

CENTRAL SERICULTURAL RESEARCH & TRAINING INSTITUTE, BERHAMPORE

1. Organizational set up

Unit	No	Place
RSRSs	03	1. RSRS, Kalimpong, West Bengal 2. RSRS, Koraput, Odisha 3. RSRS, Jorhat, Assam
RECs	09	1. REC, Mothabari, Malda, West Bengal 2. REC, Mamring, Sikkim 3. REC, Bhandra, Jharkhand 4. REC, Agartala, Tripura 5. REC, Aizawl, Mizoram 6. REC, Shillong, Meghalaya 7. REC, Dimapur, Nagaland 8. REC, Mangaldoi, Assam 9. REC, Sille, Arunachal Pradesh

2. R&D Projects, TOT, ECP, CBT etc:

#	Item	Target	Remarks
1.	CSB coded Research projects		
1.1	With PI from the Institute		
1.1.1	Projects of earlier year to be continued through the year 2022-23	13	Annex 2.I.1
1.1.2	Projects to be concluded during the year 2022-23	2	Annex 2.I.2
1.1.3	New Projects to be initiated during 2022-23	8	Annex 2.I.3
1.2	With CI from the Institute (Collaborative)		
1.2.1	Projects of earlier year to be continued through the year 2022-23	4	Annex 2.I.4
1.2.2	Projects to be concluded during the year 2022-23	2	Annex 2.I.5
1.2.3	New Projects to be initiated during 2022-23	1	Annex 2.I.6
2.	Transfer of Technology		
2.1	On Station Trials (OST)		
2.1.1.	No. of technologies to be validated	0	Annex 2.II.1
2.1.2.	No. of trials to be conducted		
2.2	On Farm Trials (OFT)		
2.2.1.	No. of technologies to be demonstrated	0	Annex 2.II.2
2.2.2.	No. of locations to be covered		
2.2.3.	No. of stakeholders to be covered		
3.	Capacity Building & Training (CBT)		
3.1	No. of programmes conducted	90	Annex 2.III
3.2	No. of stakeholders trained	2000	
3.3	No. of programmes conducted (KVKs)	1	
3.4	No. of stakeholders trained (KVKs)	24	

4.	Extension Communication Programs (No.)		Annex 2.IV
4.1.	Krishi Mela / Farmers' meet	4 (1000)	
4.2.	Farmers Field day	20 (1000)	
4.3.	Awareness programme	45 (2250)	
4.4.	Technology demonstration / Enlightenment programmes	45 (900)	
4.5.	Workshop / Seminars & Conferences	1 (100)	
4.6.	Technical workshops for CRCs	2	
5.	Soil Analysis Service provided	600	Annex 2.V
6.	Information, Education & Communication		
6.1.	Periodicals	2	Annex 2.VI
6.2.	Publications	30	
6.3.	Extension literature	10	
6.4.	Films / Videos	4	
6.5.	Social media	20	
7.	Patents to be filed/ granted, technologies to be commercialized, Software, mobile/ android app developed etc.	1/1/0/0	Annex 2.VII
8.	Revenue generation (Rs. In Lakh)	18.80	Annex 2. VIII
9.	Procurement of Equipment and other accessories	9	Annex 2. IX
10.	Other activities (<i>pl specify</i>)		
10.1.	Cluster promotion Programmes (Raw Silk in MT)	207	Annex 2.X

1. CSB coded Research projects

1.1 With PI from the Institute

Annex- 2.I.1

1.1.1. Projects of earlier year to be continued through the year 2022-23:

#	Code	Title	Start	Closure	Milestone to be crossed	Progress to be achieved	Budget (2022-23; Rs. Lakh)
At Main Institute							
1.	PIE 02002 SI	Evaluation of performance of mulberry genotype C-9 under red and laterite soils	July, 2019	June, 2023	Evaluation of C-9 and checks for leaf - growth traits and yield at 3 rainfed red and laterite soils in East & NE India. Assessment of Pests and diseases severity during different seasons	Performance of C-9 and checks at 3 rainfed red and laterite soils in different seasons of 2022-23. Leaf quality through and Pests & diseases severity	0.60
2.	PPA 02005 SI	Optimization of spacing and nutrient dose for newly developed high yielding mulberry variety (C-2038) under irrigated condition	Oct, 2019	Sep, 2023	Evaluation of different spacing and nutrient doses on growth and leaf yield of new mulberry variety C2038 under irrigated condition. Assessment leaf quality by biochemical assay and pests & disease severity in different seasons. Assessment leaf quality and cocoon parameters by silkworm bioassay.	Determination of suitable spacing and nutrient dose for higher leaf yield and quality for mulberry variety C-2038. Nutritional quality and Pests & diseases severity among different treatments. Performance for cocoon parameters among different treatments.	2.50
3.	PIB 020 10SI	Final yield trial of promising high yielding mulberry genotypes for Northern and North-Eastern India	Feb, 2021	Jan, 2025	Evaluation of test genotypes and checks for growth traits and leaf yield in different seasons. Assessment of leaf quality by biochemical and pests-diseases severity during different seasons	Productivity of test genotypes under rainfed drought and irrigated condition. Leaf quality of genotypes and checks for nutritive and pests-diseases severity.	2.70
4.	PIB 02007 SI	Improvement of mulberry leaf longevity in Eastern and North Eastern states of India	June, 2020	May, 2024	Pot culture studies of different formulations in improving leaf longevity along with yield and quality. Evaluation of best formation under field	Identification of best formulation from pot study for improving leaf longevity, yield and quality. Field evaluation of	6.00

					for leaf longevity and productivity.	the formulation.	
5	AIT020 08SI	Identification of high humidity tolerant silkworm breeds/hybrids for E & NE India	June, 2020	May, 2024	Screening of identified breeding lines for DNA marker for high humidity/ high temperature tolerance. Gene expression for tolerance to high humidity / high temperature under simulated conditions	Identification of DNA for high humidity/ high temperature tolerance; Correlation of gene expression with survival and overall performance of promising breeding lines	14.50
6	AIT020 12CI	Characterization of mulberry silkworm, <i>Bombyxmori</i> L. mutants for tolerance to flacherie syndrome through genome editing tools	Oct, 2021	Sep, 2023	Identification & characterization of bacterial pathogens causing flacherie disease in silkworm. Identification of target sites/ genes pertaining to viral & bacterial pathogens Construction of CRISPR/Cas9 system (to be conducted at Japan)	Identification of bacterial pathogens causing flacherie disease in silkworm Target sites identification for gene editing <i>in vitro</i> synthesis of sgRNAs and Cas9-coding mRNA (at Japan)	16.15
7	AIB 02006 MI	Improvement of Nistari lines for survival and Silk productivity	June, 2020	May, 2024	Analysis of <i>BmNPV</i> tolerance and MAS Stabilization of selected lines for desired traits	Nistari lines with high productivity and superior silk filament Identification of Nistari lines with improved survival	5.00
8	MOE 02011 EF	Development of Seri-entrepreneurship through sericulture chawki business by setting up two 02 Chawki Rearing Centers (CRCs) as demonstration units in Murshidabad district, West Bengal	Mar, 2021	Feb, 2024	5 chawki crops during commercial rearing 10 Chawki awareness programme	Chawki crops PMIC meeting Awareness prog.	20.89

9	PIE020 13SI	Final Yield Trial of newly identified mulberry genotypes for leaf productivity and quality.	Jan, 2022	Dec, 2026	Multiplication, Transplantation and Establishment of seven test genotypes and two checks Evaluation for leaf yield and quality under irrigated condition.	Established seven test genotypes and two checks under FYT at CSRTI Berhampore Six test genotypes recorded higher leaf yield (>10%) over C2038 under irrigated condition during Oct-Nov, 2021crop. Pests and diseases severity was noticed which was at par with checks.	1.50
10	MOE 02014 SI	Popularization of Improved Sericultural Technologies for Eastern and North-Eastern India	Feb, 2022	Jan, 2025	Popularization of new mulberry varieties, Bio-Control Agents, room disinfectant NIRMOOL, sampoorna, Chawki rearing, Shoot/Shelf rearing & Plastic collapsible mountages among East& NE farmers.	Popularization of new sericultural technologies and improvement of leaf and cocoon productivity at farmer's field for sustainable sericulture and to increase silk production in East & NE India	166.05
11	MOE 02015 MI	Evaluation of promising mulberry varieties, bed disinfectant and low cost drip fertigation system for Eastern & North-Eastern India	Feb, 2022	Jan, 2025	Evaluation of Promising Mulberry Varieties C-1, C-11, C-7, Bed disinfectant Ser-win, and Low cost Drip Fertigation System at different stations of Eastern &North-Eastern India	Validation of new technologies at different stations/ locations for Eastern & North-Eastern India before commercial exploitation.	9.175
12	MOT 02016 EF	Seri - Entrepreneurship Development in Aspirational districts of NE India	Feb, 2022	Jan,, 2024	Promotion of 100 Seri-enterprises in Aspirational districts in North-East India Assessment of socioeconomic benefits of developed Seri-enterprises	Increasing overall productivity levels and economic returns from mulberry sericulture Aspirational Districts of NE India for supplying critical inputs	34.20
13.	MTL 02017 CN	Development of Integrated Farming System Model	Apr, 2022	May 2024	To develop site specific Sericulture based IFS models suitable for hilly	Efficient Sericulture based IFSModel for higher returns in	2.50

		for Hilly Region of West Bengal			region. Impact analysis of IFS	hilly regions of WB.	
TOTAL							281.765

Annex- 2.I.2**1.1.2. Projects to be concluded during the year 2022-23:**

#	Code	Title	Start	Closure	Project Outcome	Utility of out-put / Impact on silk industry	Budget (2022-23; Rs. Lakh)
At Main Institute							
1.	AIC 02004 CN	Molecular characterization and assessment of the efficacy of low molecular weight peptides isolated from mulberry leaf against flacherie disease of silkworm	May 2019	May 2022 (Exd till Aug, 22)	Anti-microbial peptide will be identified. Potential flacherie suppressant will be identified. Dose and mode of application of peptide will be determined.	Identified low molecular weight peptide with antimicrobial and antioxidant potential will be utilized against bacterial pathogens causing Flacherie disease in silkworm.	8.640
2.	AIB 02009 MI	Authorization trials silkworm hybrid, 12Y x BFC1 in Eastern and North-Eastern India [Coll. Project with NSSO & CSTRI-Bengaluru]	Aug 2020	July 2022	Improved crossbreed for Eastern & North Eastern region would enable commercialization to enhance the income of the farmers and silk output.	The new hybrid, 12Y x BFC1 would be useful in improving silk productivity and quality in Eastern & North Eastern region across the seasons.	15.81
TOTAL							24.45

Annex- 2.I.3**1.1.3. New Projects to be initiated during 2022-23:**

#	Code	Title	Start	Closure	Objective	Expected outcome	Budget (2022-23; Rs. Lakh)
At main institute							
1.	AIE 02018SI	Identification of superior Bivoltine foundation cross as a male component to improve crossbreed	May, 2022	Oct, 2024	To identify superior bivoltine foundation crosses as male component to improve the crossbreed productivity in E & NE India	Newly developed productive bivoltine foundation crosses when combined with sturdy ruling multi-voltine' expected to	3.00

		productivity in E & NE India				increase silk productivity particularly in Eastern region and in general at NE region.	
2.	Concept Note approved by 58 RC held on 11.11.21)	Improvement of seed crop productivity in West Bengal (with DoS& NSSO)	2022	2025	To improve quality multivoltine and bivoltine seed crop by utilizing existing silkworm breeds To improve the production of hybrid dfls for commercial crops in West Bengal	Stabilization of seed cocoon (bivoltine and multivoltine) generation in W.B. Sustainable development of bivoltine seed cocoons. Ensure proper marketing of seed cocoons and production of good quality dfls during commercial crops in West Bengal. Reduction of grainage cost by avoiding transportation of bivoltine seed cocoons from south and other parts of India and increasing recovery %. Testing of breeds (bivoltine and multivoltine) developed at this research Institute in the field. Transfer of technology under ToT to the field in more number Training to seri-farmers for human resource development.	43.10
3.	New Project Proposal (Approved Concept Note)	Establishment of pilot plant for production of pharmaceutical grade sodium copper chlorophyllin	2022	2025	To install a pilot plant for the production of sodium copper chlorophyllin (SCC) from silkworm feculae. To characterize the	Identification of suitable high yielding mulberry genotype (s) with disease resistance and improved quality characteristics for E	61.590

		from silkworm feculae.			SCC from silkworm feculae. To improve the quality standard of the synthesized SCC.	& NE region	
4	New Project Proposal	On-farm trials of thermo-tolerant silkworm double hybrid, WB13 × WB75 in Eastern & North Eastern India	2022	2024	To evaluate thermo-tolerant bivoltine double hybrid, WB13 × WB 75 at the farmers' level (OFT) in E & NE India	Successful field evaluation (OFT) of the hybrid, data on WB13 × WB75, performance would be submitted to Hybrid Authorization Committee (CSB) for hybrid authorization trials in E & NE India.	9.446
5	New Project Proposal	Authorization trials of new bivoltine double hybrid, BHP-DH at E & NE India (2 Lakhs dfls in two years)	2022	2024	To evaluate the new Bivoltine double hybrid, BHP-DH with farmers of Eastern and North-Eastern India for generation of data and submission for Hybrid Authorisation.	Upon scrutiny of its superior performance over ruling hybrid, the new bivoltine double hybrid, BHP-DH would be authorized by HAC and recommended for commercial exploitation in E & NE India.	20.00
6	Concept note awaiting approval of RCS	Comprehensive analysis of noncoding RNA-mediated epigenetic mechanisms that modulate immune responses against flacherie in the silkworm <i>Bombyxmori</i>	2022	2025	To determine phenotypic plasticity induced by epigenetic factors such as variability in temperature and humidity in disease tolerant and susceptible races of <i>B. mori</i> . To identify and characterize differentially expressed non-coding RNAs upon different biotic and abiotic stress in silkworms and their target mRNA interaction in silkworms. To determine the	The study would provide key insights into the miRNA - mediated epigenetic mechanism regulating inter-relationship of temperature and humidity with incidence of flacherie disease Utilization: miRNA profile of diseased silkworm can be used for early detection of disease under unfavourable conditions. Potential non-coding RNAs would be utilized as therapeutic	41.93

					role of differentially expressed non-coding RNAs in regulating immune response in silkworms	agents to minimize cocoon crop losses in sericulture. This would eventually augment the profits to silkworm farmers and facilitates the growth of silk industry.	
7	New Concept note approved by 60 th RC	Molecular characterization of newly developed bivoltine breeds of <i>Bombyx mori</i> for Eastern & North Eastern India	2022	2025	To assess phenotypic variability including protein variability among newly developed bivoltine breeds. To analyze expression pattern of genes associated with immunity, stress and yield traits for selection of bivoltine genotypes. To synthesize hybrids from selected parents (based on observations from Obs. 1- 2) suitable for east and NE region	Development of Bivoltine hybrids suitable for east and NE region based on functional gene markers	24.68
8	New Concept note approved by 60 th RC	Economics of sericulture	2022	2024	To work out cost & return in cocoon production. To estimate the relationship between socio-economic characters with cocoon yield and income. To trace out the cocoon marketing channel in West Bengal. To document the constraints faced by sericulturists in West Bengal.	Economic of cocoon production and socio-economic characters will be understood along with the marketing characters in West Bengal.	3.00

NESTED UNITS							
9	New Project Proposal [RC approved]	Improvement of Bivoltine Seed Cocoon Productivity in NE region of India	2022	2025	To improve bivoltine seed cocoon productivity with selected ASRs. To improve Grainage performance of Bivoltine hybrid dfls production. To improve Economic upliftment of ASRs and Commercial farmers & Rawsilk Productivity in NE region.	The Bivoltine raw silk productivity will be improved (40.95%) in NE region. The improvement of Seed cocoon productivity will in turn promote grainage for improving the production of BV Hyb. in terms of quantity and quality. The improvement of ASRs performance will be motivating the other commercial farmers to adopt seed crop rearing. The economic status of farmers will be improved. The Raw silk estimation of NE region will be assessed by a right sample size of 80 ASRs	18.71
TOTAL							207.776

1.2 With CI from the Institute (Collaborative projects with other CSB Institutes) : NIL

Annex- 2.I.4

1.2.1. Projects of earlier year continued through the year 2022-23:

#	Code	Title	Start	Closure	Milestone to be crossed	Progress to be achieved	Budget (2022-23; Rs. Lakh)
At main institute							
1	PIE 13001 MI	All India Co-ordinated Experimental Trial for Mulberry Varieties-Phase IV	Apr, 2019	Mar, 2024	Evaluation of three test genotypes and two checks for leaf productivity and quality along with Pests and diseases severity in different seasons at 8 centers of East & NE India. Propagation study	Performance of three test genotypes and two checks for leaf productivity and quality in different seasons at 8 centers of East & NE India.	4.16

					of test genotypes and checks at 8 centers. Meteorological data collection at 8 centers		
2	AIT 08005 MI	Development and Evaluation of <i>Bidensovirusre</i> sistant silkworm hybrids developed from marker assisted breeding lines (Phase II) [Coll. of SBRL, Kodathi]	Mar, 2020	Feb, 2023	Evaluation of <i>BmBDV</i> resistant lines/hybrids with virus exposure. Maintenance of <i>BmBDV</i> lines at breeding units with MAS.	New hybrids resistant to <i>BmBDV</i> received from SBRL will be evaluated by virus exposure studies	1.75
3	MTL 01025 MI	Life Cycle Assessment of Mulberry Silk: A National Assessment	Mar, 2022	Feb, 2025	Collection and processing of data of sub-tropical mulberry (pre-cocoon sector to consumer sectors) of eastern India through experimentation, survey and questionnaire. Sampling Greenhouse Gases from the institutional and farmers fields and transportation to CSR&TI Mysuru. Sampling leachate samples for the C, N and pollution load and send samples to CSTRI-Bengaluru for carcinogens and pesticides analysis and CSR&TI Mysuru for other parameters. Collection, processing and analysis of the initial and final soil samples from study locations.	The study will support to attach the sustainable and eco-friendly tag to mulberry silk product. The inventory and LCA will support to evaluate potential environmental burdens and will also suggest the sustainability production of mulberry silk. The study will also provide important inputs to the policy-makers for designing policy towards low C, N water and energy footprint of mulberry silk products in different regions of India. Alternative practices for mitigation of respective environmental	0.00

					<p>Collect the information related bush plantation growth, height, and canopy management practices etc. Survey the farmers, reelers, industry, market and consumers etc for sub-tropical regions.</p> <p>Analyze the effluent/waste water samples for physic-chemical parameters excluding heavy metals, pesticides and carcinogens. Provide samples to CSTRI-Bengaluru for carcinogens analysis and CSR&TI Mysuru for heavy metals and pesticides.</p> <p>Collection of all respective data point to estimate the C, N, water and energy foot prints and budgets for respective locations of tropical mulberry silk.</p> <p>Establish the collaboration with the Industry of the Subtropical region & Preparation of the respective inventory.</p> <p>Analysis of the collected and generated data</p>	<p>footprints will be identified</p>	
TOTAL							5.91

Annex- 2.I.5

1.2.2. Projects to be concluded during the year 2022-23:

#	Code	Title	Start	Closure	Project Outcome	Utility of out-put / Impact on silk industry	Budget (2022-23; Rs. Lakh)
At main institute							
1	PRP 08002 MI	Identification of candidate genes based powdery mildew resistance for utilization in disease resistance breeding in Mulberry [Coll. With SBRL]	May, 2019	May, 2022	Phenotyping of two segregating population for powdery mildew diseases in February 2022. Statistical analysis of phenotypic data and report preparation	Powdery mildew diseases in two segregating population and germplasm.	0.20
2	AIB 01009 MI	Evaluation of new bivoltine double hybrid, TT21 x TT56 at farmers level for authorization for commercial exploitation [Coll. with CSRTI-Mysuru]	Apr, 2020	Mar, 2023	After authorization, hybrid TT21 x TT56 would be commercialized to increase quality raw silk production.	TT21 x TT56 after the authorization trials can be an alternate to the current popular hybrids to increase the quality raw silk production	1.712
TOTAL							1.912

Annex- 2.I.6

1.2.3. New Projects to be initiated during 2022-23: NIL

#	Code	Title	Start	Closure	Objective	Expected outcome	Budget (2022-23; Rs. Lakh)
1	ARE 01028MI	Recommendation of novel fungicidal and insecticidal applications for mulberry crop Protection	3 years		To identify novel fungicides and insecticides for mulberry protection	This study will help to ascertain the doses of newly available lesser toxic insecticides & fungicides for the effective management of major pests and diseases mulberry, by finding suitable alternatives for plant protectants facing the ban. The study will also generate information on the effects of newly formulated	7.67

					Fungicide/insecticides on the biosafety to silkworm A ready reckoner for the field application of novel fungicide/insecticide will be available to stake holders for timely application. This is expected to alleviate environmental pollution by adopting lesser toxic plant protectants.	
TOTAL						7.67

2. Transfer of Technology Programmes to be carried out during 2022-23

Annex- 2. II.1

2.1. On Station Trials (for validation of technology at CSB institutes / RSRs/ DoS units etc.)

#	Name of the Technology	Unit Cost (Rs. Lakh)	At CSB institutes	RSRs	DOS Units	Total	Fund reqt. (Rs. lakh)	Anticipated Impact
1	Evaluation of new bed disinfectants Seriwin	0.0012	1	16	10	27	1.5	--
2	Evaluation of high yielding & bacterial leaf spot resistant varieties C-7	0.10	1	1	4	6	0.55	--
3	Low cost drip fertigation for mulberry	0.11	1	3	4	8	1.945	--
4	Evaluation of High yielding and Low temperature stress tolerant C-01 and C-11	0.15	1	4	-	5	0.75	--

Note: 4 OSTs are combined under one mega project coded as MOE02015MI and the progress shown in R&D report w.e.f. Feb, 2022

Annex- 2. II.2

2.2. On Farm Trials (for demonstration of Technologies at farmers' level)

#	Name of the Technology	Unit Cost (Rs. lakh)	No. of locations	Fund reqt. (Rs. lakh)	No. of stakeholders
1	Evaluation of BHP-DH along with check 2020-21 – Target- 10,000 Dfls 2021-22 Target – 20,000 Dfls	0.0115 0.0115	14 14	1.60	100 100
2	Popularization of Sampurna for uniform spinning	0.001	10	0.50	627
3	Demonstration of Bio-control agents	0.002	8	0.30	150
4	Popularization of new mulberry varieties (C-2038, Tr-23/BC ₂ 59 & C-2028)	0.04	10	7.20	95

5	Popularization of chawki rearing	0.31	8	3.10	10CRCs [20 farmers & 2250 dfls/CRC]
6	Popularization of Collapsible Plastic Mountages & shoot feeding (shelf rearing)	0.17	8	34.00	200 farmers (@ dfls/ farmer & @7500/100 dfls)
7	Demonstration of modified charka (Suvarna+Souraneer)*	0.60	0	6.00	0

Note: All OFTs are combined under one mega project coded as **MOE02014SI** and the progress are shown in R&D report w.e.f. Feb, 2022

Annex- 2. III

3.A.Capacity Building & Training programmes to be carried out during 2022-23

#	Title of the training programme	Target		
		Physical (No.)	No. of stake holders	Financial (Rs. In lakh)
3.1	Structured Training Course*			
3.1.1	PGDS	1	30	3.0
3.1.2	Intensive Sericulture Training	2	40	5.24
3.2	Farmers Skill Training	17	425	19.76
3.3	Exposure visit for technology awareness	12	300	10.92
3.4	Technology Orientation Programme	4	100	4.22
3.5	Sericulture Resource Centres(SRCs)	40	800	3.40
3.5.a	Establishment of new Sericulture Resource Centres(SRCs)	1	-	5.00
3.6	Training under Post Cocoon Sector**	-	-	-
3.7	Management Development Programme under STEP	1	25	0.32
3.8	Training for Adopted Seed Rearers(ASRs)			
3.9	Training to Registered Seed Producers (RSPs)			
3.10	Training on Seed Act			
3.11	Other Need Based Training Programme			
3.12	Non-CBT: Training programme funded by agencies other than CSB*	12	280	-
3.13	Training under SAMARTH***			
3.13.1	Pre-cocoon (Silkworm rearing)			
3.13.2	Post cocoon–Silk (Reeling, Spinning, Wet processing)			
3.13.3	Post cocoon– Handloom (Designing &Weaving)			
	Total	90	2000	51.86

*Pl specify the details, **Name of training with duration, ***only NSQF aligned courses

3 B.Capacity Building & Training programme to be carried out for/ at KVKs during 2022-23**Breakup of expenditure details:**

	Training Location	CSRTI-Berhampore (Accomodation : Institute Hostel)
	No. of participants	24
#	Items/ Heads of Expenditure	
A	Boarding & Lodging charges for participants	
1	Lodging x 6 days [Rate varies according to location]	36,000.00
2	Boarding [Breakfast, lunch, dinner, session tea/coffee & snacks (twice) @ Rs. 800/- per day]	1,15,200.00
	Sub-Total - A	1,51,200.00
B	Training expenses	
1	Stationery, photocopying, Sanitizerr, mask etc @ Rs. 150/- per person	3,600.00
	Sub-Total - B	3,600.00
C	Faculty fee	
1	Rs. 500/- per session for internal faculties x 18 sessions	9,000.00
2	Programme co-ordinators fee: Rs. 250/- per day x 2 co-ordinator x 5 days	2,500.00
	Sub-Total - C	11,500.00
D	Transportation	
1	Train/ Road travel and other transit expenses for participants @ Rs. 2000 /- per person	48,000.00
2	Local conveyance, Taxi/ Bus hiring charges etc [for CSB institutes only]	15,000.00
	Sub-Total - D	63,000.00
E	Miscellaneous and contingencies	
1	Inauguration & Valediction , awards and other sundry expenses	5,000.00
	Sub-Total - E	5,000.00
	Total [A to E]	2,34,300.00

Note:

*Training Kit & Certificate Printing @ Rs. 250 per person, may be met from GIA Fund [Head: Training]

**Training Material & Module will be supplied from CO-Bengaluru

***TA/DA for one nominated programme Co-ordinator from CO (CBT Division/ RCS Section), may be met from GIA Fund [Head: Training]

****Travel Cost is to be restricted to 2AC train fare or actual bus / Train fare, whichever is lower

Annex- 2. IV

4. Extension Communication Programmes to be conducted during 2022-23

#	Programmes	Unit Cost (Lakh)	Budget (Rs. Lakh)	No. of events					No. of stakeholders to be sensitized				
				I Qtr	II Qtr	III Qtr	IV Qtr	Total	I Qtr	II Qtr	III Qtr	IV Qtr	Total
4.1	RKM cum exhibition	3/1.5	7.50	-	-	-	4	4	-	-	-	1000	1000
4.2	Farmers Field day	0.07-0.15	3.0	-	4	8	8	20	-	200	400	400	1000
4.3	Awareness programme	0.05-0.10	4.5	-	20	20	5	45	-	1000	1000	250	2250
4.4	Technology demonstration	0.01	0.45	10	15	15	5	45	200	300	300	100	900
4.5	Workshop/ Seminar & conference	1.0	1.0	-	-	-	1	1	-	-	-	100	100
4.6	Technical workshop for CRCs	1.0	2.00	-	-	1	1	2	-	-	100	100	200
4.7	Other activities												
	Total		18.45	10	39	44	24	117	200	1500	1800	1950	5450

[Note: participants- *Main Institutes (400-500); #RSRS (200-300); FFD (50-100), AP (50-100), TD (20)]{As per AAP minutes 22-23}

Annex -2.V

5. Soil analysis service to be provided during the year 2022-23

#	Name of state	Target
1.	Bihar	25
2.	Odisha	25
3.	West Bengal	100
4.	Manipur	50
5.	Assam& BTC	50
6.	Jharkhand	25
7.	Mizoram	50
8.	Arunachal Pradesh	50
9.	Nagaland	50
10.	Meghalaya	50
11.	Sikkim	50
12.	Tripura	50
13.	Chattisgarh	25
	Total	600
	Budget	1 Lakh

Annex -2.VI

6. Information, Education and Communication

#	Item	Target (No.)	Budget (Rs.; Lakh)
6.1	Periodicals	2	0.50
6.2	Publications		
6.2.1	Research papers-National	6	0.60
6.2.2	Research papers-International	4	4.00
6.2.3	Proceedings/ Abstracts	6	1.50
6.2.4	Books/ Book Chapters/ Manuals etc.	4	2.00
6.2.5	Popular Articles	6	0.00
6.2.6	Booklets, Brochures etc.	4	0.40
6.3	Extension literature (pamphlets & posters)	10	2.00
6.4	Films/ Videos	4	4.00
6.5	Social media	20	0.00
	Total	66	15.00

Annex-2.VII

7. Patents to be filed/ granted and Technologies to be commercialized

#	Item	Details	Fund Requirement (Rs Lakh)
7.1	Patents to be filed	1 (Bed disinfectant Seri-Win)	0.20
7.2	Patents due for granting		
7.2.1	A process patent titled "A method for disease management in mulberry plant"	Appl No.- TEMP/E-1/10395/2021-KOL dated 05-03-2021	0.00
7.2.2	A process patent titled "A method for assessment of soilmicrobial activity"	Appl No. TEMP/E-1/62723/2020-KOL dated 24-12-2020	0.00
7.3	Technologies to be commercialized	1 (Nirmool)	0.50
7.4	Software, mobile/android app developed etc.		
		TOTAL	0.70

Annex -2.VIII

8. Revenue Generation for the year 2022-23

#	Source of Revenue Generation	Physical (No.)	Revenue to be generated (Rs. lakh)
8.1	Patent (Technology)		
8.1.1	License Fee collected		
8.1.2	Royalty collected		
8.2	Testing & Analytical charges (Sample)		
8.2.1	Testing of Soil/water/FYM/ Leaf etc		

8.2.2	Quality analysis/ testing of products		
8.2.3	Testing of cocoons/silk yarn/fabric etc.		
8.3	Consultancy (Services)		0.50
8.4	Supply/ sale proceeds of cutting / Sapling/ seedling/ chawki worms/ cocoons/ Silk etc		
8.4.1	Mulberry cuttings/ saplings		1.10
8.4.2	Vanya host plant sapling/ seedling		
8.4.3	Mulberry chawki worms		
8.4.4	Mulberry seed (DFLs)/ Cocoons		0.20
8.4.5	Vanya DFLs		
8.4.6	Cocoons/Pierced Cocoons		0.20
8.4.7	Output from R&D Projects (Silk, fabric, etc)		0.20
8.4.8	Others (pl specify)		
8.4.8	Sales of grass/ fallen tree etc		0.10
8.4.9	Sales of water plant ATM		0.50
8.4.10	Rent & hiring charges (Building/ Qtr/ Meeting rooms/Guest house/ Hostel)		15.80
8.4.11	Miscellaneous (Xerox/publication/fine etc.)		0.20
	Total		18.80

Annex -2.IX

9. Procurement of Equipment and other accessories

#	Equipment/other requirement	Quantity	Justification	Approx. price (Rs. in lakh)
At main institute				
9.1	Deep freezer (-80°C)	1	Instrument is required for the approved project AIT02008SI	3.97
9.2	RTPCR Machine	1	Instrument is required for the approved project AIT02008SI	11.15
9.3	Generator Set (250 KVA)	1	Required for the R&D activities of the institute	23.00
9.4	Green Seeker	1	For measuring NDVI (Normalized Difference Vegetation Index) which indicated the chlorophyll and nitrogen content of the leaf.	1.50
9.5	IRGA	1	For measuring plant photosynthesis, transpiration, stomatal conductance and chlorophyll fluorescence.	50.00
9.6	Pilot plant system for SCC extraction	1	For new proposed project	35.00
9.7	Ultrapure water purification system	1	For new proposed project	15.00
9.8	pH meter	1	For new proposed project	00.15
9.9	Soxhlet apparatus	1	For new proposed project	00.50
	Total	9		140.27

10. Other activities to be taken up during the year 2022-23**10.1 Cluster Promotion Programme**

Target for 2022-23								Budget (Rs. Lakh)
State	Mega Cluster	Dfls (Lakh)			Raw Silk (MT)			
		BV	ICB	Total	BV	ICB	Total	
West Bengal	Malda	3.50	4.00	7.5	28.40	16.00	44.40	1.716
	Murshidabad	3.25	4.00	7.25	26.60	16.00	42.60	1.716
	Sub Total (E Zone)	6.75	8.00	14.75	55.00	32.00	87.00	3.432
Manipur	Manipur-Plain	2.75		2.75	17.50		120.00	0.858
	Manipur-Hill	2.75		2.75	17.50		175.00	0.858
	Sub Total	5.50		5.50	35.00		120.00	1.716
Assam	Assam-Lower	4.50		4.50	30.00		175.00	1.716
	Assam-Upper	4.25		4.25	24.00		120.00	1.716
	Sub Total	8.75		8.75	54.00		175.00	3.432
Mizoram	Aizawl	2.80		2.80	16.00		120.00	0.858
Tripura	West Tripura	2.50		2.50	15.00		175.00	0.858
Sub Total (NE Zone)		19.55		19.80	120.00		120.00	6.864
Total (E & NE zone)		26.30	8.00	34.30	175.00	32.00	207.00	10.296
Monitoring & overhead expenditure								3.50
Total Expenditure								13.796

10.2 Other Activities to be taken up during the year 2022-23:

Activities	Budget (Rs. Lakh)
• Maintenance of mulberry germplasm and demonstration plots	0.60
• Maintenance of breeder stock of varieties for supply of mulberry cuttings	0.40
• Maintenance of mulberry nursery for raising saplings	0.10
• Maintenance of mulberry garden, supply of leaf/ shoot for in-house rearing	0.20
• Expansion of New Mulberry variety	0.10
• Soil Testing and monitoring of fertility status of mulberry gardens	0.10
• Maintenance of silkworm pathogens and evaluation of their virulence	0.25
• Forewarning forecasting of silkworm diseases and pests	1.00
• Pebrine monitoring	1.00
• Testing of quality of products/disinfectants	0.25
• Maintenance of mulberry garden, supply of leaf/ shoot for in-house rearings	23.16
• Maintenance of Breeders' stocks of poly-voltine and bivoltine silkworm breeds	4.00
• Large scale evaluation of new silkworm breeds/ hybrids	
• Seed multiplication for silkworm breeds/hybrids	
• Maintenance and mass -multiplication of bio-control agents	0.50
• Forewarning forecasting of mulberry pests and diseases	2.00
• Testing for post cocoon parameters	2.00
• Consultancy	1.00
• RTI	0.50
• Pilot Study	2.00
• Eri 80 dfls production at RSRS Koraput	0.75
TOTAL	39.91