

CENTRAL TASAR RESEARCH AND TRAINING INSTITUTE (CTR TI), RANCHI**1. Organizational Set up**

Unit	No.	Place
RSRS	06	Tropical: 1. Dumka (Jharkhand) 2. Baripada (Odisha) 3. Bhandara (Maharashtra) 4. Jagdalpur (Chhattisgarh) 5. Warangal (Andhra Pradesh) Temperate: 6. Bhimtal (Uttarakhand)
P4 Station	01	Tropical: 1. P4 Station, Chakradharpur (Jharkhand)
REC	03	Tropical: 1. Kapistha (West Bengal) 2. Seoni-Champa (Chhattisgarh) Temperate: 3. Palampur (Himachal Pradesh)
Raw Material Bank	01	1. RMB, Chaibasa (Jharkhand)

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. On-going projects during the year 2023-2024	11	Annex 4.I.1
1.1.2. Projects to be concluded during the year 2023-2024	06	Annex 4.I.2
1.1.3. New Projects to be initiated during the year 2023-2024	08	Annex 4.I.3
1.2. With CI from the Institute		
1.2.1. On-going projects during the year 2023 -2024	00	Annex 4.I.4
1.2.2. Projects to be concluded during the year 2023-2024	01	Annex 4.I.5
1.2.3. New Projects to be initiated during the year 2023-2024	01	Annex 4.I.6
2. Transfer of Technologies (ToTs)		
2.1 On Station Trials (OST)		Annex 4.II.1
2.1.1. No. of technologies to be validated	05	
2.1.2. No. of trials/locations to be covered	40	
2.2 On Farm Trials (OFT)		Annex 4.II.2
2.2.1. No. of technologies to be demonstrated	05	
2.2.2. No. of locations to be covered	36	
2.2.3. No. of stakeholders to be covered	496	
3. Capacity Building & Training (CBT)		Annex 4.III
3.1. No. of programmes to be conducted	77	
3.2. No. of stakeholders to be covered	1527	
4. Extension Communication Programs (No.)		Annex 4.IV
4.1. Number of programmes to be conducted	124	
4.2. No of stakeholders to be covered	5300	
5. Soil analysis services provided		Annex 4.V
5.1. No. of states to be covered	03	
5.2. No. of samples to be analysed	200	
6. Information, Education & Communication		Annex 4.VI
6.1. Periodicals	3	
6.2. Publications	40	
6.3. Extension literature	4	
6.4. Films / Videos	10	

6.5.Social media	250	
7. Patents to be filed/ granted, technologies to be commercialized, Software, mobile/android app to be developed etc.	1/3/1/0	Annex 4.VII
8. Procurement of equipments& other accessories	356.80	Annex 4.VIII
9. Other activities(pl specify)	09	Annex 4. IX
10. Revenue to be generated (Rs. in Lakhs)	25.00	Annex 4. X

** Programmes in convergence with ICAR-KVKs and expenditure on engagement of seasonal labour not included.*

1. CSB coded Research projects

1.1. With PI from the Institute

Annex-4.1.1

1.1.1. Ongoing projects during the year 2023-2024

(Rs. Lakhs)

#	Code	Title	Start	End	Milestones to be crossed	Progress to be achieved	Budget allocation
At main institute							
1	PIB 04009 SI	Evaluation of identified hybrids of <i>Terminalia arjuna</i> × <i>T. tomentosa</i> and drought tolerant accessions of <i>T. arjuna</i> for their suitability in different tropical tasar silkworm rearing regions.	Oct 2021	Sep 2027	Preparation of experimental plot, preparation of pits. Soil sampling. Evaluation of potted plants for soil moisture stress Transport and plantation of saplings at the test centers in the experimental plot and maintenance for establishment. Observation of morphological traits. Soil sampling and analysis of soil nutrient content.	Preparation of experimental layout, land, pit making and soil sampling. Evaluation of test hybrids/ accessions for morphological, physio-biochemical characteristics. Planting of saplings in the experimental plot. Characterization of test hybrids for leaf morphological and anatomical characters. Soil nutrient status and evaluation of test Accessions for morphoanatomical characteristics.	61.57
2	PPA 04010 CN	Region and season specific selection of pruning and brushing schedule for tasar food plants and silkworm protection	Feb 2022	Jan 2025	Procurement of s, chemical and fertilizes Preparation of field and selection of food plants for experiment Selection of suitable pruning date for first crop Recording of ecological data. Recording of agronomical data Recording of pest and disease data. Selection of suitable pruning date for second crop and third crop. Selection of suitable brushing date for first crop and second crop (BV & TV)	Region and season wise suitable pruning and brushing schedule for low pest infestation and higher crop yield. Estimation of GDD requirement for different stage of silkworm and optimum production of leaf from pruning date.	13.30
3.	ARE0	Species diversity,	Feb	Jan	Yield loss estimation during first crop and	Extent of yield loss in tasar culture due to	8.65

	4011 MI	assessment of potential loss and management of predatory wasps in tasar ecosystem	2022	2025	second crop Preparation of attractant traps for field evaluation	wasps predation Ready to use traps for field experimentation	
4.	ARP 04012 SI	Developing ectomycorrhizal bio-inoculants for improving survival and leaf yield of <i>Terminaliaarjuna</i> and <i>Terminalia tomentosa</i>	Feb 2022	Jan 2026	In vitro evaluation of nutrient mobilization and uptake by fungus	Complete in vitro characterization of fungi with ECM potential	18.80
5.	AIE 04004 CN	Study on existence of tropical tasar silkworm ecoraces and their subsist place with the help of geospatial technology	Mar 2020	Feb 2025	Survey, collection of host plant data, meteorological data, larvae, cocoons, moths, etc., pest & predator data, soil samples, soil testing, etc. Collection of GPS data from all centres and data base development (NESAC, Umiam). SNP based molecular characterization will be performed for collected ecoraces (CTRTRI, Ranchi).	Various ecoraces viz. Sarihan, Raily, Baraf, Modal, Jata, Andhra Local, Bhandara, wild Daba, prevailing in different locations of Chhattisgarh, Odisha, Telangana, Maharashtra, Jharkhand, will be surveyed and collected all the supporting metadata. Geolocation of the ecoraces inside the forest will be tagged using GAGAN dongle. All the metadata and geodata will be fed with the help of developed TasarGeoTag mobile application. Collected ecoraces will be characterized using SNPs.	CTRTRI: 9.8 NESAC: 8.86
6.	APR 04015 CN	Documentation and Validation of Indigenous Technical Knowledge (ITKs) in Tropical tasar Zone	Dec 2022	Nov 2025	Identification and documentation of ITK's	Documentation and Validation of ITK's	6.10
7	ARP	Tasar silkworm	Mar	Feb	Disease monitoring and detection as per	Disease monitoring will be done.	22.12

	04016 MI	disease monitoring and management	2023	2028	<p>schedule (random samplings) Disease monitoring locations will be tagged with the help of GPS. Disease survey, visit to respective grainage, Data compilation, analysis, preparation and submission of report. Collection of disease samples to morphological characterization of the pebrine</p>	<p>Systematic documentation and reporting. Various morpho-variants will be identified</p>	
8	AIB 04017 MI	Selection of Stable Thermo-tolerant line(s) of Tropical Tasar Silkworm <i>Antheraea mylitta</i>	Mar 2023	Feb 2026	<p>Selection of S09 generation thermo-tolerant lines based on survivability, fecundity and egg hatching percentage after the exposure of cocoons in 46⁰C/4h for 3 days. Analysis of complete cocoon parameters between temperature treated and control lines. Examination of thermal stress tolerance level of male and female moths. Extraction of genomic DNA from randomly selected thermo-tolerant moths for SCAR marker assisted selection. Rearing of S10 generation thermo-tolerant dfls in BSMTTC, Chennur (Telangana); BSMTTC, Bhandara (Maharashtra) and BSMTTC, Pali (Chhattisgarh) along with RSRSs and REC. Exposing of S10 generation V instar larvae at higher temperature. Extraction and purification of total RNA. Validation of selected differentially expressed genes the RT-qPCR.</p>	<p>S09 generation thermo-tolerant lines would be selected. SCAR markers would be utilized for the confirmation of thermo-tolerant lines. Impact of temperature stress on sperm quality would be analysed. Rearing of S09 generation would be completed in BSMTTCs, RSRSs and REC in hotter zones. S10 generation thermo-tolerant lines would be selected. SCAR markers would be utilized for the confirmation of thermo-tolerant lines. Impact of temperature stress on sperm quality would be analysed. Rearing of S10 generation would be completed in BSMTTCs, RSRSs and REC in hotter zones.</p>	23.45
9	AIB 04018	In situ	Mar 2023	Dec 2027	Training/awareness for local people for	Creating awareness to the local people and brainstorming workshop for sensitization.	58.35

	MI	Conservation of Modal Ecorace of Tasar Silkworm in Odisha			<p>conservation.</p> <p>Sensitizing brainstorming workshop by involving State Department of Handloom Textiles and Handicrafts, State Forest Department and Stakeholders.</p> <p>Analysis of Meteorological (Average temperature, humidity, rainfall, photoperiod) and ecological data (geoposition, edaphic, host plants, pests, predators and hydrological data).</p> <p>Genetic and phenotypic characterization of Modal ecorace population.</p> <p>Population dynamics of conserved Modal ecorace population.</p> <p>Collection of wild cocoons (First & second generation) and their preservation</p> <p>Grainage activity in situ in pagodas</p> <p>Release of eggs on host plants through leaf cups.</p> <p>Observations of life cycle stages through litter fall/cocoons.</p>	<p>Analysis of meteorological and ecological data, genetic and phenotypic characterization and population dynamics.</p> <p>Conservation of wild cocoons (First generation Jhanji and Second generation Modal)</p>	
10	AIB 04019 MI	In situ Conservation of Raily Ecorace of Tasar Silkworm in Chhattisgarh	Mar 2023	Dec 2027	<p>Formation of conservation groups.</p> <p>Core zone identification and fortification.</p> <p>Demarcation of buffer and peripheral zone.</p> <p>Orientation training to conservation resource person and conservation persons (local people).</p> <p>Pre-population survey of Railyecorace.</p> <p>Genetic and phenotypic characterization of Railyecorace population.</p>	<p>Core zone identification, pre-population survey, genetic and phenotypic characterization, orientation training to new recruits and sensitizing brainstorming workshop.</p> <p>Conservation of wild cocoons (First generation Chaiti)</p> <p>Conservation of wild cocoons (Second generation Bhado)</p>	65.05

					<p>Sensitizing brainstorming workshop by involving Directorate of Rural Industries (Sericulture Sector), State Forest Department and Stakeholders.</p> <p>Collection of wild cocoons (First and Second generation) and their preservation</p> <p>Grainage activity in situ in pagodas</p> <p>Release of eggs on host plants through leaf cups and releasing of gravid moths.</p> <p>Observations of life cycle stages through litter fall/cocoons</p>		
11	AIB 04020 MI	In situ Conservation of Sarihan Ecorace of Tasar Silkworm in Jharkhand	Mar 2023	Dec 2027	<p>Recruitment of manpower</p> <p>Procurement of equipment, accessories etc.</p> <p>Preparation of data collection charts etc.</p> <p>Orientation training to all scientists & new recruits</p> <p>MoU with State Forest Department for Conservation site.</p> <p>Formation of conservation groups.</p> <p>Core zone identification and fortification.</p> <p>Demarcation of buffer and peripheral zone.</p> <p>Orientation training to conservation resource person and conservation persons (local people).</p> <p>Pre-population survey of Sarihanecorace.</p> <p>Genetic and phenotypic characterization of Sarihanecorace population.</p> <p>Sensitizing brainstorming workshop by involving Directorate of Sericulture, Department of Industry; State Forest Department and Stakeholders.</p> <p>Analysing the present status of ecorace</p>	<p>Manpower recruitment, equipment purchase, orientation training, MoU between state forest department.</p> <p>Core zone identification, pre-population survey, genetic and phenotypic characterization, orientation training to new recruits and sensitizing brainstorming workshop.</p> <p>Conservation of SarihanEcorace (for II crop).</p> <p>Conservation of SarihanEcorace (for III crop).</p>	63.68

					<p>population through assessing the number of cocoons by ground and aerial survey. Collection of wild Sarihan cocoons (for II Crop) and their preservation Grainage activity in situ in pagodas. Erection of nylon net over <i>T. tomentosa</i> and <i>T. arjuna</i> trees inside the forest. Release of eggs on host plants through leaf cups, releasing of gravid moths through Chullu both inside and outside nylon net. Observations of life cycle stages through litter fall/cocoons Collection of wild cocoons (for III crop) and their preservation. Grainage activity in situ in pagodas. Release of eggs on host plants through leaf cups, releasing of gravid moths through Chullu both inside and outside nylon net.</p>		
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Annex- 4.I.2

1.1.2. Projects to be concluded during the year 2023-2024

(Rs. Lakhs)

#	Code	Title	Start	End	Progress output	Utility of out-put/ Impact on silk industry	Budget allocation
At main institute							
1.	CYR 04013 MI	Studies on storage practices of tropical tasar cocoons for better cooking efficiency, reeling parameters and yarn quality	Feb 2022	Jan 2024	The change of single cocoon quality parameters, reeling performance, fibroin and sericin characteristics due to storage (6, 12, 18 & 24 months in net cage and cold storage) of tasar cocoons for Daba, Modal and Raily eco- races.	The reason behind the deterioration of single cocoon quality parameters, reeling performance, fibroin and sericin characteristics due to storage (6, 12, 18 & 24 months) of tasar cocoons for Daba, Modal and Raily eco- races. So, modified storage practice (cold storage) or intermittent hot air drying/stifling or modified softening fortasar cocoons.	8.88

2.	APS 04003 SI	Studies on the reproductive potential of Tasar silkworm <i>Antheraea mylitta</i> with special reference to nutritional and mechanical indices	Mar 2020	Aug 2023	Application of soil nutrition. Rearing of silkworm on host plants Study of efficacy of ovipositional devices Impact of methoprene on fecundity	Enhances of fecundity in tasar silkworm	2.50
3.	MOE 04014 MI	Evaluation and popularization of improved technologies developed in the field of tasar sector for central and north India (On Station/Farm Trials of CTRTI)	Feb 2022	Jan 2024	Softening of cocoons with original colour and luster of tasar. Validation of IPM package for control of gall fly infestation in tasar food plants Observation of qualitative and quantitative improvement in tasar food plant leaf. Identification of suitable chemical trap for control of Ichneumon fly. Validation of IPM package for control of stem borer in tasar food plants. Validation of improved accession 102 and 123 of <i>Terminalia arjuna</i> and <i>Lagerstromia speciosa</i> for tasar silkworm rearing Validation of Egg washing cum dis-infection machine for quality dfl production. Reduction in erratic and delayed emergence after applying light reflector paints Validation of cooking package developed for three eco-races	It will help to increase demand of tasar product with improved organic content and natural colour. It helps to Increases the Raw silk production of the tasar industries. Qualitative and quantitative improvement in tasar food plant leaf will improve the productivity of quality cocoon production. Increases the production of the raw silk production by reducing the crop loss. IPM package developed for control of stem borer will helps to increase the cocoon production (Raw silk). Improved accession will helps to meet out the demand of quality food plant which leads to increase in productivity of tasar cocoon production. Quality dfl production will helps to increase production of tasar cocoon production Increases the productivity of the quality seed production. Production of quality tasar silk yarn	14.50
4.	BPC 04008	Mass level extraction of sericin from tasar	Mar 2021	Feb 2024	Isolation and characterisation of sericin. (Separated from Raily cocoon cooking	Development of sericin purification unit Standardisation of separating protocol for	7.57*

	EF (DBT Funded)	cocoon cooking wastewater for its prospective utilization			water).Study of biological properties of Railysericin.Data analysis and yearly report submission.	isolation of sericin from cocoon cooking waste water and its characterisation	
5.	MOE 04007 EF (DBT funded- Collaborative Project with PRADAN)	Establishment of Biotech-KISAN Hub at Professional Assistance for Development Action (PRADAN), Deoghar, Jharkhand for three Aspirational Districts of Jharkhand (Godda, Dumka and Pakur)	Aug 2021	Jul 2023 (extend ed till Sep 2023)	1. In the project area: Building of capacities in participating families by adopting skills to effectively and profitably engage in Tasar based livelihood activities by promoting selected four activities in Tasar with its partner institutions. Introduction of improved technologies and practices to push the productivity frontiers for accelerated growth	Capacities will build in participating families. Implementation and introduction of 09 improved technologies. Enhancement in productivity and the average income per family. Plantation and maintenance	102.71*
6.	ARE 04006 CN	Management of important pests of tasar silkworm <i>Antheraea mylitta</i> (D) through botanical repellents	Apr 2020	Sep 2023	Estimate ETLs for major tasar silkworm pests viz., Stink bug, reduviid bug and yellow fly Identified botanical extracts (Eucalyptus and Neem) against stink bug and Reduviid bug	Outcome of the project is useful for the decision making about taking up management measures timely based on the ETLs Further identified botanical extracts will be useful for the management of predatory bugs in non-destructive manner Impact on silk industry would be reducing the crop loss due to predators damage to tasar silkworm	3.21

* DBT funded

Annex- 4.I.3

1.1.3. New projects to be initiated during the year 2023 -2024

(Rs. Lakhs)

#	Code	Title	Start	End	Objectives	Expected output	Budget allocation
At main institute							
1.	RAC recommended	Impact of climate change on tasar food plants and silkworm	2023	2026	Region wise assessment of climate change and its effect on tasar culture. Region wise assessment of frequency and intensity of natural disasters and its effect on tasar culture	Region wise data base about climatic parameters and its effect on tasar food plants and silkworm. Region wise data base about natural disaster and its effect on tasar food plants and silkworm.	40.20
2.	RAC recommended	Evaluation of technologies and machines developed in tasar post cocoon technology	2023	2025	To evaluate the feasibility of new technologies developed under different projects (as outcome) in tasar sector. To assess the productivity and performance of reeling and spinning machines available in tasar reeling/spinning units. To popularize the new technologies and machineries.	The reasons for shortcomings of different technologies as well as machineries developed under different projects can be found out for which these are not popular in the reeling/spinning units. So, attempts can be taken to overcome these drawbacks like modifications to the possible extent of new technologies developed, root causes of frequent break down of reeling and spinning machines supplied under different schemes of Central Silk Board, identification of difficulties for procurement of machine parts and service as and when required, communication with manufacturers to overcome the reelers/spinners' difficulties related to machinery problems and popularization of technologies and machines developed under different projects.	27.80

3.	Project uploaded on e-proMIS website of DBT New Delhi (Registration No.: 45338)	Unraveling of genes responsible for productive traits of tasar silkworm <i>Antheraea mylitta</i> using functional genomics approach.	2023	2026	To analyse the differential gene expression and unravel the pathways linked to fecundity and shell weight. To validate the gene responsible for fecundity and shell weight.	<ul style="list-style-type: none"> The outcome of the project will lead to explore the useful information on gene coding regions of <i>A. mylitta</i> with an aim to annotate and use available reference genome sequence for genetic characterization and functional genomic approach. This will be helpful to study the gene expression pattern, induction and regulation of genes related to qualitative and quantitative characters to enhance the productivity of tasar silk. Based on this, the inclusive molecular basis of different economically important traits of <i>A. mylitta</i> can be analyzed. 	62.64*
4.	Project uploaded on e-proMIS website of DBT New Delhi (Registration No.: 45372)	Development of KASP based SNP barcoding system for the molecular identification of tropical Tasar silkworm ecoraces	2023	2025	To perform extensive interspecific SNP screening and designing of KASP probe and primers. To validate the optimized ecorace specific KASP markers with all the available <i>A. mylitta</i> ecoraces from various locations in India.	<p>KASP based SNP barcoding system for the specific identification of various <i>A. mylitta</i> ecoraces.</p> <p>The anticipated product of this proposed project is KASP based SNP barcoding system to discriminate the <i>A. mylitta</i> ecoraces, which would be a significant molecular tool for establishing an efficient in-situ conservation strategy to overcome inter-crossing of ecoraces and the optimized KASP technology would be utilized further for marker-assisted selection (MAS) in systematic breeding programme to enhance the production of tasar.</p>	34.1*
5	Project uploaded on	Inhibition of multiplication of pebrine spores in	2023	2026	To reduce the multiplication of Pebrine infection in tasar culture	Development of package and practices for reduction of pebrine spores	30.19*

	website of DBT (Registration No.: 45331)	tasar silkworm through specific inhibitors					
6	Project uploaded on e-proMIS website of DBT New Delhi (Registration No.: 47097)	Pheromone/kairomone based traps for vanya silkworm pest management	2023	2026	Isolation and characterization of pheromones and kairomones Assessing the electrophysiological and behavioural assay Assessing the efficacy of the semiochemicals under field conditions	Expected outcome would be development of pheromone/kairomone trap to manage the major parasitoids of vanya silkworms. Developed trap can be effectively utilized for the management of uziflies and yellow fly in both tasar and muga culture and it will greatly helps to reduce the crop loss due to these pests.	44.26*
7	RAC recommended with preliminary approval of DBT	Establishment and Characterization of Novel Stable Cell Lines from Tropical Tasar Silkworm, <i>Antheraea mylitta</i>	2023	2026	To establish various primary and continuous cell lines of tropical tasar silkworm. To characterize the established continuous cell lines. To analyse the susceptibility of cell lines to <i>N. mylitta</i> and AmCPV. To analyse the suitability of cell lines for the expression of foreign genes.	Tropical tasar silkworm's continuous immortal cell lines would be established. <i>N. mylitta</i> and AmCPV susceptible cell lines would be established for performing various pathological researches. Established <i>A. mylitta</i> cell line for conducting various heterologous gene expression studies.	130.0
8	RAC recommended	Effect of different plant spacing and pruning heights on chawki leaf productivity of tasar host plants (<i>Terminalia arjuna</i> ,	2023	2026	To study the influence of different plant spacings and pruning heights on foliage quality, quantity and chawki rearing and their economics	Development of suitable/ ideal plant spacing and pruning height combination of tasar host plants for obtaining higher returns/ benefits in chawki rearing of tasar silkworm.	44.00

		<i>T. tomentosa</i> and <i>Lagerstroemia speciosa</i>) and chawki silkworm rearing					
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* DBT funded

1.2. With CI from the Institute (Collaborative projects with other CSB institutes)

Annex- 4.I.4

1.2.1. Ongoing projects during the year 2023 -2024

(Rs. Lakhs)

#	Code	Title	Start	End	Milestones to be crossed	Progress to be achieved	Budget allocation
					nil		

Annex- 4.I.5

1.2.2. Projects to be concluded during the year 2023 -2024

(Rs. Lakhs)

#	Code	Title	Start	End	Progress output	Utility of out-put/ Impact on silk industry	Budget allocation
At main institute							
1	MOE 09001 MI	Test verification of seed preservation technology developed for Tasar silkworm (<i>Antheraea mylitta</i> D)	Jun 2022	Dec 2023	Validation of the Tasar seed preservation technologies developed for Daba eco-race. Rearing performance of preserved Tasar seed at different localities/units	Tasar seed preservation technologies will be validated.	1.25

Annex- 4.I.6

1.2.3. New projects to be initiated during the year 2023 -2024

(Rs. Lakhs)

#	Code	Title	Start	End	Objectives	Expected output	Budget allocation
At main institute							
1		Development of Sericin Topical Formulation for the Treatment of Psoriasis	2023	2026	To prepare sericin based topical formulations and each formulation containing different concentration of sericin To evaluate the efficacy of the sericin formulation on validated psoriasis model and to explore the molecular mechanisms of anti-psoriatic activity To investigate the physicochemical properties, safety analysis and stability study of the formulated cream.	Extraction and characterization of silk sericin from the waste silk will help to understand the variation in sericin property Validation of the efficacy of the topical formulation with the protein sericin using IMQ induced animal model Insights into molecular mechanisms of anti-psoriatic activity exerted by sericin On the basis of the result, a topical formulation with sericin can be developed for the management of psoriasis.	39.15

2. Transfer of Technologies (ToTs) Programmes to be taken up during the year 2023 -2024

Annex - 4.II.1

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

(Rs. Lakhs)

#	Name of the Technology	Unit Cost (Rs.)	At CSB institutes	RSRs	DOS Units	Total	Anticipated impact	Budget allocation
1	Evaluation of cocoonase variant for cocoon softening/degumming and silk surface modification	16000	02	02	02	06	Softening of cocoons with original colour and luster of tasar yarn	0.00*
2	Evaluation of PSB for qualitative and quantitative improvement in tasar food plant leaf.	12000	02	02	04	08	Observation of Qualitative and quantitative improvement in tasar food plant leaf	0.00*
3	Development of Chemical trap for Ichneumon wasp	37000	--	04	01	05	Identification of suitable chemical trap for the control of Ichneumon fly	
4	Establishment and popularization of New Improved accession 102 and 123 of <i>Terminalia arjuna</i> and	10000			11	11	Validation of improved accession 102 and 123 of <i>Terminalia arjuna</i> and <i>Lagerstromia speciosa</i> for tasar	0.00*

	<i>Lagerstromiaspeciosa</i>						silkworm rearing	
5	Evaluation of egg washing and disinfection machine	32300	--	10		10	Validation of egg washing and disinfection machine	0.00*

Annex- 4.II.2**2.2. On Farm Trials (for demonstration of Technologies at farmers' level)**

(Rs. Lakhs)

#	Name of the Technology	Unit Cost (Rs.)	No. of locations	No. of stakeholders	Anticipated impact	Budget allocation
1	Management of abiotic factor using light reflector plants to reduce erratic and delayed emergence	25000	06	06	Reduce erratic and delayed emergence and decrease in temperature of the grainage hall	0*
2	Validation and popularization of cooking package developed for three eco-races	6000	05	75	Validation and popularization of cooking package developed for three eco-races	0*
3	Evaluation of IPM for control of gall fly	5150	11	165	Management of Gall Fly menace	0*
4	Evaluation of IPM for control of stem borer in tasar food plants	20000	10	150	Management of stem borer in tasar food plants	0*
5	Evaluation of Tasar Pupae based Fish feed (RESHMEEN)	25000	04	100	Evaluation of fish feed	1.00

* Part of ToT project MOE 04014 MI

Annex-4. III**3. Capacity Building & Training programmes to be conducted during 2023 -2024**

#	Title of the training programme	Unit cost (Rs)	Target		
			No of programmes	No of stakeholders	Budget proposed (Rs. in lakhs)
3.1	Structured Training Course*				
3.1.1	PGDS	3.00 lakh/ batch	01	20	3.00
3.1.2	Intensive Sericulture Training				
3.2	Farmers Skill Training	0.045/farmer	26	650	29.25
3.3	Exposure visit for technology awareness	0.040/farmer	9	180	7.20
3.4	Technology Orientation Programme	0.038/trainee	04	100	3.80
3.5	Sericulture Resource Centres (SRCs)	--	30	450	2.25*
	Establishment of New SRC	4.00 lakh/SRC	4	--	16.0

3.6	Training under Post Cocoon Sector**				
3.7	Management Development Programme under STEP				
	Competency Enhancement Training Programme (CETP) for Incharge Scientist /administrative staff and Technical staff of institute and its nested units	0.100/tr	01	25	2.5
	Refresher training on technological advancement in sericulture and extension approaches under CEPT programme for STA/FA	0.100/trainee	01	25	2.5
	Hands-on training programme on Statistics for Scientists	0.0615/trainee	01	27	1.66
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*			50	
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		77	1527	68.16

** Name of training with duration, *** only NSQF aligned courses - *An amount of Rs.0.75 Lakhs (Max) can be spent under each existing SRC towards opex. (3x0.75=2.25)

Annex- 4. IV

4. Extension Communication Programmes to be conducted during 2023 -2024

(Rs. In lakhs)

#	Programmes	Unit cost (Rs.)	Target		
			No of programmes	No of stakeholders	Budget allocation
4.1	KrishiMela/ Reelersmela cum exhibition at Institution	3.00	1	300	3.00
	Krishimela at Nested units	1.50	6	1200	9.00
4.2	Farmers Field day	0.10	36	1800	3.60
4.3	Awareness programme	0.05	28	700	1.40
4.4	Technology demonstration / Enlightenment programmes	0.01	50	1000	0.50
4.5	Workshop/ Seminars& Conferences	2.00	03	300	6.00
4.6	Other activities	--	--	--	--
	Total	--	124	5300	23.50

Annex-4.V

5. Soil samples to be tested/analyzed during the year 2023 -2024

#	State	Target	
		Physical (No)	Budget allocation (Rs in Lakhs)
5.1	Jharkhand	200	0.70
5.2	Chhattisgarh		
5.3	Odisha		

Annex-4.VI

6. Information, Education and Communication-2023 -2024

#	Item	Target (No.)	
		Physical (No)	Budget allocation (Rs. In lakhs)
6.1	Periodicals	03	
6.2	Publications		
6.2.1	Research papers-National	10	
6.2.2	Research papers-International	05	
6.2.3	Proceedings/ Abstracts	15	
6.2.4	Books/ Book Chapters/ Manuals etc.	02	
6.2.5	Popular Articles	08	
6.2.6	Booklets, Brochures etc.	02	
6.3	Extension literature	02	
6.4	Films/ Videos	10	
6.5	Social media	250	
Total		307	6.0

Annex-4.VII

7. Technologies to be filed for Patent /grant of patent, technologies to be Commercialized/ Productsto be developed during 2023 -2024

#	Item	Patent No., Date of filing patent by NRDC, Technology commercialised to & Date of licence.	Target	
			Physical (No)	Budget allocation (Rs. In lakhs)
7.1	Patents filed		1	
7.1.1	RESHMEEN GOLD			0.50
7.2	Patents granted		3	
7.2.1	Cordyceps mass production protocol			1.0
7.2.2	Cocoonase			1.0
7.2.3	Sericin purification and concentrating machine			1.0
7.3	Technologies commercialized		1	
7.3.1	RESHMEEN GOLD			5.0
7.4	Android/mobile app, software developed etc.			
7.4.1				

Annex-4.VIII

7. Procurement of equipments and other accessories proposed for the year 2023 -2024

(some of the items which couldn't be procured during 2022-23 for want of fund are also included and will be removed if the same could be purchased during the current year)

#	Items/ equipments/ other accessories	Justification	Target	
			Physical (No)	Budget allocation (Rs in Lakhs)
Equipment Carried Forward from 2022-23 to 2023-24				
Proposal sent to C.O. CSB for final approval				
8.1	Oxford Nanopore sequencer with Flow cells and battery backup.	Oxford Nanopore is a portable high-throughput benchtop sequencer. Long nanopore sequencing reads (up to 4 Mb), provide novel and cost-effective insights into silkworm genomes, transcriptomes, and microbiomes, through the accurate resolution of complex genomic regions, haplotypes, and full-length transcripts. Nanopore sequencing allows the generation of novel insights into transcript isoform expression and usage across different experimental conditions and cells, including single-cell	1 No.	15.0

		analysis in tropical tasar silkworm.		
8.2	Digital Heating Cooling Dry Bath Temp. Range: 4°C to 95°C Type: Dry Bath/Block Display: Digital Temp. Accuracy: 0.55°C at 37°C Temp. Stability: ±0.15 at 37°C Accessories: Block 0.5 ml: 48 places Block 1.5 ml: 30 places Block 15 ml: 15 places Block 50 ml: 6 places	Digital Heating Cooling Dry Bath is required to conduct various molecular experiments in tasar silkworm viz. DNA/RNA extraction, restriction, ligation, transformation, etc.	1 No.	4.0
8.3	Gel Imaging System Field of view: 22.5 x 18.0-cm 9.1 MP cooled CCD camera. Five fluorescence channels. Green LED-based transilluminator. Smart Exposure technology. Includes Imaging Sample Blot, Preinstalled filter sets, Safe Imager Viewing Glasses, White Screen for stained SDS-PAGE gel analysis	Gel Imaging System is very much essential for Chemiluminescent Western Blot Imaging, DNA/RNA Gel Imaging, Fluorescent Western Blot Imaging, Protein Gel Imaging. Multiple image analysis to perform densitometry, quantitation, and normalization directly using the on-instrument software.	1 No.	12.0
8.4	Drone sprayer	Formechanizationofspray/dustingof disinfectants, pesticides/ insecticides/ biocontrolagentsontasarfood plants asper Govt. of IndiaAgriculturePolicy	01	10.00
8.5	Bio shredder	Forshreddingoffarmandotherwaste forfastdegradationand composting	01	10.00
8.6	Farm Mechanization Equipment	FormechanizationoffarmactivitiesinNested Units	NA	20.0
8.7	125 KVA SilentBack up- powergenerator	Toreplacetheexisting180KVA Back-up generatorwhichisold, obsolete, consuming lotoffuelandcausingheavypollution.	01	20.00

8.8	Weather Tracker	Study of micrometeorological parameters in relation to protection & production of tasar cocoons (PPA 04010CN).	31	15.50
8.9	Water purification system	Essential for the preparation of molecular grade buffers and solutions.	01	5.00
		Total		111.50
		Equipment Carried Forward from 2022-23 to 2023-24 (Bidding completed)		
8.10	Workstation with Specification <i>Processor: Intel Xeon Gold</i> <i>Number of cores/processor: 24</i> <i>RAM size: 256 GB</i> <i>RAM Expandable upto: 1024 GB</i> <i>SATA Drive Capacity: 6 TB</i> <i>Graphics Card: 16 GB</i> <i>Display Resolution: 3840 x 2160</i>	Workstation is very much essential to perform various analysis of both genomic and transcriptomic data viz., Genome annotation, linkage mapping, differential gene expression analysis, pathway enrichment, etc. Especially it is very much essential for performing SNP based genetic characterization within and between the ecoraces collected from various states all over India.	1 No.	15.00
8.11	-80°Deep freezer	Total Two working deep freezers are available at the Institute. One is 14 year old and has earlier gone out of order. The other one is 01 year old. Deep freezer available at Institute is full with various samples. For proper storage of various chemicals and genetic resources as well as biological samples is very much needed. Hence one more Deep freezer is required, in case of breakdown of the old deep freezer to preserve the samples safely.	01	10.00
8.12	Automatic Weather Station	To generate the meteorological data for development of Forewarning system	01	7.00
		Equipment Carried Forward from 2022-23 to 2023-24 (Bidding process under progress)		
8.13	Air Entrainment System	To be used for Volatile collection	01	6.00
8.14	Telescopic pole pruner	To prune the tasar host plant branches above 8 – 10 feet.	03	2.00

8.15	Fluorpen with 10 pcs set of detachable leafclips	For recording of fluorescence in response to drought stress (PIB 04009SI).	01	7.00
8.16	Stereo microscope enabled with computer imaging	Species diversity and taxonomical studies of host plants and silkworm pests (ARE 04011 MI)	01	6.00
		Equipment Carried Forward from 2022-23 to 2023-24 (Procurement is under process)		
8.17	Tabletop pH meter	Preparation of chemical solutions for biochemical analysis.	01	0.70
8.18	Battery operated knapsacksprayer	Tospraydisinfectants, pesticides/ insecticides/biocontrolagentsontasarfood plants.	02	0.70
8.19	Farm Mechanization Equipment	Formechanization offarmactivitiesinmain Institute	NA	10.0
8.20	Dry & Wet bulb thermometer	Recording of temperature and relative humidity in grainage (PPA 04010CN)	31	0.50
		Equipment Carried Forward from 2022-23 to 2023-24 (Purchase process not yet initiated)		
8.21	Sonicator	For Celllysis.	01	5.00
8.22	Demineralization water plant	Forremovalofionsfromcococoncooking wastewater.	01	1.50
8.23	Automaticweather tracker(Kestrel)	Torecordandmaintainthemetereological data ofthefarmtomonitor and forewarning the diseaseandpestincidenceintasarfood plants.	01	0.55
8.24	Light traps with Insect collection Chamber	For collection of adults stem borer and other harmful pest of food plants during rainy season (MOE 04014MI).	10	1.0
8.25	Insect Traps	Use as a chemical trap for control of yellow fly (MOE 04014MI).	150	1.10
		Sub-Total		74.05
		(Equipment Carried Forward from 2022-23 to 2023-24) Total		185.55
Equipment's and other accessories proposed for the year 2023 -2024				
8.26	Electroporator with Cuvettes	Electroporator is very much essential for the heterologous transformation of silkworm genes in to bacterial or fungal system.	01 No.	12.00

8.27	Table Top Refrigerated Mini Centrifuge RPM: 16,000	Required to perform DNA/RNA extraction and purification within the PCR workstation to avoid external contamination of nucleases.	01 No.	4.50
8.28	Isoelectric Focussing System with vertical electrophoresis system.	Isoelectric Focussing System is essential for first dimension of silkworm and host plant protein separation in 2D gel electrophoresis.	01 No.	20.0
8.29	Semidry blotter	Semidry blotter is required for the transfer of DNA/RNA/protein to nitrocellulose/ PVDF membrane to confirm the expression of respective gene of interest.	01 No.	8.0
8.30	30kVA online UPS (160 mins Backup)	30kVA online UPS is imperative for the uninterrupted power supply in Central Instrumentation Facility.	01 No.	12.0
8.31	Laboratory Wall Cabinet	Laboratory Wall Cabinet is essential to store the consumables in Central Instrumentation Facility.	01 No.	6.0
8.32	Electrospin	The machine will be used for preparation of composite fibre	01 No.	15.00
8.33	Weighing Balance	Essential to quantify the insecticides and other laboratory chemicals.	01 No.	0.50
8.34	Canopy analysis Software	To acquire and analyse images of tasar food plants canopies.	01 No.	0.50
8.35	Leaf area meter	For describing plant canopy structure	01 No.	15.00
8.36	Muffle Furnace	To change physical properties of samples at very high temperature	01 No.	1.20
8.37	Micro weighing balance with software	Chemical and elemental analysis, emissions testing, and applications involving small quantities of rare, valuable, toxic or potent substances.	01 No.	1.75
8.38	Refrigerator: \geq 400L, Frost free, Convertible, with inverter compressor	Storage of microbiological material, rhizosphere samples, experimental plant tissue samples	01 No.	1.0
8.39	Weighing balance: 200 Kg; digital display, rechargeable, 750 mm X 750 mm platform	For weighing pruned plant samples, cocoons, and other farm material like fertilizers, FYM, etc.	01 No.	0.40

8.40	Laboratory tables: Minimum size: 7 feet X 3 feet, Island type with granite top, sink, tap fittings, below bench cabinets, electrical connections and table top shelf	Laboratory tables of soil science section are completely damaged and require laboratory tables to carry out the laboratory work on urgent basis	03 No.	2.5
8.41	Computer with printer	The currently used computer is old and obsolete. Required for day-to-day activities of the section	02 No.	2.0
8.41	Split AC: 2 Ton, with particle filter and dehumidifier	Newly renovated Microbiology laboratory is to be maintained aseptic, ventilation and temperature maintenance are required in the room.	01 No.	0.7
8.42	Electrospinning machine	For preparation of composite nano fibre	01 No.	15.00
8.43	Light Trap (UV and LED) with Backup System	Very much essential to perform the systematic population survey of Sarihanecorace and both silkworm and host plant pests (AIB 04020 MI).	02 No.	1.50
8.44	Camera with telescopic lens and GPS	Required to capture the photographs of silkworm, moths, cocoons and both silkworm and host plant pests along with its geoposition(AIB 04020 MI).	01 No	1.50
8.45	Drone with high resolution camera and software.	Imperative to perform the population survey of ecoraces by analysing the number of cocoons in trees during leaf shed (AIB 04020 MI).	01 No	20.00
8.46	Double distillation unit	Necessary for the preparation of buffers and samples for genotypic and soil nutrient analysis (AIB 04020 MI).	01 No	3.00
8.47	Iron Cages	Required for storing thermo-tolerant cocoons (AIB 04017 MI).	07 No.	1.40
8.48	Data Logger	Required to document the temperature and humidity (AIB 04017 MI).	14 No.	0.70
8.49	Light Trap (UV and LED) with Backup System	Very much essential to perform the systematic population survey of Railyecorace and both silkworm and host plant pests (AIB	02 No.	1.50

		04018 MI).		
8.50	Camera with telescopic lens and GPS	Required to capture the photographs of silkworm, moths, cocoons and both silkworm and host plant pests along with its geoposition (AIB 04018 MI).	01 No.	1.50
8.51	Maxi Horizontal Electrophoresis System with universal power pack	Imperative for the confirmation of extracted genomic DNA of silkworm for SNP analysis (AIB 04018 MI).	01 No.	3.00
8.52	Automatic thermohygrometer	Essential for recording microclimatic data like temperature, humidity besides rainfall etc. at each camps (AIB 04018 MI).	06 No.	1.80
8.53	Vehicle – Two Wheeler	Imperative for recurrent monitoring of conservation and collection of required metadata from the conservation zone (AIB 04018 MI).	01 No.	1.00
8.54	Light Trap (UV and LED) with Backup System	Very much essential to perform the systematic population survey of Railyecorace and both silkworm and host plant pests (AIB 04019 MI).	02	1.50
8.55	Camera with telescopic lens and GPS	Required to capture the photographs of silkworm, moths, cocoons and both silkworm and host plant pests along with its geoposition(AIB 04019 MI).	01	1.50
8.56	Laboratory refrigerator with power backup	Imperative for storing the temperature sensitive enzymes, buffers and chemicals which are essential for extraction of genomic DNA of silkworm for SNP analysis and other parameters (AIB 04019 MI).	01	2.50
8.57	Automatic thermohygro-meter	Essential for recording microclimatic data like temperature, humidity besides rainfall etc. at each camps (AIB 04019 MI).	06 No.	1.80
8.58	Vehicle – Two Wheeler	Imperative for recurrent monitoring of conservation and collection of required metadata from the conservation zone (AIB 04019 MI).	01 No.	1.00
8.59	Weather Tracker	Essential to analyse the temperature and humidity (AIE 04004 CN).	10 No.	3.00
8.60	Light Traps	Very much essential to perform the systematic survey of silkworm and host plant pests (AIE 04004 CN).	25 No.	2.50

8.61	Insect Storage Cabinet with boxes	Required to preserve the specimens of various insect pest of tasar food plants and silkworm.	01 No.	1.00
8.62	Split AC: 2 Ton, with particle filter and dehumidifier	Newly renovated Entomology laboratory is to be maintained ventilated and temperature maintenance is required in the room for insect culture maintenance..	02 No.	1.5
		Total proposed for 2023-24		171.25
		(Equipment Carried Forward from 2022-23 to 2023-24) Total		185.55
		GRAND TOTAL		356.80

Annex-4.IX

8. Other activities to be carried out during the year 2023 -2024

#	Activity	Justification	Budget allocation (Rs in Lakhs)
9.1	1. Conservation and popularization of local eco-races in situ conditions : 2. Swachh Bharat Programme : 3. Production of vermicompost by each unit : 4. P-4 rearing and grainage and other activities : 5. Oak Tasar preponed rearing, cocoons purchase and other activities : 6. Popularization of viable technologies : 7. Maintenance of Farm/ Plantation: 8. Adoption of farmers : 9. RMB activities:		9.09 3.00 1.00 1.35 4.37 3.28 2.90 0.30 45.00#

Note:# Amount will be utilized under revolving fund of RMB and not booked under Annual Action Plan.

Annex-4.X

10. Revenue Generation during 2023 -2024(Rs. in Lakhs)

#	Source of Revenue Generation	Physical (No.)	Revenue to be generated
10.1	Patent (Technology)		
10.1.1	License Fee collected		0.50
10.1.2	Royalty collected		
10.2	Testing & Analytical charges (Sample)		
10.2.1	Testing of Soil/water/FYM/ Leaf etc		
10.2.2	Quality analysis/ testing of products		
10.2.3	Testing of cocoons/silk yarn/fabric etc.		
10.3	Consultancy (Services)	--	
10.4	Supply/ sale proceeds of cutting / Sapling/ seedling/ chawki worms/ cocoons/ Silk etc.		
10.4.1	Mulberry cutting		
10.4.2	Vanya host plant sapling/ seedling		0.10
10.4.3	Mulberry chawki worms		
10.4.4	Mulberry Seed (DFLs)		
10.4.5	Vanya seed (DFLs)		
10.4.6	Cocoons		2.00
10.4.7	Output from R&D Projects (Silk, fabric etc)		1.00
10.4.8	Others (pl specify)		
	Licence fees of Quarters and Hostel rent		5.00
	Recovery of loans and advance		2.50
	Refund of advance deposits		2.00
	Rent & Hiring Charges/Electricity		4.00
	Sale of miscellaneous		4.00
	Interest/ Penalty		0.40
	Previous year recovery		3.50
	Total		25.00

CTRTI Ranchi

Financial Progress and Proposed Plan for the year 2023 -2024 Financial Approval (Rs. in Lakhs)

Name of the Institute: Central Tasar Research and Training Institute, Ranchi

Sl. No	Activity	Target for 2022-23		Achievement for the year 2022-23		% Utilisati on	Proposals for 2023-24	
		Physic al (No)	Budget Allocation (Rs.in lakhs)	Physical (No)	Budget utilisation (Rs.in lakhs)		Physical (No)	Proposed Budget (Rs.in lakhs)
1	Research & Development							
	A. R&D Projects							
1.1	Ongoing projects during the year (No.)	07	139.13	11	105.32		11	359.11
1.2	Concluded Projects during the year (No.)	05	46.52	01	8.78		06	29.09
1.3	New projects Initiated during the year (No.)	08	879.10	06	0.00		08	242.00
1.4	Any other (Expert consultancy etc) POW/PS (Code 2101)				358.50			
	(Sub Total 1.A)		1064.75	0.00	472.60	44.38	0.00	630.20
B	Seed Organization							
1.1	Parental Seed production and supply							
1.2	Basic seed production and supply							
1.3	Commercial seed production and supply							
1.4	Adopted seed rearers (ASR) & seed cocoon production							
1.5	Registered seed producers (RSP) & Seed production							
1.6	Store stationary -Chemicals, POW, Expert consultancy, Travel, Security, ISO certification etc							
	(Sub Total 1.B)							
2	Transfer of Technologies (ToTs)							
2.1	On Station Trials (OST)							
	No of technologies validated	07	0.0	07	0.0		05	

	No of stakeholders covered	63	0.0	60	0.0		40	
2.2	On Farm Trials							
	No of technologies demonstrated	02	0.0	02	0.0		05	1.00
	No of locations covered	11	0.0	11			37	
	No of stakeholders covered	96		81			496	
	2. Sub- Total		0.0	0.00	0.0		0.00	1.00
3	Capacity Building & Training							
3.1	No of programmes conducted	64		69			77	
3.2	No of stakeholders covered	1401	54.25	1570	35.29		1527	73.72
	3. Sub- Total		54.25	0.00	35.29	62.65	0.00	73.72
4	Extension Communication Programme (ECPs)							
4.1	No of programmes conducted	117		133			121	
4.2	No of stakeholders covered	5300		8208			4900	19.5
	4. Sub- Total		29.40	0.00	24.99	85.00	0.00	19.5
5	Soil testing/disease monitoring							
5.1	No of states covered	03		03			03	
5.2	No of samples analysed/tested	200		200			200	
	5. Sub- Total		0.70		0.70	100	0.00	0.70
6/A	Information, Education and Communication							
6.1	Periodicals	3		03	2.89		3	
6.2	Publications + Library)	37		102	5.83		27	
6.3	Extension literature	4		10	0.98		4	
6.4	Films/ Videos	10		11			10	
6.5	Social media	200		375			250	
	6A. Sub- Total		6.5		9.70	149.23		6.0
6/B	IT Initiative							
6.1	Computer & printer, Internet EPABX,LAN		8		10.3		8	
6.2	Computer aided app. /Mobile app. Development/ etc		2		0.0		2	

6.3	Other (Website development/ upgrading/ maintenance/ sending messages etc		4.5		0.7		2.5	
6.4	Any other		4		6.35		4	
	6B. Sub- Total		18.50		17.35	93.78	16.50	15.00
7	Patent filed/granted and Technology commercialized							
6.1	Patent filed	3		3			1	0.5
6.2	Patent granted	0		0			3	3.0
6.3	Technology commercialized	1		1			1	5.0
	7. Sub- Total		13.0		3.57	27.47	0.00	5.5
8	Capital requirement							
8.1	Maintenance of Existing infrastructure/ Asset		134.19		104.80			100.0
8.2	Asset Creation /Procurement of equipments and other accessories							
8.2.1	Asset Creation / Instrument purchase		278.15		94.00			356.80
8.2.2								
8.2.5	Any Other item under asset creation like Vehicle, Mini tractor etc.		20		0.00			20.00
	8. Sub-Total		432.34		198.80	45.98	0.00	476.80
9	Other activities (pl specify)							
9.1	Quality control – ISO certification							
10	Revenue generation (Rs. In lakhs)		25.00		22.92	91.6		25.00
	10. Sub-Total							
	GRAND TOTAL		1644.44	0.00	785.92	47.71	0.00	1253.42

Note: Please do not delete or add rows or columns.