of CDP expenditure of Rs. 13.19 cr. from Central Silk Board, Rs. 1.67 cr. from the state and the beneficiary contribution is Rs. 1.44 cr.

An amount of Rs. 18.42 cr. allocated for NERTPS components primarily aims towards strengthening of seed production and post-cocoon processes in all the four silk sectors, *i.e.* Mulberry, Eri, Muga and Oak Tasar. While the Ministry of Textiles, Govt. of India is the executing agency and Department of Sericulture, Govt. of Arunachal Pradesh has been nominated as the implementing agency of the project. The project is expected to support production of 78.94 MT of raw silk (Mulberry - 26.82 MT, Eri - 43.30 MT, Muga -2.16 MT and Oak tasar - 6.67 MT) with a value of Rs. 20.62 cr. during project period and

35.95 MT raw silk/annum (Mulberry-13.12 MT, Eri-17.28 MT, Muga-2.88 MT, Oak Tasar – 2.67 MT) once all plantations are ready with a value of Rs. 11.33 cr. at current prices. Ministry of Textiles, GOI has already released its share of Rs. 7.19 cr to the state during 2014-15 to implement the project. The project progress is briefly discussed below:

- Nurseries were established for raising 30,000 Kesseru seedlings, 40,000 Som seedlings and 87,000 mulberry saplings.
- Mulberry plantation has been taken up in 650 acres during 2012-14 with the assistance from CDP and other sources for optimal utilization of the proposed infrastructure under NERTPS.
- Mulberry farms and silkworm seed production and demonstration centres at Ziro, Sille and Balijan are under up-gradation with the funds amounting to Rs.1.02 cr. released to RWD.
- For *in situ* conservation of Muga silkworm, forest patches have been identified near Nongkhong Muga farm in Lohit district. 31000 som seedlings have been raised in the Nongkhon farm which will be ready for plantation during next monsoon.
- Muga Seed Production Centre at Nongkhong Farm in Lohit district, State sericulture farms at Sille, Laptap & Naharlagun and Oak Tasar farm at Darrang in West Kameng have been identified for upgradation. Works are under progress.
- Common Facility Centres for weaving shall be established at Naharlagun, Pangin & Nacho. An amount of Rs. 0.19 cr. has been released for one unit at Naharlagun.
- Technical Reports for Centre of Excellence and Field Experimentation Station are being prepared by Consultants.
- 20 facilitators trained by CMERTI, Lahdoigarh have been appointed for monitoring the field activities.

- 510 beneficiaries have been identified from three districts for field training.
- Rearing of 0.82 lakh mulberry, 3.55 lakh eri and 1.62 lakh muga dfls has produced 26.4 MT mulberry cocoons, 31.9 MT eri shells and 81 lakh muga cocoons resulting into a total raw silk production of 28 MT during 2014-15.
- Fund amounting to Rs. 2.45 cr. has been utilized. The activities are under progress.

4.2 Projects funded by other Ministries

4.2.1 Special SGSY Project for Development of Tasar and Eri Culture in Bihar

A special SGSY Project for development of tasar and eri culture was implemented in Banka district of Bihar state, with financial assistance from Ministry of Rural Development, Govt. of India from the year 2003-04. Central Silk Board is the Executing Agency, which closely monitors the implementation and extends the necessary technological support through units of CTR&TI, Ranchi on pre-cocoon aspects, BTSSO, Bilaspur for seed requirement and CSTRI, Bengaluru on post-cocoon activities. CSB also meets the entire requirement of nucleus seed and part of the basic seed through the BSM&TCs of BTSSO. The project is being implemented in the State by Professional Assistance for Development Action (PRADAN), an NGO. All the major project activities were completed during the year 2013-14. During 2014-15, evaluation and documentation activities were taken up as detailed below :

- A joint field appraisal team constituted by CEO, BRLPS has taken up impact appraisal of the project.
- Socio-economic impact evaluation carried out by a third party, M/s. Frame Works, Bhopal was documented.
- Documentation of the best practices across the tasar silk value chain with key learnings

in special SGSY/ NABARD-TDF project areas in Bihar and Jharkhand by a consultant was constituted and completed during the year.

- Documentation of success stories in special SGSY/ NABARD-TDF project areas in Bihar and Jharkhand was taken up during the year.
- ISO Certification of the Basic Seed Production Units established under the Special SGSY and NABARD-TDF projects in Bihar and Jharkhand was completed.

4.2.2 Special SGSY project for development of mulberry sericulture in Uttarakhand

The Special SGSY Project for development of mulberry sericulture in Uttarakhand was sanctioned by the Ministry of Rural Development, Government of India at a total cost of Rs. 9.18 cr. for implementation over a period of 5 years (2007-08 to 2011-12) by Directorate of Sericulture, Govt. of Uttarakhand. The project has also been sanctioned an extension upto 2014. The funds are shared by MORD for Rs. 4.17 cr. CSB for Rs. 2.99 cr. State for 0.80 cr, Bank credit for Rs. 0.76 cr. and the beneficiary for Rs. 0.45 cr. While the Central Silk Board is the executing and coordinating agency. The project is being implemented by DoS, Govt. of Uttarakhand through an NGO in Nainital district and through the Grameen Krishi Vikas Samittee (GKVS) in Udham Singh Nagar district. The funds released to DoS, Uttarakhand include MORD - Rs. 3.99 cr. CSB - Rs. 2.96 cr. State - Rs. 0.80 cr. and mobilization of Bank Credit for Rs.0.72 cr. and beneficiary share of Rs. 0.33 cr. for implementation of the project activities. The project achievement upto March, 2015 is as follows :

- 50 vermi-composting sheds yielded 701.5 MT of vermi-compost since inception.
- 487 acres (974 units of ½ acre) of mulberry tree plantation and 26 units of bush plantation with S-146 variety have been raised in Nainital and Udham Singh Nagar districts.

- All the 9 CRCs constructed at Bichpuri, Nathunagar, Chankpur, Mankanthpur, Ranikota, Rajpura Kyari, Vijayapura and Pachawala are functioning.
- 1000 swarojgaries have been supported for obtaining credit for construction of rearing houses and rearing appliances. They have been trained on plantation maintenance and silkworm rearing techniques. Capacity building training programme was also organized for 85 office bearers of SHGs in three batches. 500 Swarojgaries have been given exposure/orientation training on different sericulture practices at Dehradun, Himachal Pradesh, J & K and Bengaluru/ Mysuru. Also 10 Krishimelas were organized.
- Rearers' passbooks have been supplied to all the swarojgaries with plantation for recording details of input support and activity performed by them under the project.
- Since inception, 373550 dfls were reared and 127.90 MT of cocoons were produced.

4.2.3 Integrated Tribal Development Programme for Chakai Block of Jamui District of Bihar

The project is being implemented in tribal dominated *Dulampur, Nauwadih, Faritazadihi and Gajhi* panchayats of *Chakai Block of Jamui* by creating tasarculture based forward and backward linkages for sustainable livelihood development. Total outlay of the project is Rs. 1274.91 lakh, of which NABARD, Patna is funding Rs. 837.72 lakh (65.71%), CSB share of Rs. 170.91 lakh (13.41%), Beneficiary share is Rs. 217.29 lakh (17.04%) and Loan from NABARD amounts to Rs. 49 lakh (3.84%), for a period of five years starting 2009-10 with CDP funding proposed only for the XI Plan period *i.e.*, 2009-10, 10-11 and 11-12 at Rs. 20.675 lakh, Rs. 86.517 lakh and Rs. 63.717 lakh, respectively.

While NABARD has released Rs. 241.34 lakh, CSB has released Rs. 158.975 lakh to

PRADAN being the CDP share for the years 2009-12, of which Rs. 62.79 lakh has been utilized.

Under tasar sector, 2544 acre of tasar host plants have been raised with cattle proof trenches, soil conservation works carried out in 2069 acres and 197 water harvesting structures have been raised. 49 pumpsets, 72 sprayers and 183 weeders have been provided to take care of inter-cultural operation in sericulture and horticulture activities. 89 SHGs were formed, 15 membership training, 1 TOT for SHG training, 7 Auditor training, 29 group accountant trainings and 9 cluster member's training were organized till the end of the year. 735 rearers, 2 staff of PIA, 16 batches of farmers in nursery raising, 20 batches in vegetable cultivation and 45 batches in SRI/Improved paddy cultivation were trained during the year. 1830 beneficiaries were covered under exposure visit. Other interventions, viz., SRI, vegetable cultivation, soil moisture conservation, horticulture have been taken up as per the target and objectives of the project.

4.2.4 Mahila Kisan Sashaktikaran Pariyojana (MKSP) Projects for tasar development

The initiatives of special SGSY and NABARD in Bihar and Jharkhand have amply demonstrated the livelihood potential of tasar culture especially for tribal communities. The demand for accessing tasar based livelihoods is now clearly perceivable in the rural areas. Building on this current context, the CSB, PRADAN and BAIF have come up with the idea of undertaking multi-state ventures to reach out to a large number of rural households and create impact on a significant scale both in terms of livelihood creation at the family level and unleashing sectoral growth in tasar culture. After a series of discussions on the issue, the MoRD has agreed to CSB's proposal for formulation of projects for considering financial support under the MKSP as a logical extension of the early phases of intervention.

Accordingly, CSB has formulated seven Projects for tasar development for the states of Jharkhand, Odisha, West Bengal, Chhattisgarh and Bihar in coordination with PRADAN, in Maharashtra in coordination with BAIF, Pune and in Andhra Pradesh & Telangana in coordination with SERP & Kovel.

The project proposes to create over 36,000 sustainable livelihoods for the marginalized households, specially seeking involvement of scheduled tribe communities and women in selected 33 districts of 8 states. The details of the projects are given below:

1. A multi-state project for promotion of large scale tasar based livelihood in Jharkhand, Odisha, West Bengal, Chhattisgarh and Maharashtra with an outlay of Rs. 60.80 cr with a project grant of Rs. 52.211 cr. (Rs. 39.13 cr. from MoRD & Rs.13.09 cr. from CSB) covering 27540 beneficiaries has initiated its activities during 2013-14.
2. A MKSP sponsored project for promotion of tasar culture in Andhra Pradesh & Telangana formulated by CSB and implemented by SERP and Kovel foundation has initiated its activities in 5 districts covering 5972 beneficiaries with project grant of Rs. 10.64 cr. (MoRD: Rs. 7.84 cr. & CSB: Rs. 2.79 cr.).
3. A MKSP project formulated by CSB for tasar promotion in Bihar covering four blocks in Banka district of Bihar covering 3170 beneficiaries with a project grant of Rs. 8.93 crores (MoRD: Rs. 6.69 crores & CSB; Rs. 2.23 crore) is being processed by Bihar Rural Livelihood Promotion Society-Jeevika (BRLPS), Patna and is implementing by PRADAN. The project was initiated during 2014-15.

Progress of the project: MORDE has approved the multi-state project during August, 2012 and has released Rs. 9.78 cr. to CSB in two tranches of which Rs. 9.29 cr. has been released

to the PIAs, the PRADAN & BAIF during 2013 to 15 and the utilization certificates for Rs. 5.11 cr. (55.00%) has been received. CSB has also released a total amount of Rs. 3.95 cr. as the

nucleus seed rearers brushed 27000 dfls of nucleus seed to produce 10.21 lakh seed cocoons. 712 private graineurs processed 16.269 lakh seed cocoons and produced

Sl. No.	Project State	MoRD share (Rs. in Lakhs)				CSB share (Rs.in Lakhs)		
		Total share	Amount received (25%)	Amount released to PIAs (yr-1)	UC submitted by PIAs	Total Share	Amount released to PIAs	UC submitted by PIAs
1	Jharkhand	1795.460	448.875	435.017	188.678	598.486	189.988	189.988
2	Chhattisgarh	598.703	149.675	145.761	67.069	253.211	64.146	64.146
3	Odisha	358.586	89.650	86.250	57.660	133.599	42.017	42.017
4	West Bengal	400.399	100.100	97.085	78.638	119.447	29.919	29.919
5	Maharashtra	759.800	189.950	165.273	119.076	204.286	69.230	69.229
6	AP &Telangana		-	-		278.642	62.498	62.498
	Total	3912.948	978.250	929.386	511.121	1309.029	395.299	395.299

CDP share to all the PIAs including SERP during 2013-14 for which 100% UC has been received. The details of amount released under the project are given in the table.

All the preparatory works like land preparation, nursery raising, inputs supply for host plants for seed rearing, raising plantation and arrangement for basic, commercial and nucleus rearing & supply of dfls, construction works of private grainages etc., have been attended.

15436 farmers covered under the project include 13232 STs (85.72%), 610 SCs (3.95%) and 1594 minorities (10.32%). 11950 existing members of SHG and mahila kisans were mobilized into 538 informal producer groups. The mahila kisans were from 578 hamlets, 397 revenue villages, 52 blocks and 23 districts of the Project states.

12.967 lakh tasar host plant seedlings were produced by 293 mahila kisans through 75 kisan nurseries for raising 644 ha. of block plantations by 895 plantation farmers.

83600 dfls of basic seed procured from BTSSO and BSPUs were reared by 1223 seed rearers to produce 22.53 lakh seed cocoons. 312

3.223 lakh commercial dfls @ cocoon:dfll ratio of 5.1:1. 8410 commercial rearers brushed 18.532 lakh dfls procured from the private grainages of MKSP/special SGSY projects/DOSs, to produce 80.41 lakh reeling cocoons.

Various capacity building training programmes were organized under the project, viz., technical training (9447nos.), training on sectoral activities like sustainable agriculture and vegetable cultivation (6382 nos.), community resource persons training (615 nos.), on-field training to CRPs (6950 nos.), SHG training (1963 nos.) etc. Further, 1116 beneficiaries under membership and 109 under leadership training were covered. 23 exposure visits and two trainers training programmes were organized. Six training modules were prepared and submitted to NRLM. Besides, the seed act awareness programme was arranged by NSSO, Central Silk Board at Gadchiroli, Maharashtra on 24th June, 2014 and 94 seed farmers attended the programme and registered.

Inception workshops for the states of West Bengal, Maharashtra and Chhattisgarh have been organized in project areas. Base line survey for selection of beneficiaries was

completed for the year-1 and survey process commenced for second year.

CSB as a coordinating agency arranged Project Management Board (PMB) meeting through video conference and reviewed the progress of the project. MoRD has held four quarterly review meetings at NIRD, Hyderabad and reviewed the progress of the project. Joint field visits were undertaken to project areas by Nodal Officers and Project Officers involving DOSs, SRLMs and PIA concerned to address various issues in the implementation, besides, submitted the reports as per schedule.

The MKSP project for Bihar has just initiated its activities during 2014-15 with the release of MoRD share of Rs.0.66 cr. to PIA for implementing various activities. 331 mahila kisans were selected including 170 STs (51.35%), 41 SCs (12.38%) and 120 minorities (36.25%). The beneficiaries covered were from 32 hamlets of 23 villages of a single block. The trained 6 CRPs have imparted training to 331 beneficiaries. 16 producer groups were mobilized. 260 ha. of host plantation were raised during the period.

4.2.5 MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act)

As per the guidelines under MGNREGA, it is proposed to provide employment to the rural poor, through MGNREGA Registered work-force to take up the following sericultural activities for the benefit of the rural poor, BPL and APL as well:

- Development and improvement of plantations in farms and individual lands.
 - Nursery development for mulberry and vanya food plants
 - Raising and maintenance of systematic Vanya food plantations in forest land with vermi-composting facilities
 - Reclamation of waste lands for Vanya food plants in village lands, adapahi lands etc.
- Creation of water sources and development of rain-fed gardens through water conservation techniques, moisture maintenance, etc.
 - Pest management and disease control to plantation.
 - Development of infrastructures for connectivity to the sericulture clusters.
 - Trenching around plantations in North-eastern and hilly regions for cattle prevention.
 - Conservation jobs for undertaking in-situ rearing in Sal forest regions.

Currently, 49 projects have been sanctioned by Govt. of India at a total cost of Rs. 26127.96 lakh for 17 states under convergence.

4.3 Integrated Skill Development Scheme (ISDS)

Central Silk Board, an Apex agency overseeing the development of silk industry in India implements a comprehensive flagship initiative 'Integrated Skill Development Scheme' of Ministry of Textiles with focus on 'skill seeding' and 'skill up-gradation/skill enhancement' for 34,553 beneficiaries during XII Plan through its nine R&D institutes with an allocation of Rs. 39.77 cr. shared by the Govt. of India for Rs. 34.18 cr. and CSB for Rs. 5.58 cr. The CSB has further joined hands with an NGO partner-PRADAN for assistance in implementing the scheme especially in tasar sector during 2013-14 and 2014-15.

Under the project, 66 course activities falling on the silk value chain (from nursery raising, plantation development, silkworm seed production to quality cocoon production and silk reeling, spinning, weaving to dyeing, printing, designing, finishing etc., have been identified in all the four sectors. These courses vary in duration from one week to three months depending on the nature of inputs and are

conducted in all the prominent seri-clusters/pockets of India. During the year 2014-15, all the R&D institutes in coordination with PRADAN have covered 6689 beneficiaries (68.93%), 17157 beneficiaries (85.49%) have been covered

during the year 2014-15, a total of 14 training programmes were organized by Training Division covering around 484 persons. The break-up of the programmes conducted are indicated here under:

#	Name of the prog.	Place	No. of prog	Participants
1	Resource Development Programme	Berhampore (for DoS, Manipur under MSP)	3	90
		Dimapur	1	20
		Aizawl	1	20
		Agartala	1	20
		Guwahati	1	14
		Sub-total	7	164
2	Management Development Programme	Dehradun	1	22
		Bilaspur	1	22
		Berhampore	1	25
		Ranchi	1	22
		Lahdoigarh	1	22
		Imphal	1	35
		Sub total	6	148
3	Technology Up-gradation Programme	Ramdia, Hajo (Assam)	1	172
		Sub total	1	172
	TOTAL	Grand Total	14	484

since inception under which 9792 beneficiaries (57%) could be linked to employment. The scheme has provided better economic returns to the farmers, reelers and other stakeholders through skill seeding and skill refinement/development.

Integrated Skill Training and Enterprise Development Programme (STEP)

Under the component 'Skill Training and Enterprise Development Programmes (STEP)'

4.4 JICA Programmes in India

4.4.1 Follow-up Cooperation Programme on JICA projects (2012-15)

Central Silk Board in coordination with JICA has been implementing a follow-up cooperation since 2012 with an objective to :

- Help conduct further survey and analysis of the present status of performance of the BV silkworm races from breeders' stock down to farmers' level to identify the cause of deterioration if any.

- To help conduct research to develop indigenous small scale (120-200 ends) automatic reeling units
- To help conduct research to develop modified rotary mountages

The outcome of the programme is:

- One way multiplication system for maintenance of silkworm seed as recommended by JICA should be followed meticulously for quality maintenance.
- 10-end Automatic Reeling machine has been developed indigenously. The same is under replication to manufacture 40 ends.
- Rotary mountages with Nylon net collection system has reduced labour

cost up to 50% and found very economical with quality Bv cocoon production. The same is under commercial trial.

4.4.2 Japan Overseas Cooperation Volunteers (JOCV)

CSB is implementing JOCV programme in cooperation with JICA since 07-01-2015 for a period of two years in the field of extension methodology in organizing Self Help Groups/ CBOs involving sericulturists for effective technology transfer in 6 clusters. The following Japan Overseas Cooperation Volunteers under JICA are working with CSB at the locations indicated below:

State	Name of JOCV	Area of Operation
Andhra Pradesh	Mr. Yuki Yamanaka	Hindupur and Madaksira
Karnataka	Mr. Nozomu Aoki	Kanakapura and Banikuppe
Tamil Nadu	Mr. Tadahiro Asai	Berigai & Baglur

Finance & Accounts



5.1 Receipts (Grants-in-Aid) for the year 2014 - 2015

In accordance with Section 9(1) of Central Silk Board Act, 1948, the Central Government released the Grant-in-Aid to the Central Silk Board during the year **2014 - 15** for enabling it to exercise the powers and discharge its functions under the Act. The details of the Grant-in-Aid released by the Government of India, Ministry of Textiles, New Delhi for the financial year **2014 - 15** are as under:

I. NON-PLAN

[Rupees in lakh]

1.	Grants towards Admin., Expenses:	27,917.00
	Total : Non-Plan	27,917.00

II. Plan

[Rupees in lakh]

	<i>1. Export Promotion / Brand Promotion / Technical upgradation by Indian Silk Export Promotion Council & Silk Mark Organization of India</i>	
03.00.31	Grants-in-Aid : General	0.00
03.00.35	Grants towards Creation of Capital Assets	8.33
	Sub-Total	8.33
	<i>2. R & D, Trg., TOT & IT Initiatives</i>	
04.00.31	Grants-in-Aid : General	2401.00
04.00.35	Grants towards Creation of Capital Assets	819.00
	Sub-Total	3220.00
	<i>3. Seed Organisations</i>	
05.00.31	Grants-in-Aid : General	1847.00
05.00.35	Grants towards Creation of Capital Assets	609.00
	Sub-Total	2456.00
	<i>4. Co-Ordination & Mktg. Devpt. (HRD)</i>	
06.00.31	Grants-in-Aid : General	660.00
06.00.35	Grants towards Creation of Capital Assets	182.00
	Sub-Total	842.00
	<i>5. Quality Certification System</i>	
07.00.31	Grants-in-Aid : General	19.00
07.00.35	Grants towards Creation of Capital Assets	3.00
	Sub-Total	22.00
	<i>6-A. Catalytic Devp. Programmes : CSB (CDP)</i>	
01.00.31	Grants-in-Aid : General	333.00
01.00.35	Grants towards Creation of Capital Assets	220.00
	Sub-Total	553.00

	6-B. Catalytic Devp. Programmes : (CDP)	
01.00.31	Grants-in-Aid : General	2757.00
01.00.35	Grants towards Creation of Capital Assets	8831.00
	Sub-Total	11588.00
	7. Catalytic Devp. Programmes : SC	
59.00.31	Grants-in-Aid : General	275.00
59.00.35	Grants towards Creation of Capital Assets	2225.00
	Sub-Total	2500.00
	8. Catalytic Devp. Programmes : ST	
59.00.31	Grants-in-Aid : General	85.00
59.00.35	Grants towards Creation of Capital Assets	574.00
	Sub-Total	659.00
	TOTAL - PLAN	21848.33
	** Carried forward from 2013-14 under the Export Promotion / Brand Promotion Scheme	36.00

III. Project/Scheme Under NE Region & Sikkim

[Rupees in lakh]

	<i>1. R & D, Trg., TOT & IT Initiatives</i>	
04.01.31	Grants-in-Aid : General	916.00
04.01.35	Grants towards Creation of Capital Assets	314.00
	Sub-Total	1230.00
	2. Seed Organizations	
04.02.31	Grants-in-Aid : General	453.00
04.02.35	Grants towards Creation of Capital Assets	147.00
	Sub-Total	600.00
	3. Co-ordination & Mktg. Devpt. (HRD)	
04.03.31	Grants-in-Aid : General	47.00
04.03.35	Grants towards Creation of Capital Assets	13.00
	Sub-Total	60.00
	4. Quality Certification System	
04.04.31	Grants-in-Aid : General	17.00
04.04.35	Grants towards Creation of Capital Assets	3.00
	Sub-Total	20.00
	5. Catalytic Devp. Programmes : [CDP]	
04.05.31	Grants-in-Aid : General	1355.00
04.05.35	Grants towards Creation of Capital Assets	4645.00
	Sub-Total	6000.00
	TOTAL - PLAN [NE]	7,910.00

IV. Grand Total (Non-Plan + Plan + NE)

[Rupees in lakh]

1. Grants towards Admin. Expenses		27,917.00
	Sub-Total	27,917.00
2. Export Promotion / Brand Promotion Technical upgradation by Indian Silk Export Promotion Council & Silk Mark Organization of India		
Grants-in-Aid : General		0.00
Grants towards Creation of Capital Assets		8.33
	Sub-Total	8.33
3. R & D, Trg., TOT & IT Initiatives		
Grants-in-Aid : General		3317.00
Grants towards Creation of Capital Assets		1133.00
	Sub-Total	4450.00
4. Seed Organizations		
Grants-in-Aid : General		2300.00
Grants towards Creation of Capital Assets		756.00
	Sub-Total	3056.00
5. Co-ordination & Mktg. Devpt. (HRD)		
Grants-in-Aid : General		707.00
Grants towards Creation of Capital Assets		195.00
	Sub-Total	902.00
6. Quality Certification System		
Grants-in-Aid : General		36.00
Grants towards Creation of Capital Assets		6.00
	Sub-Total	42.00
7-A. Catalytic Devp. Programmes : CSB (CDP)		
Grants-in-Aid : General		333.00
Grants towards Creation of Capital Assets		220.00
	Sub-Total	553.00
7-B. Catalytic Devp. Programmes : (CDP)		
Grants-in-Aid : General		4112.00
Grants towards Creation of Capital Assets		13476.00
	Sub-Total	17588.00
8. Catalytic Devp. Programmes : SC		
Grants-in-Aid : General		275.00
Grants towards Creation of Capital Assets		2225.00
	Sub-Total	2500.00
9. Catalytic Devp. Programmes : ST		
Grants-in-Aid : General		85.00
Grants towards Creation of Capital Assets		574.00
	Sub-Total	659.00
GRAND TOTAL		57,675.33
** Carried forward from 2013-14 under the Export Promotion/Brand Promotion Scheme.		36.00

5.2 Expenditure for the year 2014 - 15

Expenditure incurred / booked by the Board and its attached units during the financial year 2014 - 15 are as follows.

I. Non-Plan

[Rupees in lakh]

1.	Grants towards Admin., Expenses: 01.01.36 - Aid Salaries	27,917.00
	Total - Non-Plan :	27,917.00

II. Plan

[Rupees in lakh]

	<i>1. Export Promotion / Brand Promotion / Technical upgradation by Indian Silk Export Promotion Council & Silk Mark Organisation of India</i>	
03.00.31	Grants-in-Aid : General	0.00
03.00.35	Grants towards Creation of Capital Assets	8.33
	Sub-Total	8.33
	<i>2. R & D, Trg., TOT & IT Initiatives</i>	
04.00.31	Grants-in-Aid : General	2401.00
04.00.35	Grants towards Creation of Capital Assets	819.00
	Sub-Total	3220.00
	<i>3. Seed Organizations</i>	
05.00.31	Grants-in-Aid : General	1847.00
05.00.35	Grants towards Creation of Capital Assets	609.00
	Sub-Total	2456.00
	<i>4. Co-ordination & Mktg. Devpt. (HRD)</i>	
06.00.31	Grants-in-Aid : General	660.00
06.00.35	Grants towards Creation of Capital Assets	182.00
	Sub-Total	842.00
	<i>5. Quality Certification System</i>	
07.00.31	Grants-in-Aid : General	19.00
07.00.35	Grants towards Creation of Capital Assets	3.00
	Sub-Total	22.00
	<i>6. Catalytic Devp. Programmes : CSB (CDP)</i>	
01.00.31	Grants-in-Aid : General	333.00
01.00.35	Grants towards Creation of Capital Assets	220.00
	Sub-Total	553.00

	7. Catalytic Devp. Programmes : (CDP)	
01.00.31	Grants-in-Aid : General	2757.00
01.00.35	Grants towards Creation of Capital Assets	8831.00
	Sub-Total	11,588.00
	8. Catalytic Devp. Programmes : SC	
59.00.31	Grants-in-Aid : General	275.00
59.00.35	Grants towards Creation of Capital Assets	2225.00
	Sub-Total	2,500.00
	9. Catalytic Devp. Programmes : ST	
59.00.31	Grants-in-Aid : General	85.00
59.00.35	Grants towards Creation of Capital Assets	574.00
	Sub-Total	659.00
	TOTAL - PLAN	21,848.33
	** Carried forward from 2013-14 under the Export Promotion / Brand Promotion Scheme	36.00

III. Project/Scheme Under NE Region & Sikkim

[Rupees in lakh]

	<i>1. R & D, Trg., TOT & IT Initiatives</i>	
04.01.31	Grants-in-Aid : General	916.00
04.01.35	Grants towards Creation of Capital Assets	314.00
	Sub-Total	1230.00
	2. Seed Organisations	
04.02.31	Grants-in-Aid : General	453.00
04.02.35	Grants towards Creation of Capital Assets	147.00
	Sub-Total	600.00
	3. Co-ordination & Mktg. Devpt. (HRD)	
04.03.31	Grants-in-Aid : General	47.00
04.03.35	Grants towards Creation of Capital Assets	13.00
	Sub-Total	60.00
	4. Quality Certification System	
04.04.31	Grants-in-Aid : General	17.00
04.04.35	Grants towards Creation of Capital Assets	3.00
	Sub-Total	20.00
	5. Catalytic Devp. Programmes : [CDP]	
04.05.31	Grants-in-Aid : General	1355.00
04.05.35	Grants towards Creation of Capital Assets	4645.00
	Sub-Total	6,000.00
	TOTAL - PLAN [NE]	7,910.00

IV. Grand Total (Non-Plan + Plan + NE)

[Rupees in lakh]

	1. Grants towards Admin. Expenses	27,917.00
	Sub Total	27,917.00
	2. Export Promotion / Brand Promotion Technical upgradation by Indian Silk Export Promotion Council & Silk Mark Organisation of India	
	Grants-in-Aid : General	0.00
	Grants towards Creation of Capital Assets	8.33
	Sub-Total	8.33
	3. R & D, Trg., TOT & IT Initiatives	
	Grants-in-Aid : General	3317.00
	Grants towards Creation of Capital Assets	1133.00
	Sub-Total	4450.00
	4. Seed Organizations	
	Grants-in-Aid : General	2300.00
	Grants towards Creation of Capital Assets	756.00
	Sub-Total	3056.00
	5. Co-ordination & Mktg. Devpt. (HRD)	
	Grants-in-Aid : General	707.00
	Grants towards Creation of Capital Assets	195.00
	Sub-Total	902.00
	6. Quality Certification System	
	Grants-in-Aid : General	36.00
	Grants towards Creation of Capital Assets	6.00
	Sub-Total	42.00
	7. Catalytic Devp. Programmes : CSB (CDP)	
	Grants-in-Aid : General	333.00
	Grants towards Creation of Capital Assets	220.00
	Sub-Total	553.00
*	8. Catalytic Devp. Programmes : (CDP)	
	Grants-in-Aid : General	4112.00
	Grants towards Creation of Capital Assets	13476.00
	Sub-Total	17588.00
*	9. Catalytic Devp. Programmes : SC	
	Grants-in-Aid : General	275.00
	Grants towards Creation of Capital Assets	2225.00
	Sub-Total	2500.00
*	10. Catalytic Devp. Programmes : ST	
	Grants-in-Aid : General	85.00
	Grants towards Creation of Capital Assets	574.00
	Sub-Total	659.00
	GRAND TOTAL	57,675.33
**	Carried forward from 2013-14 under the Export Promotion/Brand Promotion Scheme and utilized during 2014 – 15.	36.00

* Against the Outlay / RE of Rs.21,300.00 lakhs sanctioned by the Ministry under CDP to States / CSB for the financial year 2014-15, a sum of Rs. 20,747.00 lakhs was directly released to States by the Ministry and an amount of Rs. 553.00 lakhs released to CSB – CDP towards implementation of CDP programmes/schemes.

5.3 Loan for the Year 2014 - 15

No Loan amount was released by the Ministry of Textiles to Central Silk Board towards House Building Advance during 2014 - 15.

5.4 Provisions approved by MoT in the BE for the year 2014-15 is as follows:

I. Non-Plan

[Rupees in lakh]

1.	Grants towards Admin., Expenses	33,100.00
	Total - Non-Plan :	33,100.00

II. Plan

[Rupees in lakh]

	1. Export Promotion / Brand Promotion / Technical upgradation by ISEPC & SMOI	
09.01.31	Grants-in-Aid : General	20.00
09.01.35	Grants towards Creation of Capital Assets	10.00
	Sub-Total	30.00
	2. R & D, Trg., IOT & IT Initiatives	
09.02.31	Grants-in-Aid : General	1162.00
09.02.35	Grants towards Creation of Capital Assets	305.00
	Sub-Total	1,467.00
	3. Seed Organisations	
09.03.31	Grants-in-Aid : General	650.00
09.03.35	Grants towards Creation of Capital Assets	250.00
	Sub-Total	900.00
	4. Co-ordination & Mktg. Devpt. (HRD)	
09.04.31	Grants-in-Aid : General	200.00
09.04.35	Grants towards Creation of Capital Assets	67.00
	Sub-Total	267.00
	5. Quality Certification System	
09.05.31	Grants-in-Aid : General	10.00
09.05.35	Grants towards Creation of Capital Assets	3.00
	Sub-Total	13.00
	6-A. Catalytic Devp. Programmes : CSB (CDP)	
57.01.31	Grants-in-Aid : General	-
57.01.35	Grants towards Creation of Capital Assets	-
	Sub-Total	-

	6-B. Catalytic Devp. Programmes : (CDP)	
09.06.31	Grants-in-Aid : General	2600.00
09.06.35	Grants towards Creation of Capital Assets	7700.00
	Sub-Total	10300.00
	7. Catalytic Devp. Programmes : SC	
24.00.31	Grants-in-Aid : General	500.00
24.00.35	Grants towards Creation of Capital Assets	1500.00
	Sub-Total	2000.00
	8. Catalytic Devp. Programmes : ST	
25.00.31	Grants-in-Aid : General	-
25.00.35	Grants towards Creation of Capital Assets	-
	Sub-Total	-
	TOTAL - PLAN	14,977.00

III. Project/Scheme Under NE Region

[Rupees in lakh]

	1. R & D, Trg., TOT & IT Initiatives	
	Grants-in-Aid : General	-
	Grants towards Creation of Capital Assets	-
	Sub-Total	-
	2. Seed Organizations	
05.01.31	Grants-in-Aid : General	53.00
05.01.35	Grants towards Creation of Capital Assets	47.00
	Sub-Total	100.00
	3. Co-ordination & Mktg. Devpt. (HRD)	
05.02.31	Grants-in-Aid : General	20.00
05.02.35	Grants towards Creation of Capital Assets	13.00
	Sub-Total	33.00
	4. Quality Certification System	
	Grants-in-Aid : General	-
	Grants towards Creation of Capital Assets	-
	Sub-Total	-
	5. Catalytic Devp. Programmes : (CDP)	
05.03.31	Grants-in-Aid : General	675.00
05.03.35	Grants towards Creation of Capital Assets	2025.00
	Sub-Total	2,700.00
	TOTAL - PLAN [NE]	2,833.00

Grand Total (Non-Plan + Plan + NE)

[Rupees in lakh]

1. Grants towards Admin. Expenses	33,100.00
2. Export Promotion/Brand Promotion Technical upgradation by ISEPC & SMOI	
Grants-in-Aid : General	20.00
Grants towards Creation of Capital Assets	10.00
Sub-Total	30.00
3. R & D, Trg., TOT & IT Initiatives	
Grants-in-Aid : General	1162.00
Grants towards Creation of Capital Assets	305.00
Sub-Total	1,467.00
4. Seed Organizations	
Grants-in-Aid : General	703.00
Grants towards Creation of Capital Assets	297.00
Sub-Total	1,000.00
5. Co-ordination & Mktg. Devpt. (HRD)	
Grants-in-Aid : General	220.00
Grants towards Creation of Capital Assets	80.00
Sub-Total	300.00
6. Quality Certification System	
Grants-in-Aid : General	10.00
Grants towards Creation of Capital Assets	3.00
Sub-Total	13.00
7-A. Catalytic Devp. Programmes : CSB (CDP)	
Grants-in-Aid : General	-
Grants towards Creation of Capital Assets	-
Sub-Total	-
7-B. Catalytic Devp. Programmes : (CDP)	
Grants-in-Aid : General	3275.00
Grants towards Creation of Capital Assets	9725.00
Sub-Total	13,000.00
8. Catalytic Devp. Programmes : SC	
Grants-in-Aid : General	500.00
Grants towards Creation of Capital Assets	1500.00
Sub-Total	2,000.00
9. Catalytic Devp. Programmes : ST	
Grants-in-Aid : General	-
Grants towards Creation of Capital Assets	-
Sub-Total	-
GRAND TOTAL	50,910.00

5.5 Internal Audit

The Internal Audit wing of Central Silk Board, Bengaluru has been formed with Board's Secretariat and five Zonal Audit Team from A to E i.e. ZAT-A, CTR&TI, Ranchi, ZAT-B, CSR&TI, Berhampore, ZAT-C, CSR&TI, Mysore, ZAT-D, RSRS, Jammu and ZAT-E, MSSO, Guwahati to conduct the Internal Audit of the Central Silk Board. The major achievements of the Internal Audit Section are as follows:

1. The Internal Audit teams have conducted the internal audit during the year 2014-15 and achieved the targets as on 31.03.2015 as per the approved programme. The details are as follows:

Sl. No.	Name of the IA team	Actual units covered		Total
		Delegated	Non-delegated	
01	CO-IA team	40	12	52
02	ZAT-A, CTRTI-Ranchi	21	02	23
03	ZAT-B, CSRTI-Berhampore	16	18	34
04	ZAT-C, CSRTI-Mysore	19	15	34
05	ZAT-D, RSRS-Jammu	18	16	34
06	ZAT-E, MSSO-Guwahati	04	11	15
	TOTAL	118	74	192

2. In addition to this the Internal Audit section has also given opinion in respect of 38 Cases referred on different service matters and other subject during the year 2014-15 (up to 31.03.2015).
3. Besides, 15 AG audit reports pertaining to various units of Central Silk Board have been received and suitable replies were furnished to the respective Accountant Generals/PDC, MAB during the year 2014-15.
4. The Principal Director of Commercial Audit, Ex-Officio member of Audit Board, Hyderabad has conducted audit on the Consolidated Annual Accounts of Central Silk Board for the year 2013-14 and Internal Audit has closely co-coordinated and furnished necessary information needed by the Auditors for smooth conducting of the audit. Central Silk Board has got a 'NIL' report for the year 2013-14 from the statutory auditors.

Sericulture Statistics



6.1 Raw Silk Production

India has the unique distinction of being the only country producing all the five known commercial silks, namely, mulberry, tropical tasar, oak tasar, eri and muga, of which muga with its golden yellow glitter is unique and prerogative of India. The total annual production of raw silk in India was 28,708 MT in 2014-15, of which, mulberry raw silk output aggregated to 21,390 MT (74.5%). The remaining 7,318 MT (25.5%) was Vanya silks (Table 1).

The raw silk production in the country increased from 26,480 MT in 2013-14 to all time high of 28,708 MT in 2014-15. The mulberry raw silk production increased by 9.8% from 19,476

in 2013-14 to 21,390 MT in 2014-15. Further, the production of Vanya silk increased by 4.5% from 7,004 MT in 2013-14 to 7,318 MT during 2014-15. Bivoltine, Eri and Muga silks achieved record production of 3870 MT, 4726 MT and 158 MT, respectively during 2014-15. However, Tasar silk production decreased by 7.1% (2434 MT) during 2014-15 compared to 2619 MT in 2013-14.

State-wise and variety-wise raw silk production during 2014-15 compared to 2013-14 is given in the **Annexure-V**. Mulberry area, mulberry raw silk production and variety-wise *vanya* silk production and total raw silk production for the last three years are depicted in **Fig. 1a - d**.

Table 1: Raw Silk Production in India

#	Particulars	2014-15	2013-14	% Increase
A	Area under Mulberry (ha)	219819	203023	8.3
B	Mulberry Raw Silk (MT)			
	Bivoltine	3870	2559	51.2
	Cross Breed	17520	16917	3.6
	Sub-Total (B)	21390	19476	9.8
C	Vanya Silk (MT)			
	Tasar	2434	2619	-7.1
	Eri spun silk	4726	4237	11.5
	Muga	158	148	6.8
	Sub-Total (C)	7318	7004	4.5
	Total (B+C)	28708	26480	8.4

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

6.2 Cocoon and Raw Silk Prices

Mulberry Cocoon Prices: The average prices of bivoltine hybrid reeling cocoons at Government Cocoon Market (GCM),

Ramanagaram and crossbreed reeling cocoons at GCM, Ramanagaram and Siddlaghatta during 2013-14 and 2014-15 are given in Table 2 and (Fig. 2a-c).

Table 2: Average prices of bivoltine hybrid and crossbreed reeling cocoons in different markets of Karnataka

(Price : Rs./kg)

Month	Bivoltine		Cross breed			
	Ramanagaram		Ramanagaram		Siddlaghatta	
	2013-14	2014-15	2013-14	2014-15	2013-14	2014-15
April	353	377	302	333	312	368
May	387	377	322	310	347	350
June	396	376	319	294	362	340
July	354	312	308	279	326	297
August	365	307	315	271	334	296
September	402	344	326	309	367	339
October	348	271	292	232	313	285
November	386	298	334	277	356	301
December	400	290	353	271	370	277
January	423	324	357	297	373	304
February	428	320	360	279	376	304
March	365	296	330	274	357	302
Average	384	324	327	286	349	314

Source: Department of Sericulture, Karnataka

Mulberry Raw Silk Prices: The average prices of Filature/Cottage Basin, Charkha and Dupion silks transacted in silk exchanges

of Karnataka during 2013-14 and 2014-15 are given in Table 3, and **Fig. 3a and 3b.**

**Table 3 : Average prices of raw silk transacted in silk exchanges of Karnataka
(Price : Rs./kg)**

Month	Filature/Cottage Basin		Charka		Dupion	
	2013-14	2014-15	2013-14	2014-15	2013-14	2014-15
April	2529	3047	2380	2709	941	1486
May	2539	2938	2482	2580	988	1582
June	2649	2913	2478	2258	907	1454
July	2654	2773	2520	2291	979	1496
August	2766	2711	2580	2283	1080	1476
September	3071	2800	2902	2476	1147	1812
October	3030	2686	2806	2307	1482	1731
November	3120	2584	3223	2270	1081	1583
December	3182	2519	2643	1801	1381	1450
January	3082	2428	2991	2031	1325	1390
February	3042	2336	2565	2006	1098	1422
March	2879	2383	2471	2128	1490	1358
Average	2899	2605	2704	2249	1096	1518

Source: Department of Sericulture, Karnataka

Vanya Cocoon and Silk Prices: Prices of cocoon and silk of tasar, eri and muga in important markets of Vanya silk producing

states for the year 2013-14 and 2014-15 are given in Table 4.

Table 4: Prices of Vanya cocoons and raw silk		
(Unit : Price : Rs./kg)		
Variety	2013-14	2014-15
A) Tasar Prices *		
1.Reeling Cocoon (1000 No.) (Grl)		
a) Raily	2700-3200	4500-6000
b) Daba	2100-2900	2675-4500
2. Reeled Yarn		
3. Ghicha Yarn	1400-1700	1200-3000
B) Eri Prices**		
1. Cut Cocoons (Superior Quality)		
2. Spun Yarn	1200-1300	1500-2800
C) Muga Prices **		
1. Reeling Cocoon (1000 No.)		
2. Raw Silk	1400-2000	1800-300
a) Warp Yarn	10000-15000	14000-18000
b) Weft Yarn	8000-12000	12000-13000

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

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

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

Prices of imported (Chinese) mulberry raw silk

Landed prices of imported Chinese mulberry raw silk of 3A and above grades along

with its sale price at Varanasi market during 2013-14 and 2014-15 are given in Table 5.

Table 5 : Imported raw silk prices								
(Price : US\$ / kg)								
Month	Landed Prices (Gr. 3A and above) *				Varanasi Market Prices **			
	2013-14		2014-15		2013-14		2014-15	
	Min	Max	Min	Max	Min	Max	Min	Max
April	54.00	55.00	55.00	56.00	57.93	61.60	60.47	62.96
May	54.00	55.00	55.00	56.00	58.17	63.62	51.00	61.54
June	55.00	56.00	54.00	55.00	57.36	63.36	56.92	59.43
July	55.00	56.00	54.00	55.00	53.20	63.57	49.95	64.77
August	55.00	56.00	51.00	55.00	60.51	66.45	56.91	57.48
September	55.00	56.00	50.00	54.00	62.75	66.51	56.52	73.12
October	55.00	56.00	50.00	53.00	64.10	66.54	54.61	62.76
November	55.00	56.00	50.00	53.00	63.31	63.87	54.29	55.27
December	55.00	56.00	50.00	53.00	64.04	64.61	53.39	56.18
January	55.00	56.00	50.00	53.00	63.88	64.44	54.64	59.78
February	55.00	56.00	50.00	53.00	63.69	64.26	54.48	54.80
March	55.00	56.00	50.00	53.00	66.07	66.66	54.04	55.64

Note: * Landed price
 ** Sale prices prevailed in Varanasi market which include customs and other duties

Source: * Regional Office, CSB, Mumbai collected through M/s. Shah Trading Co., Mumbai
 ** Certification Centre, CSB, Varanasi

6.3 Export of Silk goods

Fabrics, made-ups and readymade garments are the major items of India's silk exports, which account for about 95% of the total silk goods exports of the country. The export earnings from silk goods during 2014-15 was Rs.

2829.88 cr. (US\$ 462.85 million) as compared to Rs. 2480.89 cr. (US\$ 410.61 million) in 2013-14, indicating an increase of 14.07% in Rupee terms and 12.72% in US\$ terms (Table 6 and Fig. 4). There was substantial increase in export earnings from ready made garments and silk wastes during 2014-15 over the previous year.

Table 6 : Export earnings from silk and silk goods during 2013-14 and 2014-15

(Value : Crore Rs. : Mn US\$)

Items	2014-15		2013-14		% increase/Decrease	
	Rs.	US\$	Rs.	US\$	Rs.	US\$
Raw Silk	0.69	0.11	4.49	0.74	-84.63	-84.81
Silk Yarn	24.69	4.04	31.76	5.26	-22.26	-23.18
Fabrics and Made-up	1465.40	239.68	1455.63	240.92	0.67	-0.51
Readymade Garments	1214.01	198.56	874.00	144.65	38.90	37.27
Silk Carpet	15.97	2.61	15.71	2.60	1.65	0.46
Silk Waste	109.12	17.85	99.30	16.43	9.89	8.60
TOTAL	2829.88	462.85	2480.89	410.61	14.07	12.72

During 2014-15, the export earnings from the top ten importing countries put together accounted for about 67% of total exports. India's silk export earnings from top 10 countries during 2013-14 and 2014-15 are given in Table 7. The silk

exports from India significantly increased to the UAE, Malaysia, Sudan and Rwanda during 2014-15 compared to 2013-14, whereas the exports witnessed a decline to the traditional markets such as the USA, Italy, Germany and France.

Table 7 : Country-wise export earnings from silk and silk goods during 2013-14 & 2014-15

Sl. No.	Country+	2014-15		2013-14		% of Increase	
		Crore Rs.	Mn.US\$	Crore Rs.	Mn.US\$	Crore Rs.	Mn.US\$
1	U.A.E.	687.14	112.39	393.72	65.16	74.53	72.47
2	U.S.A.	362.03	59.21	371.49	61.48	-2.55	-3.70
3	U.K.	190.37	31.14	188.64	31.22	-0.91	-0.26
4	China P Rep	102.11	16.70	76.18	12.61	34.05	32.46
5	Malaysia	98.73	16.15	59.55	9.86	65.79	63.85
6	Italy	97.38	15.93	120.10	19.88	-18.92	-19.86
7	German P Rep	95.40	15.60	114.88	19.01	-16.95	-17.95
8	Sudan	94.75	15.50	57.55	9.52	64.64	62.73
9	France	91.36	14.94	121.51	20.11	-24.81	-25.71
10	Rwanda	67.27	11.00	36.13	5.98	86.19	83.95
	Others	943.34	154.29	941.15	155.77	0.23	-0.95
	Total	2829.88	462.85	2480.89	410.61	14.07	12.72

Note: + Refers to top 10 countries

Source: Compiled from the statistics received from DGCIS, Kolkata

6.4 Imports of Silk Goods

The import value of silk and silk goods during 2014-15 and 2013-14 are given in Table - 8. The total quantity of raw silk imported is shown in **Fig. 5**. Raw silk, silk yarns fabrics and made-ups are the major items of imports, which account for about 98% of the total imports.

During 2014-15, the value of silk goods imports was Rs. 1356.73 cr. (US\$ 221.91 million) compared to Rs. 1357.48 cr. (US\$ 224.67 million) in 2013-14, indicating a decrease of 0.06% in Rupee terms and 1.23% in US\$ terms. The quantity of raw silk import increased marginally by 7.02% from 3260 MT in 2013-14 to 3489 MT in 2014-15.

Table 8 : Value of Import of silk and silk goods during 2013-14 and 2014-15

(Value : Cr., Rs. : Mn US\$)

Items	2014-15		2013-14		% increase/Decrease	
	Crore Rs.	US \$	Crore Rs.	US \$	Rs.	US \$
Raw Silk	970.82 (3489 MT)	158.79	896.44 (3260 MT)	148.37	8.30 (7.02)	7.02
Silk Yarn	103.78	16.97	100.07	16.56	3.70	2.48
Fabrics and Made-up	239.16	39.12	315.32	52.19	-24.15	-25.05
Readymade Garments	16.63	2.72	16.07	2.66	3.47	2.25
Silk Carpet	0.43	0.07	0.62	0.10	-30.21	-31.03
Silk waste	25.91	4.24	28.96	4.79	-10.54	-11.60
TOTAL	1356.73	221.91	1357.48	224.67	-0.06	-1.23

Note: Figures in parenthesis indicate quantity of raw silk imported.

Source: Compiled from the statistics received from DGCIS, Kolkata.

Annexures



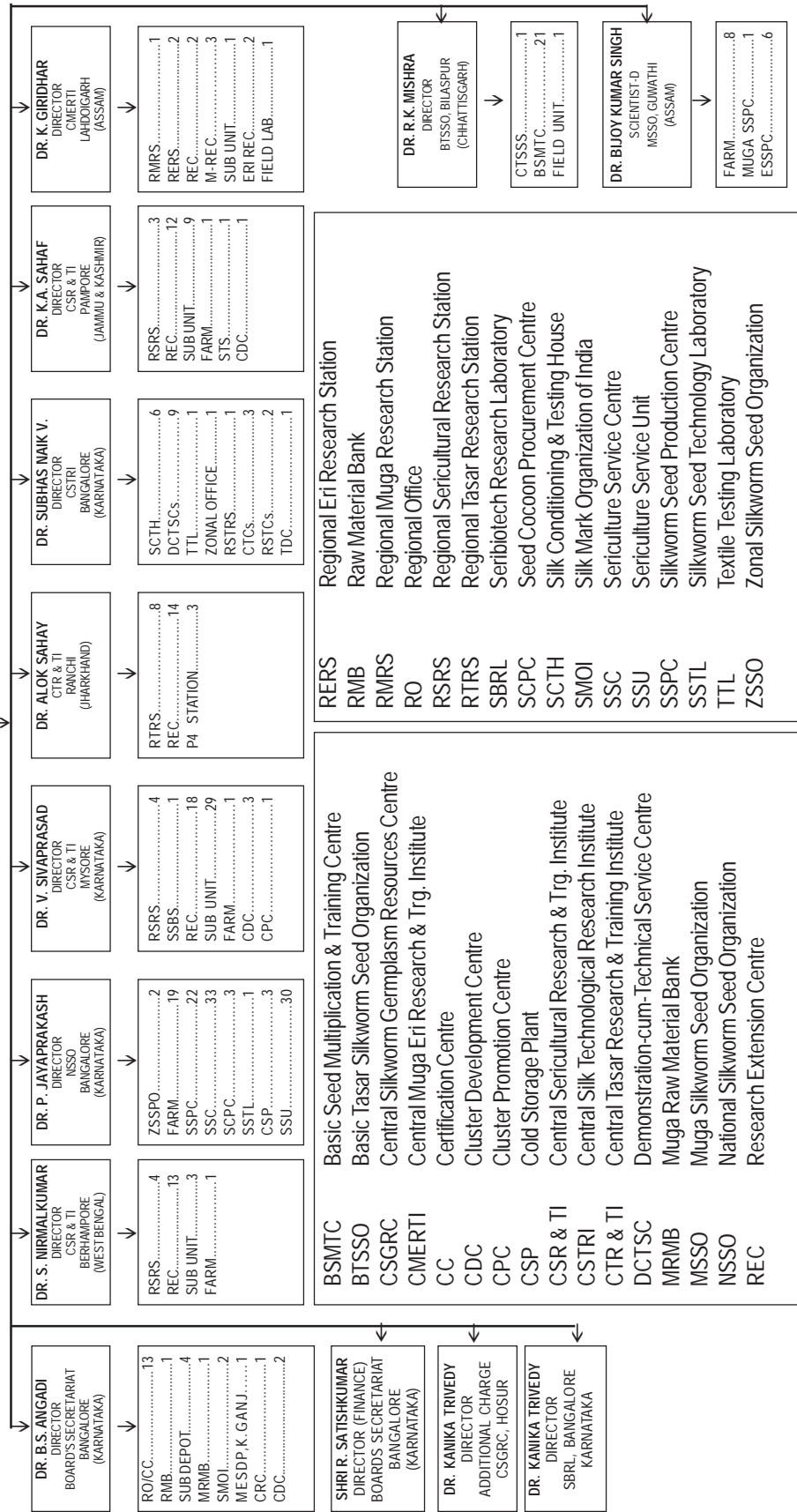
ORGANIZATION CHART OF CENTRAL SILK BOARD

SHRI N.S. BISSE GOWDA
CHAIRMAN

MS. SUNAINA TOMAR
VICE CHAIRPERSON

MS. SUNAINA TOMAR
(Additional Charge)
CEO & MEMBER SECRETARY

(As on 31st March 2015)



CSR & TI MYSORE (58)	CSR & TI PAMPORE (28)	CTR & TI RANCHI (26)	NSSO, BANGALORE (85)	ZSSO, Malda	ZSSO, Dehradun	CSTRI BANGALORE (25)	MSO, GUWAHATI (15)	ABSTRACT
RSRS Bangalore RSRS ChamaraJanagar RSRS Salem RSRS Anantapur SSBS, Coonoor REC Madhala REC Bidarapalle REC Chitradra REC Rayachoti REC Kharabad REC Krishnagiri REC Sanyalanur REC Parbhani REC Barhamati REC Madakira REC Venkatagirikola REC Udumalpet REC Eluru REC Gopalay REC Amravathi REC Hestargabad REC Palakkad REC Kalyandurg REC. Agali S-Unit, Aurangabad S-Unit, Kanakapura S-Unit, Bidar S-Unit, Koppal S-Unit, Kinkanahally S-Unit, Penukonda S-Unit, Shimoga S-Unit, Maddur S-Unit, Srivilliputhur S-Unit, Vaniyambadi S-Unit, Kapata (Waynad) S-Unit, Osaninabadi S-Unit, Jaina S-Unit, Burhanpur S-Unit, Giddalur S-Unit, Suryapet S-Unit, Chebrolu S-Unit, Atmakur S-Unit, Melpally S-Unit, Tumkur S-Unit, Ranebennur S-Unit, Betgal S-Unit, Shirahalli S-Unit, Bijapur S-Unit, Jamkhandi S-Unit, Avinashi S-Unit, Trichy CDC, Palanmer CDC, Hosakole P4, Hassan S-Unit, Kudligi RSRS SSBS Coonoor REC CDC S-Unit Farm CPC	RSRS Jammu RSRS Sahasur (UTR) RSRS Ghumanwin REC Nadiad (HP) REC Sujapur (PUNJ) REC Barnoli (J & K) REC Gondal (UP) REC Fatehnagar REC, Nowshera (J & K) REC, Gokhara (UP) REC, Chumjigar (UP) REC, Bagawar (UTR) REC, Una (HP) REC, Udamsinghnagar REC, Ghumanwin S-Unit Tiki (J & K) S-Unit Tiri (J & K) S-Unit Bandipora (J & K) S-Unit, Panchikula (Har) S-Unit, Bhadrasi (UP) S-Unit, Koldwar S-Unit, Hardwara S-Unit, Phillibit S-Unit, Balraich S-Unit, Fatehnagar P4, Manasota (BV) CDC, Kalsi RSRS = 3 RECS = 12 GDC = 1 S-Unit = 9 STS = 1 Farm = 1 Total = 27	RTRS Jagdalpur (CHHA) RTRS Dumka (JHA) RTRS Baripada (ORISSA) RTRS Warangal (A.P) RTRS Bhandara (MAH) RTRS Bhamidi (UTR) RTRS Batole (J & K) RTRS Impati (MANIPUR) REC, Nisik (MAH) REC, Palampur (H.P) REC, Halgamaria (JHA) REC Kalgihora (CHHA) REC Bangriposi (ORISSA) REC Robertsani (UP) REC, Bhadrachalam (A.P) REC, Kapasia (W.B) REC, Gopeshwar (UTR) REC, Umraungu (ASSAM) REC, Kikuma (MAGALAND) REC, Yalkongpur (MANIPUR) REC, Purulia (W.B) REC, Jhansi (U.P) CPC, Palahara (Orissa) P4 Station, Kargikota (CHHA) P4 Station, Chakrabhar (JHA) P4 Station, Sarayabat (JHA) RTRS = 8 S-Unit = 14 Total = 25	KARNATAKA SCPC, Kungali SCPC, K.R.Pet P3 Mysore P2 Nagamanagala P2 Dharmapuri (BV) P2 Gavnaita (BV) P2 Nagahallal(MV) SSPC Bangalore SSPC Mysore SSPC Ramanagaram SSPC Vijayapura SSPC Chinnamani SSPC Malavalli Grainagol, Chikkamalavadi SSC K.R.Pet SSC C.R.Paina SSC Ch. nagar SSC K.P.Doddai SSC C.B.Pur SSC Gowbidanur SSC Srinivasapura SSC K.M.Doddai SSC Belgum SSC Maddur SSC Haveri SSC Alitbelle SSC Kodathi BSF, Yeltyur CSP Mysore RO's (10) RO, New Dahi RO, Jannur S/MO, Panchkula RO, Mumbai RO, Kolkata RO, Panna ME-SDP, Kishanganj CDC, Saharsa SSPC Patalkad SSPC Udumalpet P2 Palakkad KERALA RO, Hyderabad RO, Chennai S/MO, Coimbatore RO, Bhubaneswar RO, Guwahati RO, Lucknow CDC, Saharsa	WEST BENGAL P3 A. Fakita (MV) P2 Kamashobana (BV) P2 Banguria (MV) P2 Dhubulia (MV) SSPC Behampore SSPC D.B.Pur SSPC Kolliba SSPC Raiganj SSC Hemabadi SSC Bhadrapur SSC Gaddachapur SSC Alinagar SSC Amrity SSC Sujapur SSC Mohabari SSC Panchagram SSC Kalachak SSC Kalliala SSC, Kalgaganj BIHAR SSPC Hindupur SSPC Madanapalle SSPC Chittoor SSC Penukonda SSC Kuppam SSC Vijayawada SSC Palamaner SSC Melekalacharuru SSC Madakaira P2 Purnea ORISSA CSD, Rangiri	UTTARANCHAL P3 Jajira P2 Sheelabambara SSPC Dehradun CSP, Dehradun JAMMU & KASHMIR SSPC Udhampur SSTL = 1 ZSSOs = 2 BSFs = 19 SSPCs = 19 SSCs = 33 SCPCs = 3 SSU = 1 Ging. = 1 CSP = 3 Total = 84 P2 Purnea CERTIFICATION CENTRES (3) CC, Varanasi CC, Guwahati CC, Smaigar	Tamil Nadu SCPC, Denkanikottai P2 Krishnagiri (MV) P2 YHills (BV) SSPC, Dharmapuri SSPC, Hosur SSPC, Tirupattur SSC Bagalur SSC Natrapalli SSC Coimbatore SSU, Gopichettipalyam CSP, Hosur ANDHRA PRADESH P2 Horsely Hills P2 Madakaira (BV) P2 Parigi (MV) SSPC Hindupur SSPC Madanapalle SSPC Chittoor SSC Penukonda SSC Kuppam SSC Vijayawada SSC Palamaner SSC Melekalacharuru SSC Madakaira KERALA SSPC Patalkad SSPC Udumalpet P2 Palakkad RO, Hyderabad RO, Chennai S/MO, Coimbatore RO, Bhubaneswar RO, Guwahati RO, Lucknow	Text. Testing Lab, Varanasi SC & TH Bangalore SC & TH Dharmavaram SC & TH Kancheepuram SC & THECO Lab, Jammu SC & TH Shri Nagar Zonal Office, Bilaspur CTC, Coimbatore CTC, Ramanagaram CTC, Dharmapuri RSTRS, Guwahati RSTC, Kollagal DCTSC, Rayapara (Kar) DCTSC, Hindupur (AP) DCTSC, Dharmapuri (TN) DCTSC, Bhandara (Mah) DCTSC, Cuttack (Orh) DCTSC, Dehradun (Ukhand) DCTSC, Jammu (J&K) DCTSC, Bhagalpur (Bihar) DCTSC, Suri (WB) TDC, Amri (TN) RSTRS, Guwahati = 1 TDC, Amri (TN) = 1 REC Lakshimpur (ASSAM) REC, Nawasari = 1 SC & THs = 6 DCTSCs = 9 RSTCS = 2 CTCS = 3 Total = 24 CO, Bangalore S/MO, Palakkad REC-Sub-Unit, Lucknow RMB, Chubasa (Jha) RMB SD, Bhagalpur (Bihar) RMB SD, Raiganj (Chha) RMB SD, Varanasi RMB SD, Bhandara MRMB, Sivasagar MRMB SD, Sialkuchi GSRG, Hosur SBRL, BANGALORE	MSO, Guwahati (15) P4 Nongrah (MEGH) P3 Tura (MEGH) P3 Rempara (MEGH) P3 Adokiri (MEGH) P3 Hahim (ASSAM) P3 Mendipathar (MEGH) P3, Naryanpur RECS = 2 MUGA-SSPC, Kalibari MUGA-REC, Balijan SSTL Eri SSPC, Azara ERSSPC, Peddapuram ERSSPC, Faleipur MESDP, Kishanganj TTL, Varanasi RSTRS, Guwahati RSRS (Mub) SSBS, Coonoor RMRS (Muga) RTRS (Tasar) = 8 REC (Mub) = 44 REC (Tasar) = 14 REC (Muga) = 1 REC (Eri) = 2 S-Unit (Mub) = 43 S-Unit, (Muga) = 2 RMB (Tasar) = 1 RMB-SD (Tasar) = 4 MRMB (Muga) = 1 REC, Nawasari = 1 SC & TH = 6 Zonal Off. Bilaspur Zonal Off. Faleipur (U.P) DCTSCs = 9 CTCS/TDC = 4 RSTCS = 2 BTSO, Bilaspur CTSSS Kargi Kola BSM & TIC (Tasar) = 21 Field Unit, Palahara = 2 ZSSO (Mub) = 2 SCPC (Mub) = 3 BSFs (Mub) = 23 BSFs (MSDP) = 7 SSPC (Mub) = 21 SSCs (Muga) = 33 STS/SSU/CSP = 5 ERSSPC = 5 CDCs/CRC/CPC = 7 P4 Stations = 3 Field Lab, Tiabhar = 1 Total = 324
Total = 57	Total = 31	Total = 23	Total = 84	Total = 84	Total = 84	Total = 24	Total = 11	Total = 324

**CENTRAL SILK BOARD
BANGALORE – 560 068**

COMPOSITION OF BOARD MEMBERS AS ON 31.03.2015

**Sl. Name & Address of the Member
No.**

I UNDER SECTION 4(3)(a)

- 1 Shri N.S. Bisse Gowda,**
Chairman, Central Silk Board,
CSB Complex, BTM Layout, Madiwala,
Bengaluru, Karnataka
(12.12.2012 to 11.12.2015)
Residence Address:
No.41, 16th Cross, 7th Main,
AECS Layout, N.N. Farm,
Sanjay Nagar,
Bengaluru – 560 094. Karnataka
Res: 080 – 2341 5899 (M) : 98453 90139
- II UNDER SECTION 4(3)(b)**
- 2 Smt. Sunaina Tomar, IAS,**
Joint Secretary (Silk) & Vice-Chairman,
CSB, Ministry of Textiles, Govt. of India,
“Udyog Bhavan”, New Delhi - 110 011.
(07.05.2013 to 06.05.2016)
(O) : 011 - 2306 1826
E-mail : sunaina.tomar@nic.in
- 3 Smt. Neelam S. Kumar**
Chief Controller of Accounts,
Ministry of Textiles, “Udyog Bhavan”,
New Delhi - 110 011.
(27.07.2012 to 26.07.2015)
- 4 The Member Secretary,**
Central Silk Board, CSB Complex,
BTM Layout, Madiwala, Bengaluru - 560 068.
(03.11. 2014 to 02.11.2017)
(O) : 080 - 2668 0190, Fax : 080 - 2668 1511
ms@csb.gov.in

I UNDER SECTION 4(3)(c)

- 5 Shri P. C. Mohan,**
Member of Parliament (Lok Sabha)
No. 1928, 30th Cross, 12th Main,
Banashankari 2nd stage, Monotype,
G.K. Kalyana Mantapam,
Bengaluru - 560 050.
(18.07.2014 to 17.07.2017)
(O) : 080 - 22865454, 22865656
(R) : 080 - 26760450
(M) : 9845003600 Fax : 080- 2271985
Residential Address:
No. 160, South Avenue,
New Delhi - 110 011.
(O) : 011-23016074 (M) : 9013180136
- 6 Shri Ashwini Kumar Choubey,**
Member of Paliament (Lok Sabha)
New Delhi.
(18.07.2014 to 17.07.2017)
Residential Address:
T. N. Singh Lane, Manik Sarkar,
Adampur, Bhagalpur, Bihar
(M) : 09431018770
ashwinikumar.choubey@sansad.nic.in
- 7 Shri Nimmala Kristappa,**
Member of Parliament (Lok Sabha)
12-A, Ferozeshah Road, New Delhi.
(18.07.2014 to 17.07.2017)
(M) : 90131 80282, 94406 05199
Residential Address:
Gorantla - 515 231. Anantapur Dist.,
Andhra Pradesh
08556 - 2235199

- 8 Smt. P.K. Sreemathi, Teacher**
Member of Parliament (Lok Sabha),
Kannur Azhikkodan Samaraka Mandiram,
Kannur-2, Kerala.
(18.07.2014 to 17.07.2017)
(M) : 9946166661(R) : 0497 - 2703661
pk.sreemathi@sansad.nic.in
Residential Address:
Edathil House, Athiyadam, Payangadi (PO)
Kannur - 670 303. Kerala
(O) : 0497 - 2875150
-
- 9 Shri Mani Shankar Aiyar,**
Member of Parliament (Rajya Sabha)
No.12, Safdarjung Lane, Opp. the Exit Gate
of Delhi Gymkhana Club, New Delhi - 11.
(04.05.2012 to 03.05.2015)
(O) : 011-23795402 (M) : 9868217868
manirsmp@gmail.com
Residential Address: No.12,
Avaiyambalpuram, Mayliadutrai - 709 001.
Tamil Nadu. (R) : 04364 - 221234
-
- 10 Shri Basawaraja Patil**
Member of Parliament (Rajya Sabha)
No. C-703, Swarn Jayanti Sadan,
Dr. B.D. Marg, New Delhi - 110 001.
(04.05.2012 to 03.05.2015)
(O) : 011 - 23737833, (M) : 9448476153
bpatil.mp@gmail.com
Residential Address:
No. 3/1/28, Vidyanagara Colony,
Sedam - 585 222. Gulabarga Dist.,
Karnataka. (M) : 09448476153
-
- IV UNDER SECTION 4(3)(d)**
-
- 11 Shri Rajeev Chawla, IAS**
Principal Secretary, Horticulture Dept.,
Govt. of Karnataka, Room No. 404,
4th Floor, 3rd Gate, M.S. Building,
Bengaluru - 560 001. Karnataka
(09.10.2014 to 08.10.2017)
(O) : 080-22353939 (R) : 080-25449737
(M) : 98440 39168 Fax : 080-22385687
secyhorti-ah@karnataka.gov.in
-
- 12 Shri G. Sathish, IFS**
Commissioner for Sericulture Department
& Director of Sericulture,
Government of Karnataka,
Dr. Ambedkar Veedi, M.S. Building,
Bengaluru - 560 001, Karnataka.
(09.10.2014 to 08.10.2017)
(O) : 080-22253856 Fax: 080-22353881
-
- 13 Shri Mohamud Dastagira,**
S/o. Shri Abdul Rahim,
No. 3738, Mehaboobnagar,
Ramanagaram - 562 159, Karnataka.
(M) : 94487 84362
(20.08.2014 to 19.08.2017)
-
- 14 Shri K. Mudde Gowda (Ramesh)**
S/o Shri Kempe Gowda,
Kempaiana Hundi, T. Narasipura Taluq,
Mysore Dist., Karnataka.
(M) : 94482 47292
(20.08.2014 to 19.08.2017)
-
- 15 Shri P. Somanna,**
S/o. Late Puttaswamy,
Suttur Vilage, Biligere Hobli,
Nanjangud Taluq, Mysore Dist., Karnataka.
(M) : 9008565269 (M) : 9482215269
(20.08.2014 to 19.08.2017)
-
- V UNDER SECTION 4(3)(e)**
-
- 16 Shri Harmander Singh, IAS,**
Principal Secretary to Govt. Handlooms,
Handicrafts, Textiles & Khadi Dept. (G2)
Govt. of Tamil Nadu, Secretariat,
Fort St. George, Chennai - 600 009.
Tamil Nadu.
(20.08.2014 to 19.08.2017)
(O) : 044-2561623 Fax : 044-25672261
(M) : 944312 24282
htksec@tn.gov.in Web: www.tn.gov.in

VI UNDER SECTION 4(3)(f)

17 Smt. Soma Bhattacharjee, IAS
Commissioner of Textiles,
Government of West Bengal,
No.45, Ganesh Chandra Avenue,
(2nd Floor), Kolkata - 700 003. West Bengal.
(03.11. 2014 to 02.11.2017)

(O) : 2236 7017 (M) : 9434723047
Fax : 033-2225 2539, kolseril@gmail.com

18 Shri Humayun Kabir,
Village Narkel Bari, P.O. Sompara,
P.S. Shaktipur, Dist.,
Murshidabad - 742163. West Bengal.
(01.08.2013 to 31.07.2016)

VII UNDER SECTION 4(3)(g)

19 Smt. Usha Rani, IAS,
Commissioner of Sericulture,
Government of Andhra Pradesh,
Department of Sericulture,
Road No. 72, Prasasan Nagar,
Adjacent to Water Tank, Jubilee Hills,
Hyderabad - 500 033. Andhra Pradesh
(22.12.2014 to 21.12.2017)

(O) : 040-2354 1547/539/2354 0537
(M) : 8374449000 Fax : 040 - 23541543
commissioner.seri@gmail.com

20 Shri Ramananda Phukan, ACS
Director of Sericulture, Government of
Assam, Directorate of Sericulture, (Near
Research Gate) Guawahati - 781 022.
Assam.
(20.08.2014 to 19.08.2017)
(M) : 94351 68333 Fax : 0361-2361021

21 Shri Ramanand Jha, IAS
Director, Handloom & Sericulture Dept,
Government of Bihar, Vikas Bhavan,
Patna - 800 015, Bihar
(03.11. 2014 to 02.11. 2017)
(M) : 0612 - 2215637 Fax : 0612 - 2226637

22 The Principal Secretary
Rural Industries Department,
Sericulture Section, Govt. of Chhattisgarh,
Sonakhan Bawan, Ring Road,
Raipur - 492 006. Chhattisgarh.
(24.06.013 to 23.06.2016)

23 Smt. Vatsala Vasudeva, IAS
Secretary & Commissioner,
Cottage & Rural Industries,
Government of Gujarat, Block No. 7,
Udyog Bhavan, Gandhi Nagar, Gujarat.
(03.11.2014 to 02.11. 2017)
(P) : 079 - 2325 9477 / 78
(M) : 99784 05535 (R) : 079 - 23261050
Fax : 079 - 2325 9479

24 Shri A.T. Mishra, IFS
Director, Handloom, Sericulture & Handicraft,
Dept. of Industries, Govt. of Jharkhand,
Nepal House Doranda,
Ranchi - 834 002, Jharkhand.
(07.05.2013 to 06.05.2016)
(O) : 0651-2591305 (M) : 94311 29590
(M) : 04301 84231 Fax : 0651-2491858
arta_ifs@yahoo.com

25 Shri S.D. Pateria, IFS
Director of Sericulture,
Government of Madhya Pradesh
Lower Basement, Satpura Bhawan,
Bhopal - 462 004. Madhya Pradesh
(09.10.2014 to 08.10.2017)
(O) : 0755 - 2552118 (R) : 0755 - 2480689
(M) : 94251 08747 spateriya@gmail.com

26 Shri Vishnu Swaroop Misra, IAS
Director of Sericulture & Weaving,
Directorate of Sericulture,
Government of Uttar Pradesh,
LDA Commercial Complex, 1st Floor,
Vishwas Khanda - III, Gomti Nagar,
Lucknow - 226 010 Uttar Pradesh
(16.10.2012 to 15.10.2015)
(O) : 0522-2309485/2309630
Fax : 0522 - 2308566

27 Dr. Sudhir Mohan Sharma,
Director of Sericulture,
Government of Uttarakhand,
Premnagar, Dehradun - 248 007.
Uttarakhand
(07.05.2013 to 06.05.2016)

(O) : 2773227/ 2774130
Fax : 2774744 (R) : 2774011
(M) : 9412056895
dosua2002@yahoo.com

VIII UNDER SECTION 4(3)(h)

28 Dr. Asgar Hassan Samoon, IAS
Commissioner / Secretary,
Govt. of Jammu & Kashmir,
Agriculture Production Dept.
Room No. 205 / 206, 2nd Floor,
Civil Secretariat, Srinagar - 190 001,
Jammu & Kashmir.
(22.12.2014 TO 21.12.2017)

(M) : 94190 15150 (O) : 0194 - 2470357/
2479419 (S) (O) : 0191 - 2540531/
2546883 (J) Fax : 0194 - 249419
asgarsamoon@gmail.com

IX UNDER SECTION 4(3)(i)

29 Dr. C.J. Hiware, Director (Sericulture),
Government of Maharashtra
Administrative Building, No. 2, 6th Floor,
B-Wing, Civil Lines, Commissionerate
Office Area, Civil Lines, Nagpur - 440 001,
Maharashtra.
(07.05.2013 to 06.05.2016)

(O) : 0712 - 22569927/28
Fax : 0712-2569928

30 Shri Chandan Basera,
Director, Directorate of Sericulture,
Govt. of Nagaland,
Below New Secretariat Complex,
Kohima - 797 001, Nagaland.
(07.05.2013 to 06.05.2016)

(O) : 0370-2270939 (M) : 9158106540
(M) : 9423472437 (M) 9612166916

31 Smt. Chithra Arumugam, IAS,
Commissioner-cum-Secretary,
Handlooms, Textiles & Handicrafts Dept.,
Government of Odisha, Bhubaneswar
(20.08.2014 to 19.08.2017)

(M) : 94375 66889

X UNDER SECTION 4(3)(j)

32 Shri R. K. Rama Krishnappa,
Melur Post, Sidlagatta Taluk,
Chikkaballapur - 562 102.
Karnataka
(05.09.2013 to 04.09.2016)

(O) : 08158 - 251188 (M) : 99023 30380

33 Shri M.P. Lakshmikanth
No.1554, 16th Main, M.C. Layout,
Vijayanagar, Bengaluru - 560 040.
Karnataka.
(05.09.2013 to 04.09.2016)

(O) : 080 - 2335 0369 (M) : 93412 18956

34 Shri Abdul Gani Vakil
T-17, Tulsi Bagh, Srinagar,
Jammu & Kashmir.
(26.09.2013 to 25.09.2016)

(M) : 9419008090

35 Shri Azad Kumar Chalasani,
SVEC Constructions Limited,
Plot No. 3, Survey No. 70, 3rd Floor,
Silicon Valley, Image Garden Lane,
Madhupur, Hyderabad - 500 081.
Andhra Pradesh
(12.09.2013 to 11.09.2016)

(O) : 040 - 48484949 (M) : 98490 44755
Fax : 040 - 48484949

36 Shri N. Ramesh,
Yeluhalli, Chikkaballapur Taluk,
Chikkaballapur Dist.,
Karnataka.
(12.09.2013 to 11.09.2016)

(M) : 9845221343

37 Shri B.C. Umesh Babu
R/o. # 342, "Methala", Ward No. 3,
Near Shiva Temple, Dommasandra,
Sarjapura, Hobli, Anekal Taluk,
Bengaluru - 562 125, Karnataka.
(18.09.2013 to 17.09.2016)
(O) : 080 - 2782 2037 (M) : 9008091338
ubabu2008@gmail.com

38 Shri R.H. Jairam Reddy,
Ksheerasagaram Village,
Kongatam Post, V. Kota Mandal,
Chittoor District - 517 424,
Andhra Pradesh.
(27.09.2013 to 26.09.2016)
(M) : 90003 06090

39 Shri Pitchikala Lakshminarayana
Badarala Village, Vemulapalli Post,
Lingapalem Mandal, West Godavari
District, Andhra Pradesh - 534 452.
(17.10.2013 to 16.10.2016)

08823 - 24243908823 - 213355
(M) : 9440658564
lakshminarayanap1966@ gmail.com

XI PERMANENT INVITEES

1 Dr. Kiran Soni Gupta, IAS
Textile commissioner,
Ministry of Textiles, Govt. of India,
New CGO building, # 48,
New Marine Line, P.B. No. 11500
Mumbai - 400 020, Maharashtra
(O) : 022 - 2004510 Fax : 022 - 2004693

2 Shri T.V. Maruthi
Chairman
Indian Silk Export Promotion Council
B-1 Extension, A-39, Mohan Co-operative
Industrial Estate,
Mathura Road, New Delhi - 110 044.
Tel & Fax : 011 - 4057 1366
roisepec@gmail.com

**ZONE-WISE, STATE-WISE APPROVED BUDGED ESTIMATE AND FUNDS RELEASED DURING THE YEARS
2012-13, 2013-14 AND OUTLAY APPROVED FOR THE YEAR 2014-15**

(Rs.in crore)

Sl. No.	State	XII Plan Allocation	2012-13		2013-14		2014-15	
			BE Approved	Fund Released	BE Approved	Fund Released	BE Approved	Fund Released
I	Southern Zone							
1	Karnataka	167.07	38.81	39.36	45.32	50.09	35.62	34.38
2	Andhra Pradesh	74.09	14.52	16.93	27.11	25.63	19.82	11.29
3	Telangana							7.53
4	Tamil Nadu	62.62	13.84	12.96	18.13	11.86	14.35	14.09
5	Maharashtra	25.2	4.36	6.36	16.46	12.98	10.31	10.00
6	Kerala	4.68	1.29	0.00	1.81	0.01	0.84	
	Total for Southern Zone	333.66	72.82	75.62	108.83	100.56	80.94	77.29
II	Central & Western Zone							
1	Uttar Pradesh	32.64	7.59	7.36	10.65	10.92	9.23	8.70
2	Madhya Pradesh	30.22	7.22	7.72	11.48	12.12	10.72	11.33
3	Chhattisgarh	10	3.46	1.28	3.59	2.27	3.05	3.20
4	Rajasthan							
5	Gujarat	0.5	0.25		0.15		0.10	
	Total for Central & Western Zone	73.36	18.52	16.36	25.87	25.32	23.10	23.23
III	Eastern Zone							
1	West Bengal	27.05	7.12	5.19	7.25	5.78	3.44	3.10
2	Bihar	10.06	2.65	2.85	3.17	1.08	1.10	1.10
3	Jharkhand	65.46	12.39	15.02	32.63	30.52	17.54	17.00
4	Odisha	21.23	5.13	5.09	7.77	5.37	2.74	2.73
	Total for Eastern Zone	123.80	27.29	28.15	50.82	42.74	24.82	23.93
IV	North-western Zone							
1	Jammu & Kashmir	51.4	12.96	15.94	15.97	15.65	15.38	14.58
2	Himachal Pradesh	13.07	2.88	0.98	3.23	4.24	5.10	5.09
3	Uttarakhand	25.9	7.4	4.94	7.62	8.12	2.86	3.21
4	Haryana	0.73	0.22		0.30		0.20	0.13
5	Punjab	1.08	0.31	0.32	0.36		0.60	
	Total North - western Zone	92.18	23.77	22.18	27.48	28.01	24.14	23.02
V	North - eastern Zone							
1	Assam	90	19.4	21.22	26.00	31.64	16.75	16.00
2	Bodoland Territorial Council	32	5.2	6.39	9.50	13.20	8.00	8.11
3	Arunachal Pradesh	10	2.2	2.20	2.50	4.10	1.60	2.76
4	Manipur	35	6.8	6.89	9.00	10.01	8.00	6.72
5	Meghalaya	24	6.7	6.70	7.00	10.64	5.67	5.67
6	Mizoram	25	6	6.00	7.00	9.88	5.77	5.90
7	Nagaland	25	5.2	5.21	9.00	10.80	7.70	8.40
8	Sikkim	5	1.29	0.46	1.00		1.00	
9	Tripura	20	6.7	7.78	7.00	8.84	5.51	6.44
	Total North - eastern Zone	266.00	59.49	62.85	78.00	99.12	60.00	60.00
	Directly spent by CSB							5.53
	Total for All Zones	889.00	201.89	205.16	291.00	295.75	213.00	213.00

**CENTRALLY SPONSORED SCHEMES FOR SERICULTURE DEVELOPMENT DURING XII PLAN
(INTEGRATED CATALYTIC DEVELOPMENT PROGRAMME)
FINANCIAL TARGETS AND ACHIEVEMENTS UNDER CDP DURING 2014-15**

(Rs. in crores)

#	Name of the Scheme / Component	Approved allocation for 2014-15	Financial Progress	Of which progress w.r.t NER
1	Mulberry Sector (Bivoltine & ICB)			
a)	Mulberry Seed			
1	Franchise disinfection programme of NSSO	0.11	0.11	
2	Support for construction of Rearing Houses for Adopted Seed Rearers (ASRs) of NSSO	0.27	0.27	
3	Revolving capital fund support for state grainages and RSPs	0.24	0.40	
4	Assistance for purchasing seed testing equipments for state grainages and private RSPs	0.08	0.02	
5	Support for strengthening basic seed farms of states	0.67	0.17	0.04
6	Support for upgradation of state and private commercial seed production units	0.29	0.23	
	Total for Mulberry Seed	1.66	1.20	0.04
b)	Mulberry Cocoon			
1	Support for Mulberry Plantation Development	11.04	9.57	1.34
2	Assistance for irrigation and other Water Conservation and usage techniques	12.74	11.96	0.65
3	Supply of Rearing Appliances (including improved mountages) / farm equipments to farmers)	43.78	29.18	4.54
4	Supply of quality Disinfecting Materials and other crop protection measures for farmers	3.31	5.34	0.43
5	Assistance for construction of Rearing Houses Model - I (1000 sq ft to rear 250 dfl) Model - II (600 sq ft to rear 150 dfl) Model - III (225 sq ft to rear 50 dfl) Low cost RH (600 sq ft to rear 150 dfl)	6.80 35.54 5.05	13.70 22.74 10.43 0.56	4.98 8.85
6	Assistance for maintenance of Chawki gardens, construction of Chawki Rearing Centre (CRC) buildings and procurement of Chawki Rearing equipment	5.28	5.30	2.78
7	Production units for Biological inputs/Door to Door Service Agents for Disinfection and inputs supply & Assistance for Sericulture Poly-Clinics	0.49	0.77	0.26
8	Support for development of Kisan Nurseries	0.30	1.19	0.38
9	Maintenance cost for Mulberry Plantation raised during X & XI Plan for 3 years	0.96	0.32	0.29
10	Support for construction of Vermi-compost Sheds	1.20	0.92	0.27
11	Assistance towards fencing of mulberry gardens in NE States	1.46	1.84	1.84
12	Assistance towards expansion of Rearing Houses to construct Mounting Halls in NE States	4.23	3.70	3.70
13	Support for increasing the yield of existing rainfed mulberry gardens through water conservation techniques	1.12	1.27	0.84
	Total for Mulberry Cocoon	133.30	118.79	31.16
	Total for Mulberry Sector	134.96	119.99	31.20
	Revenue Head - 31	19.39	20.44	5.39
	Capital Head - 35	115.57	99.55	25.81

Contd.....

#	Name of the Scheme / Component	Approved allocation for 2014-15	Financial Progress	Of which progress w.r.t NER
2	Vanya Sector			
a)	Vanya Seed			
i	Tasar			
1	Assistance to Private Tasar Graineurs	7.50	6.90	
a	Assistance to existing tasar graineurs for upgradation of seed production capacity	0.04	4.64	
2	Assistance for strengthening of tasar seed multiplication infrastructure (Tropical Tasar)	0.69	0.76	
a	Estt. of Basic Seed Production units (by SHGs, Co-operatives / NGOs)	0.25	0.00	
3	Assistance for strengthening of tasar seed multiplication infrastructure (Oak Tasar)		0.24	0.135
4	Assistance for Tropical Tasar Rearers	2.31	3.33	
a	Assistance for Oak Tasar Seed Rearers	0.01	0.09	0.0868
b	Assistance for mobile testing facility for disease monitoring and seed cocoon testing	0.18	0.12	
	Total for Tasar Seed	10.98	16.08	0.22
ii	Eri			
5	Assistance to State Deptts. for strengthening of Eri farm cum grainages (Farm-cum-grainages)	2.11	0.17	
a	Assistance to Eri Private Graineurs	0.27	1.33	1.29
b	Assistance to Eri Adopted Seed Rearers	0.43	0.27	0.25
c	Upgradation of State Eri Basic Seed farm cum grainages	1.69	0.06	
d	Assistance for estt. of Self Help Eri Grainage units (SHEG)	0.05		
e	Mobile testing and certification units			
	Total for Eri Seed	4.55	1.83	1.53
iii	Muga			
6	Assistance to Muga Private Graineurs	0.30	1.53	1.53
a	Assistance to existing Muga Private Graineurs for upgradation of seed production capacity	0.71	0.01	
7	Assistance to State Deptts. for strengthening of Muga seed multiplication infrastructure (P2)	4.83		
a	Assistance for estt. of Muga P3 Basic Seed Production unit			
b	Assistance to Muga Adopted Seed Rearers	0.57	1.24	1.19
	Total for Muga Seed	6.41	2.78	2.72
	Total for Vanya Seed	21.94	20.69	4.48
b)	Vanya Cocoon			
i	Tasar			
1	Support to rearers for Augmentation of Tasar Host Plantation	4.15	1.312	
a	Assistance to beneficiaries for raising Tasar food plant seedings (Kisan Nurseries)	0.05	0.31	
b	Assistance to Tasar commercial rearers for development of Chawki garden	0.01		
c	Assistance to Tasar rearers for maintenance of existing Chawki plantation	0.00	0.74	
d	Assistance to Tasar rearers for maintenance of existing Tasar plantation	0.15	0.41	

Contd.....

#	Name of the Scheme / Component	Approved allocation for 2014-15	Financial Progress	Of which progress w.r.t NER
e	Conservation and utilization of Sal based Tasar Eco-races	0.00		
2	Assistance for raising and maintenance of systematic Oak Tasar Plantation	0.20	0.51	0.51
3	Assistance for construction of Cocoon Storage Houses in Tasar sector	0.67	0.42	0.072
a)	Assistance for construction of Cocoon Storage and stifling facilities for Tasar rearers	0.10	0.7035	
	Total for Tasar Cocoon	5.33	4.40	0.58
ii	Eri			
4	Support for Castor / Tapioca cultivators with Start-up tools	0.71	0.03	
5	Augmentation of perennial eri food plants with supply of start-up tools	3.44	2.53	2.53
a	Assistance for raising Kesseru food plants nursery	0.42	0.11	0.11
6	Assistance for construction of Rearing Houses	11.71	16.35	14.09
	Total for Eri Cocoon	16.28	19.02	16.73
iii	Muga			
7	Augmentation and maintenance of Muga food plants with start-up tools	2.31	1.93	1.88
a	Assistance for raising Muga food plants nursery	0.14	0.12	0.12
b	Assistance for maintenance of existing Muga food plantation	1.96	0.04	
	Total for Muga Cocoon	4.41	2.09	2.00
	Total for Vanya Cocoon	26.02	25.51	19.32
	Total for Vanya Sector	47.96	46.20	23.79
	Revenue Head - 31	13.54	8.04	5.16
	Capital Head - 35	34.42	38.16	18.64
	Total for Mulberry & Vanya Sector	182.92	166.19	54.99
	Revenue Head - 31	32.93	28.49	10.54
	Capital Head - 35	149.99	137.70	44.45
3	Post-cocoon Sector			
I	Reeling & Spinning			
A	Mulberry			
1	Support for construction of Reeling Sheds			
a	Improved Cottage basin units			
(i)	36 ends unit (6 basins of 6 ends each)	0.10	0.07	
(ii)	48 ends unit (6 basins of 8 ends each)			
b	Multiend reeling units			
(i)	6 basins unit (10 ends per basin)	0.39	0.30	
(ii)	10 basins unit (10 ends per basin)	0.37	1.16	
2	Support for motorized charkha to dissuade child labour	0.04	0.01	
3	Support for establishment of improved Cottage basin reeling units			
a	36 ends unit (6 basins of 6 ends each)	0.11	0.16	
b	48 ends unit (6 basins of 8 ends each)		0.98	
4	Support for establishment of Multiend reeling units	0.00		
a	6 basins unit (10 ends per basin)	1.71	1.22	
b	10 basins unit (10 ends per basin)	2.00	2.56	0.12
c	Support for existing Multiend units for procurement of additional equipments / re-conditioning	0.18	0.86	

Contd.....

#	Name of the Scheme / Component	Approved allocation for 2014-15	Financial Progress	Of which progress w.r.t NER
5	Support for establishment of Automatic reeling units			
a	200 ends unit	0.43	2.91	
b	400 ends unit	1.60	2.09	
6	Support for establishment of Automatic Dupion reeling units (142 ends)	0.43	0.85	
7	Assistance for Twisting units (480 ends)	1.05	2.73	
8	Interest subsidy on working capital loan sanctioned by Banks to reeling units	0.20	0.05	
9	Incentive for production of Bivoltine silk (Kg)			
a	Gradable bivoltine silk reeled on Multiend reeling units (Rs.100/- per kg)	2.58	2.63	
b	2 A grade & above bivoltine silk reeled on Automatic reeling units (Rs.150/- per kg)	1.44	3.68	
	Sub Total for Mulberry (A)	12.63	22.26	0.12
B	Vanya			
10	Support for Vanya reeling / spinning sector			
a	Reeling cum twisting machines	0.65	1.09	0.71
b	Wet reeling machine (2 basins of 6 ends each)	0.04	0.018	
c	Two in one Reeling cum Twisting machine	0.06	0.36	
d	Tasar cocoon sorting machine for Co-operatives / SHGs	0.02	0.05	
e	Motorised / Pedal operated spinning machine	0.25	0.24	0.17
f	Solar operated spinning machine	0.03	0.06	
	Sub Total for Vanya (B)	1.05	1.83	0.88
C	General (Mulberry- 70% & Vanya- 30%)			
11	Providing services of Master reelers/Technicians			
a	Master reelers	0.41	0.24	
b	Master Technicians	0.02	0.01	
	Sub Total for General (C)	0.43	0.26	
	Total for Reeling & Spinning	14.11	24.35	1.00
II	Post Yarn (Mulberry- 70% & Vanya- 30%)			
12	Support for Handloom sector			
a	Loom upgradation through jacquards and other equipment	0.87	0.49	0.08
b	Pneumatic lifting mechanism for Handlooms			
(i)	2 Looms unit	0.17	0.08	
(ii)	4 Looms unit	0.26	0.18	
13	Support for setting up of Common Facility Centre for Yarn dyeing & Fabric processing (Special Technology Package)			
a	Computer Aided Textile Designing (CATD)	0.44	1.97	
b	Tub Dyeing - 25 kg capacity units	0.14	0.03	
c	Tub Dyeing - 50 kg capacity units	0.03	0.13	
d	Arm Dyeing - 50 kg capacity units	0.15	0.98	
e	Fabric Processing - 250 kg capacity units	0.49	0.35	
f	Support for effluent treatment plant for yarn dyeing and fabric processing units (Existing & new units)			
(i)	Zero discharge type (5000 litres / day)	0.20	0.21	
(ii)	Discharge to ground type (5000 litres / day)	0.15	0.06	

Contd.....

#	Name of the Scheme / Component	Approved allocation for 2014-15	Financial Progress	Of which progress w.r.t NER
14	Providing services of Master Weavers / Designers / Technicians			
a	Master Weavers / Designers	0.05	0.26	0.09
b	Master Dyers	0.02		
c	Master Technicians	0.00		
	Total for Post Yarn (Mulberry & Vanya)	2.97	4.72	0.16
IV	Marketing (Mulberry- 70% & Vanya- 30%)			
15	Support to States for creating / upgrading marketing infrastructure for cocoon and raw silk (Rs.1.50 cr for Trad. & Rs.0.70 cr. for Non Trad. States)	1.25	2.74	0.63
16	Support for setting up of Hot air driers			
a	50 kg. capacity units (Electrical)	0.20	0.47	0.30
b	100 kg. capacity units (Electrical)	0.08	0.29	
c	50 kg. capacity units (Multifuel)	0.01	0.01	
d	100 kg. capacity units (Multifuel)	0.01	0.02	
e	2000 kg. capacity conveyor Hot air dryer (Imported)	0.00	0.03	
17	Vanya Silk Market Promotion (VSMP) (100% meant for Vanya Sector)	0.15	1.15	0.15
	Total for Marketing	1.70	4.69	1.08
	Total for Post-cocoon Sector	18.78	33.76	2.24
	Revenue Head - 31	4.87	8.02	0.24
	Capital Head - 35	13.91	25.74	2.00
4	Support Services			
1	Crop Insurance Support (For all Sectors)	0.50	0.39	
2	Publicity for Sericulture sector	0.50	0.47	0.22
3	Support for Studies / Consultancies / Surveys organised by CSB & States	0.50	0.50	
4	Product Design, Development & Diversification	0.20		
5	Health Insurance Programme for sericulture farmers and workers	0.60		
6	Capacity building for sericulture sector (Includes all training and exposure visit to CSB, States and other Stakeholders)			
a	Beneficiary Empowerment Programme (BEP)	3.00	2.15	0.46
b	Sericulture Resource Centres (SRC)	0.50	0.34	
c	Skill Training & Enterprise Development Programmes (STEP)	0.30	0.30	
7	Developing Community Based Organizations (CBOs) in line with Resham Doot Concept	0.50	5.50	1.70
8	Support for Convergence Activities for Sericulture Development			
a	Cluster Development Projects	1.00	1.00	
9	Emphasis on tribal areas			
	Total for Support Services	7.60	10.65	2.38
	Revenue Head - 31	7.10	10.31	2.38
	Capital Head - 35	0.50	0.34	0.00
5	Special Initiatives (Flexi Fund) - Token Provision	3.70	2.40	0.39
	Grand Total for CDP (1 to 5)	213.00	213.00	60.00
	R-Revenue Head - 31	48.60	49.22	13.55
	C-Capital Head - 35	164.40	163.78	46.45

**CENTRALLY SPONSORED SCHEMES FOR SERICULTURE DEVELOPMENT DURING XII PLAN
INTEGRATED CATALYTIC DEVELOPMENT PROGRAMME
PHYSICAL TARGETS AND ACHIEVEMENTS UNDER CDP DURING 2014-15**

(Physical Units as indicated)

#	Name of the Scheme / Component	Unit	Approved target for 2014-15	Physical Progress	Of which progress w.r.t NER
1	Mulberry Sector				
a)	Mulberry Seed				
1	Franchise disinfection programme of NSSO	Nos.	21	10	
2	Support to construct Rearing Houses for Adopted Seed Rearers (ASRs) of NSSO	Nos.	15	23	
3	Revolving Capital fund support for State grainages and RSPs	Nos.	4	16	
4	Assistance for purchasing Seed Testing equipments for State grainages and private RSPs	Nos.	3	3	
5	Support to strengthen basic seed farms of States	Nos.	10	6	1
6	Support to upgrade State and Private commercial seed production units	No. of Units	18	15	
b)	Mulberry Cocoon				
1	Support for Mulberry Plantation Development	Acres	4804	12958	1195
2	Assistance for irrigation and other Water Conservation and usage techniques	Acres	2295	8683	325
3	Supply of Rearing Appliances (including improved mountages) / farm equipments to farmers) Farmers	Nos./ Acres	6617	10242	1134
4	Supply of quality Disinfecting Materials and other crop protection measures for farmers	Seed farmers	3583	42185	1340
5	Assistance for construction of Rearing Houses (RH) - Models of 1000 Sq.ft, 600 Sq.ft. & 225 Sq.ft.	Nos.	5,716	10724	1189
6	Assistance for maintenance of Chawki gardens, construction of Chawki Rearing Centre (CRC) buildings and procurement of Chawki Rearing equipments	Nos.	112	162	58
7	Production units for Biological inputs / Door to Door Service Agents for Disinfection and inputs supply & Assistance for Sericulture Poly-Clinics	Nos.	25	72	22
8	Support for development of Kisan Nurseries	Acres	29	182	41
9	Maintenance cost for Mulberry Plantation raised during X & XI Plan for 3 years	Acres	2674	828	816
10	Support for construction of Vermi-Compost Sheds	Nos.	653	815	170
11	Assistance towards fencing of mulberry gardens in States	Acres	1825	2296	2296
12	Assistance towards expansion of Rearing Houses to construct Mounting Halls in NE States	Nos.	1762	1542	1542
13	Support for increasing the yield of existing rainfed mulberry gardens through water conservation techniques	Acres	1214	1775	1050

#	Name of the Scheme / Component	Unit	Approved target for 2014-15	Physical Progress	Of which progress w.r.t NER
2	Vanya Sector				
a)	Vanya Seed				
i	Tasar				
1	Assistance to Private Tasar Graineurs	Graineur	405	376	
a	Assistance to existing tasar graineurs for upgradation of seed production capacity	Graineur	4	1417	
2	Assistance for strengthening of tasar seed multiplication infrastructure (Tropical Tasar)	PPCs	17	20	
a	Estt. of Basic Seed Production units (by SHGs, Co-operatives / NGOs)	Seed Prod.Units	2	1	
3	Assistance for strengthening of tasar seed multiplication infrastructure (Oak Tasar)	Grainages		2	1
4	Assistance for Tropical Tasar Rearers	Rearers	1510	2233	
a	Assistance for Oak Tasar Seed Rearers	Rearers	10	62	62
b	Assistance for mobile testing facility for disease monitoring and seed cocoon testing	Nos.	6	7	
ii	Eri				
5	Assistance to State Deptts. for strengthening of Eri farm cum grainages	Farm-cum-grainages	20	2	
a	Assistance to Eri Private Graineurs	Graineur	15	70	67
b	Assistance to Eri Adopted Seed Rearers	Rearers	363	216	194
c	Upgradation of State Eri Basic Seed farm cum grainages	Farm-cum-grainages	16	1	
d	Assistance for estt. of Self Help Eri Grainage units (SHEG)	Grainages	71		
e	Mobile testing and certification units	Nos.			
iii	Muga				
6	Assistance to Muga Private Graineurs	Graineur	15	75	75
a	Assistance to existing Muga Private Graineurs for upgradation of seed production capacity	Graineur	109	2	
7	Assistance to State Deptts. for strengthening of Muga seed multiplication infrastructure (P2)	Farm-cum-grainages	17		
a	Assistance for estt. of Muga P3 Basic Seed Production unit	Rearers			
b	Assistance to Muga Adopted Seed Rearers	Rearers	95	237	200
b)	Vanya Cocoon				
i	Tasar				
1	Support to rearers for Augmentation of Tasar Host Plantation	Ha.	1562	550	
a	Assistance to beneficiaries for raising Tasar food plant seedlings (Kisan Nurseries)	Nursery units	10	51	
b	Assistance to Tasar commercial rearers for development of Chawkie garden	Rearer	20		
c	Assistance to Tasar rearers for maintenance of existing Chawki plantation	Rearer		854	

#	Name of the Scheme / Component	Unit	Approved target for 2014-15	Physical Progress	Of which progress w.r.t NER
d	Assistance to tasar rearers for maintenance of existing tasar plantation	Ha.	150	305	
e	Conservation and utilization of Sal based Tasar Eco-races	No. of Camps			
2	Assistance for raising and maintenance of systematic Oak Tasar Plantation	Ha.	50	130	130
3	Assistance for construction of Cocoon Storage Houses in Tasar sector	Nos.	111	55	9
	a) Assistance for construction of Cocoon Storage and stifling facilities for Tasar rearers	Nos.	2	201	
ii	Eri				
4	Support for Castor / Tapioca cultivators with Start-up tools	Acres	888	94	
5	Augmentation of perennial eri food plants with supply of start-up tools	Acres	1436	1020	1020
a	Assistance for raising Kesseru food plants nursery	Nursery units	106	28	28
6	Assistance for construction of Rearing Houses	Nos.	1733	2402	1761
iii	Muga				
7	Augmentation and maintenance of Muga food plants with start-up tools	Acres	937	795	760
a	Assistance for raising Muga food plants nursery	Nursery units	34	28	28
b	Assistance for maintenance of existing Muga food plantation	Acres	2581	100	
3	Post Cocoon Sector				
I	Reeling & Spinning				
A	Mulberry				
1	Support for construction of Reeling Sheds				
a	Improved Cottage basin units				
(i)	36 ends unit (6 basins of 6 ends each)	Nos.	4	5	
(ii)	48 ends unit (6 basins of 8 ends each)				
b	Multiend reeling units				
(i)	6 basins unit (10 ends per basin)	Nos.	14	22	
(ii)	10 basins unit (10 ends per basin)	Nos.	10	48	
2	Support for motorized charkha to dissuade child labour	Nos.	48	18	
3	Support for establishment of improved Cottage basin reeling units				
a	36 ends unit (6 basins of 6 ends each)	Nos.	6	9	
b	48 ends unit (6 basins of 8 ends each)			50	
4	Support for establishment of Multiend reeling units				
a	6 basins unit (10 ends per basin)	Nos.	5	20	
b	10 basins unit (10 ends per basin)	Nos.	4	34	1

#	Name of the Scheme / Component	Unit	Approved target for 2014-15	Physical Progress	Of which progress w.r.t NER
c	Support for existing Multiend units for procurement of additional equipments / re-conditioning	Nos.	9	48	
5	Support for establishment of Automatic reeling units				
a	200 ends unit	Nos.	1	8	
b	400 ends unit	Nos.	2	3	
6	Support for establishment of Automatic Dupion reeling units (142 ends)	Nos.	1	2	
7	Assistance for Twisting units (480 ends)	Nos.	18	47	
8	Interest subsidy on working capital loan sanctioned by Banks to reeling units				
9	Incentive for production of Bivoltine silk				
a	Gradable bivoltine silk reeled on Multiend reeling units (Rs.100/- per kg)	Kg	68000		
b	2 A grade & above bivoltine silk reeled on Automatic reeling units (Rs.150/- per kg)	Kg	590		
B	Vanya				
10	Support for Vanya reeling / spinning sector				
a	Reeling cum twisting machines	Nos.	198	318	188
b	Wet reeling machine (2 basins of 6 ends each)	Nos.	13	8	
c	Two in one Reeling cum Twisting machine	Nos.	13	70	
d	Tasar cocoon sorting machine for Co-operatives / SHGs	Nos.	3	13	
e	Motorised / Pedal operated spinning machine	Nos.	474	437	309
f	Solar operated spinning machine	Nos.	25	50	
C	General (Mulberry- 70% & Vanya- 30%)				
11	Providing services of Master reelers/Technicians				
a	Master reelers	Nos.	22	17	
b	Master Technicians	Nos.	1	1	
II	Post Yarn (Mulberry- 70% & Vanya- 30%)				
12	Support for Handloom sector				
a	Loom upgradation through jacquards and other equipments developed by CSTRl	Nos.	384	585	65
b	Pneumatic lifting mechanism for Handlooms developed by CSTRl				
(i)	2 Looms unit	Nos.	36	49	
(ii)	4 Looms unit	Nos.	35	71	
13	Support for setting up of Common Facility Centre for Yarn dyeing & Fabric processing (Special Technology Package developed by CSTRl)				
a	Computer Aided Textile Designing (CATD)	Nos.	5	106	
b	Tub Dyeing - 25 kg capacity units	Nos.	4	1	
c	Tub Dyeing - 50 kg capacity units	Nos.	1	3	
d	Arm Dyeing - 50 kg capacity units	Nos.	1	10	
e	Fabric Processing - 250 kg capacity units	Nos.	2	2	
f	Support for effluent treatment plant for yarn dyeing and fabric processing units (Existing & new units)				
(i)	Zero discharge type (5000 litres / day)	Nos.	4	4	
(ii)	Discharge to ground type (5000 litres / day)	Nos.	4	2	

#	Name of the Scheme / Component	Unit	Approved target for 2014-15	Physical Progress	Of which progress w.r.t NER
14	Providing services of Master Weavers / Designers / Technicians				
a	Master Weavers / Designers	Nos.	3	18	6
b	Master Dyers	Nos.	2		
c	Master Technicians				
IV	Marketing (Mulberry- 70% & Vanya- 30%)				
15	Support to States for creating / upgrading marketing infrastructure for cocoon and raw silk (Rs.1.50 cr for Trad. & Rs. 0.70 cr. for Non Trad. States.)	Nos.	1	4	1
16	Support for setting up of Hot air driers				
a	50 kg capacity units (Electrical)	Nos.	24	49	27
b	100 kg capacity units (Electrical)	Nos.	6	26	
c	50 kg capacity units (Multifuel)	Nos.	3	2	
d	100 kg capacity units (Multifuel)	Nos.	2	1	
e	2000 kg capacity conveyor Hot air dryer (Imported)				
17	Vanya Silk Market Promotion (VSMP) (100% for Vanya Sector)				
4	Support Services				
1	Crop Insurance Support (For all Sectors)	dfls	815690		
2	Publicity for Sericulture sector				
3	Support for Studies / Consultancies / Surveys organised by CSB & States				
4	Product Design, Development & Diversification				
5	Health Insurance Programme for sericulture farmers and workers	No of policies	8000		
6	Capacity building for sericulture sector (Includes all training and exposure visit to CSB, States and other Stakeholders)				
a	Beneficiary Empowerment Programme (BEP)	Nos.	6500	7724	1026
b	Sericulture Resource Centres (SRC)	Nos.	40	27	
c	Skill Training & Enterprise Development Programmes (STEP)	No. of batches	18	17	
7	Developing Community Based Organizations (CBOs) in line with Resham Doot Concept	No. of SHGs	47	138	110
8	Support for Convergence Activities for Sericulture Development				
a	Cluster Development Projects	Clusters	50		
9	Emphasis on tribal areas				
5	Special Initiatives (Flexi Fund) - Token Provision				

**STATEMENT INDICATING THE STATUS OF STATE-WISE FUNDS RELEASED DURING
THE YEARS 2012-13, 2013-14 and 2014-15 UNDER CDP**

(Rs. in Crore)

#	State	2012-13	2013-14	2014-15
I	Southern Zone			
1	Karnataka	39.36	50.09	34.38
2	Andhra Pradesh	16.93	25.63	11.29
3	Telangana			7.53
4	Tamilnadu	12.96	11.86	14.09
5	Maharashtra	6.36	12.98	10.00
6	Kerala	0.00	0.01	
	Total for Southern Zone	75.62	100.56	77.29
II	Central & Western Zone			
1	Uttar Pradesh	7.36	10.92	8.70
2	Madhya Pradesh	7.72	12.12	11.33
3	Chhattisgarh	1.28	2.27	3.20
4	Rajasthan			
5	Gujarat			
	Total for Central & Western Zone	16.36	25.32	23.23
III	Eastern Zone			
1	West Bengal	5.19	5.78	3.10
2	Bihar	2.85	1.08	1.10
3	Jharkhand	15.02	30.52	17.00
4	Odisha	5.09	5.37	2.73
	Total for Eastern Zone	28.15	42.74	23.93
IV	North Western Zone			
1	Jammu & Kashmir	15.94	15.65	14.58
2	Himachal Pradesh	0.98	4.24	5.09
3	Uttarakhand	4.94	8.12	3.21
4	Haryana			0.13
5	Punjab	0.32		
	Total North Western Zone	22.18	28.01	23.02
V	North Eastern Zone			
1	Assam	21.22	31.64	16.00
2	Bodoland Territorial Council	6.39	13.20	8.11
3	Arunachal Pradesh	2.20	4.10	2.76
4	Manipur	6.89	10.01	6.72
5	Meghalaya	6.70	10.64	5.67
6	Mizoram	6.00	9.88	5.90
7	Nagaland	5.21	10.80	8.40
8	Sikkim	0.46		
9	Tripura	7.78	8.84	6.44
	Total North Eastern Zone	62.85	99.12	60.00
	CSB			5.53
	Total for All Zones	205.16	295.75	213.00

STATE-WISE SILK PRODUCTION DURING 2013-14

State	Mulberry plantation (Hectare)	Mulberry Raw Silk (MT)			Vanya Raw Silk (MT)			Total (M+V) (MT)	
		Bivoltine hybrids	Cross Breed	Total	Tasar	Eri	Muga		Total
Andhra Pradesh	45647	380	6531	6911	0.46			0.46	6911
Arunachal Pradesh	320	2		2	0.20		1	13	15
Assam	7608	27		27		2613	126	2739	2766
Bihar	618		15	15	32			37	52
Chhattisgarh	765	1	5	6	384			384	390
Haryana	43	0.1		0.13				0.00	0.13
Himachal Pradesh	1618	25		25				0	25
Jammu & Kashmir	7983	136		136				0	136
Jharkhand	353		3	3	2000			2000	2003
Karnataka	80873	808	7766	8574				0	8574
Kerala	103	4		4				0	4
Madhya Pradesh	2595	67	41	108	86		1.0	87	195
Maharashtra	1488	107	4	111	10			10	121
Manipur	6528	113	16	129	4		353	358	487
Meghalaya	2510	14		14			614	16	644
Mizoram	3541	18	16	34	0.70		1	10	44
Nagaland	676	7		7	0.29		597	2	606
Odisha	453	1	2	3	45		5	50	53
Punjab	964	4		4				0	4
Sikkim	198			0				0	0
Tamil Nadu	13062	711	410	1121				0	1121
Telangana									
Tripura	2060	25	15	40				0	40
Uttar Pradesh	6059	78	77	155	14		20	34	189
Uttarakhand	2354	18		18	0.1		3	4	22
West Bengal	14604	14	2016	2030	42		7	49	2079
Grand-Total (a+b)	203023	2559	16917	19476	2619		4237	7004	26480

Source: MIS reports received from State Sericulture Departments

Contd....

STATE-WISE SILK PRODUCTION DURING 2014-15

State	Mulberry plantation (Hectare)	Mulberry Raw Silk (MT)			Vanya Raw Silk (MT)				Total (M+V)
		Bivoltine hybrids	Cross Breed	Total	Tasar	Eri	Muga	Total	
Andhra Pradesh	45726	495	5990	6485					6485
Arunachal Pradesh	342	1		1		10	1	11	12
Assam	7356	29	2	31		3055	136	3191	3222
Bihar	693		12	12	33	8		41	53
Chhattisgarh	744	0.54	8	8	225			225	234
Haryana	136	0.3		0.3					0.30
Himachal Pradesh	1780	30		30					30
Jammu & Kashmir	8132	138		138					138
Jharkhand	372		3	3	1943			1943	1946
Karnataka	88489	1203	8442	9645					9645
Kerala	125	7		7				0	7
Madhya Pradesh	4854	128	59	187	59	1.5		61	248
Maharashtra	2774	199	3	202	19			19	221
Manipur	6858	138	12	150	4	361	1	366	516
Meghalaya	2659	17		17		622	16	639	656
Mizoram	3700	32	8	40	0.02	10	0.10	10	50
Nagaland	633	6		6	0.10	610	3	614	619
Odisha	463	2	1	3	88	7		95	98
Punjab	1127	4		4				0	4
Sikkim	198	5		5		3	0.17	3	8
Tamil Nadu	16576	1207	395	1602				0	1602
Telangana	1862	51	49	100	0.26			0.26	101
Tripura	2426	33	15	48				0	48
Uttar Pradesh	3866	87	99	186	18	32		50	236
Uttarakhand	2774	29		29	0.02	0.23		0	29
West Bengal	15153	27	2423	2450	43	6	0.27	49	2499
Grand-Total (a+b)	219819	3870	17520	21389	2434	4726	158	7318	28708

Source: MIS reports received from State Sericulture Departments



CENTRAL SILK BOARD

Ministry of Textiles, Govt. of India

CSB Complex, BTM Layout, Madivala, Bengaluru-560 068

E-mail : ms.csb@nic.in Web: www.csb.gov.in

Tel: +91 80 26282699 Fax: + 91 80 26681511