

Annual Action Plan 2018-19 (Revised)

Physical Target for the year 2018-19



**Central Muga Eri Research & Training Institute
Lahdoigarh, Jorhat, Assam**

Physical target for the year 2018-19 of CMER&TI Ladoigarh

1. Organisational set up- Nested units

Unit	Place
RSRS/RSRS/RTRS	RSRS at Boko; RSRS at Mendipathar and Shadnagar
REC	Lakhimpur, Fatehpur, Coochbehar, Tura, Kokrajhar

2. Research & Development:

A. R&D Projects (Total budget Rs. 110.05 lakhs)	Target	Remarks
1.1 Projects of earlier year continued through the year 2018-19	18	Annex 2.I
1.2 Projects to be concluded during the year 2018-19	6	Annex 2.II
1.3 New Projects to be initiated during 2018-19	5	Annex 2.III
B. Transfer of Technology (ToT)		Annex 2. IV
B4. ECPs (as per following details) 110		
2.1. Krishi Mela	3	
2.2. Field day	18	
2.3. Farmers day	18	
2.4. Awareness programme	33	
2.5. Group discussion /Vichar Gosthi	37	
B5. Workshop / Seminar	2	
B6. Technology Demonstration	11	
B9. SMV	10	
B10. Any other	50000 messages	
C. HRD/Training		Annex 2.V
C1. CBT	2100 (trainees)	
C4. Seed act Training/awareness programme	100	
C5. Any other training (Seed act, PCT, STEP & others)	230	
C8. SRCs/SRC Training	10 SRCs	
D. ICE		Annex 2.VI
D1. Publications/Crouchures	13	
D2. Periodicals	8	
D3. TV Programme/Radio Programme	5	
D5. Video film	2	
E. Seri Model Village Programme /IVLP (2018-19)		Annex 2. VII
F. Other Activities		Annex 2. VIII
G. Procurement of Equipment and other accessories		Annex 2. IX
H. Revenue Generation target for the year 2018-19		Annex 2.X
I. Media and Communication Programmes		Annex 2.XI

Annex 2.I

2.A.1. Projects of earlier year to be continued during 2018-19 (Total budget approved Rs. 47.85 lakhs)

Sl. No	Code	Title	Start	Closure	Milestone to be crossed				Financial target (Rs. In lakhs)
					I Qtr	II Qtr	III Qtr	IV QTR	
At main institute									
1	APR 5877	Role of hormesis in mitigating oxidative stress and its impact on growth and yield of Muga silkworm, <i>Antheraea assamensis</i> Helfer	Sept., 2016	Aug., 2019	Heat treatment in different developmental stages of muga and analysis of its effect on growth and yield of muga silkworm in six seasonal crops	Heat treatment in different developmental stages of muga and analysis of its effect on growth and yield of muga silkworm in six seasonal crops	Understanding the levels of Oxidative stress and antioxidants in muga silkworm along with hormesis and disease occurrence in six seasonal crops	Statistical analysis of data, Correlation and interpretation of data	Non-recurr.=1.15 Consum. =1.00 Miscellaneous/ cont. =0.50 Travel =0.25 Total = 2.90
2	ARP 5878	Next generation sequencing studies and bioinformatics analysis of microbiome of flacherie infected <i>Antheraea assamensis</i> Helfer for developing effective disease control measures	Sept., 2016	August, 2019	Bioinformatics analysis of Next generation sequencing data of bacterial community retrieved Muga silkworm insect gut	Establishment of path biome associated with flacherie disease in Muga silkworm	Real-time quantitative PCR (RT-PCR)analysis for gene expression studies of pathogenic bacteria associated with flacherie disease	Field trials of newly developed disinfectant for efficacy analysis. Pathogenic bacterial growth curve analysis with newly developed formulation for controlling flacherie disease	Fellowship= Nil Wages = Nil Travel = 0.30 Cont. = 7.25 Other = 0.80 Total = 9.35

3	PPA 5879	Assessment of phytochemical diversity in Som (<i>Persea bombycina</i> Kost), the primary host plant of <i>Antheraea assamensis</i> Helfer from Northeast India	Sept., 2016	Aug., 2019	Collection of leaf (<i>P. bombycina</i>) samples from study locations and recording of morphological/ meteorological data	Morphological data sheet / descriptor preparation	Quantitative analysis of phytochemicals constituents	Statistical analysis of data, Correlation and interpretation of data	Manpower=1.60 Consumable=1.00 Miscellaneous/ Contingency =5.50 Travel=0.50 Total = 8.60
4	PRP 5880	Characterization and efficacy of bacterial antagonists against <i>Alternaria ricini</i> infecting Castor in North-eastern India	Sept., 2016	Aug. 2019	Molecular characterization of bacterial antagonists	Molecular characterization of bacterial antagonists	Molecular characterization of bacterial antagonists	Mass multiplication and Development of bio-formulation for the control of <i>Alternaria ricini</i> .	Contingency= 0.50 Consumable= 2.00 Travel = 0.25 Total: 2.75
5	APS 5881	Development of suitable incubation device of Eri silkworm to overcome hatching problem during summer	Sept., 2016	Aug., 2019	Incubation of eri eggs in different incubation devices	Bioassay of incubated eggs	Recording of incubation data in Autumn season with existing practices	Incubation of eri eggs in different incubation devices at farmers level	Wages =0.48 Transport =0.60 Contingency & others =0.40 Equipment =1.16 Total=2.64
6	AIT 5885	Development of microbial biocatalyst by heterologous	July 2016	June 2019	Gibbs assay for analysis of bio desulfurization	Bacterial plasmid DNA extractions and gene	Bacterial plasmid DNA extractions and gene	Heterologous expression studies of	Fellowship = 3.3 Transport &= 0.30 Travels Conting. = 4.48

		expression of <i>hpaC</i> & <i>soxABC</i> gene cluster in biosurfactant producing bacterium for effective desulfurization of dibenzothiophene			potential of the bacterial isolates	manipulation studies with gene specific PCR	manipulation studies with gene specific PCR	“SOX abc” gene for biodesulfurization of dibenzothiophene	Other = 0.50 Total = 8.58 Funded by DST, New Delhi
7	PPS 5884	Soil health cards for sericulture farmers of Assam, Meghalaya, Manipur, Mizoram, Nagaland, Arunachal Pradesh and Sikkim-CSB funding.	Sept. 2016	Aug. 2019	Collection of 200 Soil samples, analysis of nutrient status, fertilizer recommendation and development of Soil Health card covering different states	Collection of 200 Soil samples, analysis of nutrient status, fertilizer recommendation and development of Soil Health card covering different states	Collection of 200 Soil samples, analysis of nutrient status, fertilizer recommendation and development of Soil Health card covering different states	Collection of 200 Soil samples, analysis of nutrient status, fertilizer recommendation and development of Soil Health card covering different states.	JRF Salary=1.584 Equip.= 10.5 Consumables & others= 5.0 Travel=2.0 Conting.= 0.05 Total=19.134
8	APR 5890	Biodiversity assessment of wild silkmoths & rearing potentialities of muga (<i>A. assamensis</i> Helfer) and eri	Feb., 2017	Jan., 2020	Survey of naturally available food plants and selection of most desired food plants, propagation and establishment of	Survey of naturally available food plants and selection of most desired food plants, propagation and establishment of	Survey of naturally available food plants and selection of most desired food plants, propagation and	Chemo assay and Bioassay of muga cocoons	5.05 Lakhs Funded by DBT, New Delhi

		silkworm (<i>S. ricini</i> Donovan) for sustainable development in Nagaland			silk farm	silk farm	establishment of silk farm		
9	ARP 5887	Isolation and characterization of lytic bacteriophages infecting bacterial pathogens of Muga silkworm <i>Antheraea assamensis</i> Helfer.	April, 2017	March, 2020	Purchase of equipments Sample collection and screening of phages if any from the samples Purification of phages	Sample collection and screening of phages if any from the samples Purification of phages	Sample collection and screening of phages if any from the samples Purification of phages	Phage titre analysis and isolation of phage DNA and sequencing of the selected phages	Fellowship = 3.30 Contingency= 1.00 Consumable= 2.00 Nonrecurring=9.90 Overhead =1.00 Total: 17.20 Funded by DST, New Delhi
10	ARP 5889	Studies on the cross transmission of pebrine spores from lepidopteran caterpillars to Muga silkworm (<i>Antheraea assamensis</i> Helfer) and its control measures	June 2017-	May 2020	Isolation of Pebrine spores from Saturniid larvae and other important caterpillars frequently available in Muga ecosystem. This will be continued throughout the	Virulent test of spores isolated from Saturniid larvae and other important caterpillars.	Morphometrics of spores using TEM /SEM.	DNA sequencing.	Equipment=1.50 JRF Salary=1.584 Consumables=3.00 Travel=0.50 Contingency=0.30 Overhead=0.50 Total: 7.384

					different crop season from different locations.				
11	APS-3612	Development of Seed Preservation Technology for Muga Silkworm <i>Antheraea assamensis</i> Helper (In collaboration with SSTL, Kodathi)	June, 2017	May, 2019	Screening and identification of suitable and sensitive embryonic stage for seed preservation- single step screening of embryonic developmental stages and identification of suitable and sensitive stages by using single step method	Screening and identification of suitable and sensitive embryonic stage for seed preservation- Double step Preservation of selected suitable embryos/eggs at various schedules by using double step refrigeration technology	Bioassay studies for the evaluation of preserved seed in various schedules Bioassay of preserved eggs in field level at CMER&TI, Lahdoigarh	Compilation and analysis of results. Yearly reports submission	Cont.= 0.25 Travel = 0.50 Chemical and others = 0.15 Stat. = 0.15 Total = 1.05
12	AIB 5894	<i>In-situ</i> conservation of muga and other wild silk moths in Natural Habitat	July, 2017	June, 2019	Moth, egg and larva release Flora and fauna (host plants of muga silkworm and other silk moth diversity) study of selected site Characterization	Moth, egg and larva release Flora and fauna (host plants of muga silkworm and other silk moth diversity) study of selected site Characterization	Flora and fauna (host plants of muga silkworm and other silk moth diversity) study of selected site Characterization and development of database of host	Flora and fauna (host plants of muga silkworm and other silk moth diversity) study of selected site Characterizati	Microclimatic laboratory = 24.0 Portable Generator = 0.50 Travel = 2.00 Consumable = 1.0 Contingencies = 1.0 Website logo ad publication = 0.50

				<p>and development of database of host plants of muga silkworm and other silk moth species available at conservation site</p> <p>Population dynamics of mgua food plants and muga silkworms</p> <p>Regular monitoring of muga population</p> <p>Awareness generation among community and involving them in conservation process</p> <p>Collect month wise meteorological data of the site</p> <p>Disseminating information on muga: publishing field</p>	<p>and development of database of host plants of muga silkworm and other silk moth species available at conservation site</p> <p>Population dynamics of mgua food plants and muga silkworms</p> <p>Regular monitoring of muga population</p> <p>Awareness generation among community and involving them in conservation process</p> <p>Collect month wise meteorological data of the site</p> <p>Disseminating information on muga: publishing field guide, posters, newsletters, and</p>	<p>plants of muga silkworm and other silk moth species available at conservation site</p> <p>Population dynamics of mgua food plants and muga silkworms</p> <p>Regular monitoring of muga population</p> <p>Awareness generation among community and involving them in conservation process</p> <p>Collect month wise meteorological data of the site</p> <p>Disseminating information on muga: publishing field guide, posters,</p>	<p>on and development of database of host plants of muga silkworm and other silk moth species available at conservation site</p> <p>Population dynamics of mgua food plants and muga silkworms</p> <p>Regular monitoring of muga population</p> <p>Awareness generation among community and involving them in conservation process</p> <p>Collect month wise meteorological data of the</p>	<p>Total = 29.0 lakh</p> <p>Funded by NERTPS</p>
--	--	--	--	--	---	--	---	---

					guide, posters, newsletters, and website <i>Ex-situ</i> conservation of muga genetic resources Utilization of muga genetic resources for breeding and seed production	website <i>Ex-situ</i> conservation of muga genetic resources Utilization of muga genetic resources for breeding and seed production Midterm evaluation meeting	newsletters, and website <i>Ex-situ</i> conservation of muga genetic resources Utilization of muga genetic resources for breeding and seed production	site Disseminating information on muga: publishing field guide, posters, newsletters, and website <i>Ex-situ</i> conservation of muga genetic resources Utilization of muga genetic resources for breeding and seed production Midterm evaluation meetin	
13	ARE 5891	Development of LED traps for controlling major insect pests and predators in muga ecosystem – Needs for organic muga	July, 2017	June, 2019	Testing in the laboratory under cages for visualizing the cages (for monitoring the insect population attracting to the each trap with	Testing in the laboratory under cages for visualizing the cages (for monitoring the insect population attracting to the each trap with different	Testing in the laboratory under cages for visualizing the cages (for monitoring the insect population attracting to the each trap with	Testing in the laboratory under cages for visualizing the cages (for monitoring the insect population attracting to the each trap	JRF = 3.30 Travel = 0.50 Consumable= 0.80 Demo= 0.25 Contingencies= 0.1455 Overhead = 0.485 Total = 5.4805

		silk production			different combinations) Data analysis for each trap installed at laboratory under cages and farms Demonstration among farmers	combinations) Data analysis for each trap installed at laboratory under cages and farms Field trial at selected locations of all the developed LED traps Data analysis of field trial Demonstration among farmers	different combinations) Data analysis for each trap installed at laboratory under cages and farms. Field trial at selected locations of all the developed LED traps Data analysis of field trial Demonstration among farmers	with different combinations) Data analysis for each trap installed at laboratory under cages and farms Field trial at selected locations of all the developed LED traps Data analysis	Funded by DST, New Delhi
14	APR 5892	Formulation of Semi-synthetic diet for rearing Muga silkworm, <i>Antheraea assamensis</i> Helfer”-CSB funded	Oct., 2017	Sept., 2019	Procurement of equipments and chemicals, wares, etc. Collection of Som and Soalu leaves different seasons.	Formulation of semi-synthetic diets along with Som and Soalu leaf powder.	Rearing of muga larvae on semi-synthetic diet as per the rearing schedule crops of the year.	Screening of semi-synthetic diet ingredient combinations after testing to the newly hatched	JRFSalary=1.58 Equip. := 5.26 Transport =0.50 Consum.=2.10 Conting. = 0.50 Total = 9.94 lakh
15	PPF 5893	Impact assessment of petroleum	Oct., 2017	Sept., 2019	To generate baseline data on effect of crude oil pollution on	To generate baseline data on effect of crude oil pollution on	To generate baseline data on effect of crude oil pollution on	Determination of nature of crude oil in soil and plant	A. Non-recurring (Cost of RDS)]: = 5.00

		crude oil on muga silkworm and their host plants in Assam-CSB funded			production/yield of Muga silkworm of Muga rearing field and their documentation.	production/yield of Muga silkworm of Muga rearing field and their documentation	production/yield of Muga silkworm of Muga rearing field and their documentation	in Muga rearing field	B. Recurring B1. Manpower = 0.96 B2. Consumables = 1.00 B3. Travel: 2.00 B4. Misc./conting.: 0.50 Total : 9.46 lakh
16	APR 5882	Validation of Indigenous Technical Knowledge (ITK) associated in muga silkworm seed production	Sept., 2016	Aug., 2019	Validation of individual ITKs through conducting grainage and rearing	Validation of individual ITKs through conducting grainage and rearing Evaluation of crop performance of ITK integrated with the existing recommended package of practices	Evaluation of crop performance of ITK integrated with the existing recommended package of practices	Assessment on the cocoon production of ITK hybridized modern technologies as against the recommend modern technologies at farmers field Preparation of final report and develop new package of practices for muga culture	Wages =1.00 Travels=0.50 Conting.=0.50 Other= 2.50 Total=4.50 lakh
17	APR 5886	Improvement of Muga	Dec. 2016	Nov. 2019	Rearing of 75 muga dfls during	Rearing of 75 muga dfls 1 st	-	-	Fellowship=NA Wages=NA

		Cocoon yield through technology intervention and refinement of crop schedule in Terai region of W.B. -CSB funding.			5 th May (\pm 1day) 2 nd Brushing w.e.f 10 th May (\pm 1day) & 3 rd Brushing w.e.f 15 th May (\pm 1day).	Brushing w.e.f 2 nd August (\pm 1day) ii) 2 nd Brushing w.e.f 12 th August (\pm 1day) and iii) 3 rd Brushing w.e.f 22 nd August (\pm 1day)			Transport &Travels =0.50 Contingency=0.25 Other=0.75 Total=1.50
18	AIP-5895	Biology, population dynamics and control of <i>Sycanus collaris</i> Fabricius and <i>Eocanthecona furcellata</i> Wolff (Insecta:Heteroptera) - potential predators of muga silkworm	-	-	Study of biology, seasonal occurrence and population dynamics of important predators of Muga silkworm, i.e. <i>Sycanus collaris</i> Fab. and <i>Eocanthecona furcellata</i> Wolff Development of ecofriendly control measures against <i>S. collaris</i> Fab. and <i>E. furcellata</i> Wolff using IPM techniques such	This study will enable to understand the life cycle, biology and population dynamic of the predator bugs, <i>S. collaris</i> and <i>E. furcellata</i> ; also damage caused in Muga silkworm rearing. Further, finding of control measures against these insect predators will be determined, which will help to reduce damage caused by the predators during larval stage of Muga in the		Biology, population dynamics and control of <i>Sycanus collaris</i> Fabricius and <i>Eocanthecona furcellata</i> Wolff (Insecta:Heteroptera) - potential predators of muga silkworm	Equipment=1.50 Consumables=2.00 Travel=1.50 Contingency=1.00 Total: 6.00

					pheromonal, mechanical and light traps etc.	rearing fields.			
Reg. programme	Forecasting and forewarning for pest and diseases of muga host plants and silkworm (CSB)	Continuous	Continuous	Survey and Collection of Data at monthly intervals and updating the forewarning calendar for diseases and pest	Survey and Collection of Data at monthly intervals and updating the forewarning calendar for diseases and pest	Identify the disease occurrence in advance & forewarn the beneficiaries with remedial measures through awareness programme	Identify the disease occurrence in advance & forewarn the beneficiaries with remedial measures through awareness programme	Transport =4.00 Consum.=1.00 Conting. = 1.00 Total=6.00 Lakh	
Pilot study	Effect of liquid organic manures on quantitative & qualitative parameters of castor (<i>Ricinus communis</i> Linn.) leaves towards sustainable Eri cocoon production	April, 2018	June, 2018	Comparative study of T 14: Beejamrutham + Jeemamrutha + Panchagavya (seed treatment + 4 splits both for soil & foliar application at 30,60,90 & 120 DAS) and T11 = Jeemamrutha + New mixture (4 splits both for soil & foliar application at 30,60,90 & 120 DAS) on eri	-	-	-	Total = 0.10 lakh	

				silkworm rearing and performance.				
--	--	--	--	-----------------------------------	--	--	--	--

Annex- 2. II

2.1.2 Projects to be concluded during 2018 – 19 (Total budget approved Rs. 27.20 lakhs)

Sl. No	Code	Title	Start	Closure	Milestone to be crossed				Financial budget (Rs. In lakhs)
					I Qtr	II Qtr	III Qtr	IV QTR	
At main institute									
1	ARP 5888	Standardization & Popularization of Treated Bamboo Products in Ericulture (Collaboration with Rain Forest Research Institute, ICFRE, Jorhat and NABARD, Jorhat)-CSB funding	April, 2017	March, 2019	Skill Develop. Training for entrepreneurs (1 batch for 30 persons) Preparation of other Appliances (Chaloni, moth cage, Khorika etc.). Demonstration Cum Awareness Programme	Demonstration cum Awareness Programme. Preparation of other Appliances (Chaloni, moth cage, Khorika etc.)	Collection of data, feedback and impact analysis.	Data Analysis and Preparation of final report	RFRI = 3.05 Appliances=1.00 Skill Development Training = 1.25 Consumable=0.30 Travel=0.30 Contingency =0.20 CMER&TI = 6.76 Collapsible mountage=5.00 Consumable=0.10 Demonstration cum awareness programme = 0.20 Travel=0.30 Contingency =0.20 Manpower= 0.96 Grand Total=9.81

2	AIT 5876	Establishment of Institutional Biotech Hub (DBT funded project)	Nov., 2011	March 2019	Organization of workshop cum training programme at the institute for college/university students Continuation of regular research activities of the section as per plan and programme. Purchase of equipments	Organization of outreach awareness programme at the institute for college/university students Continuation of regular research activities of the section as per plan and programme Purchase of equipments	Publication of the 3 rd issue of the BioQuest News Letter. Continuation of regular research activities of the section as per plan and programme. Purchase of equipments	Organization of awareness programme at the institute for college/university students. Continuation of regular research activities of the section as per plan and programme. Purchase of equipments	Fellowship =12.0 Conting.=1.00 Consumable=4.00 Workshop /training =2.00 Non-recurr. =20.0 Total: 39.0 Funded by DST, New Delhi
3	MOE 5873	Enhancement of rural economy through technology intervention for sustainable muga culture in Upper Brahmaputra Valley of Assam (funded by DBT)	April, 2016	March, 2019	Conduction of Training & Demonstration and Awareness	Rearing of Muga silkworm	Preparation of final report	Preparation of final report	Wages = 4.032 Consum.=3.00 Transport =0.50 Contingency & others =2.5 Overhead=0.35 Total=10.382 Funded by DBT, New Delhi
4	AIT 5872	Whole Genome Sequencing and functional genomics of	Nov., 2015	Oct., 2018	Collection of individual tissues from infected and	Collection of individual tissues from infected and	Assembly of RNA sequences and functional annotation;	Assembly of RNA sequences and	Manpower= 1.50 Travel= 1.00 Consumable=1.60 Contingency=1.00

		Golden Silk Moth <i>Antheraea assamensis</i>			control larvae, extraction of RNA and RNA sequencing	control larvae, extraction of RNA and RNA sequencing	Quantitative Expression and validation by Real Time PCR	functional annotation; Quantitative Expression and validation by Real Time PCR	Total=5.10 Lakh
5	MOE-5875	Effect of plant protection formulations on the growth, development and productivity of Muga Silkworm, <i>Antheraea assamensis</i> Helfer (Saturniidae: Lepidoptera).	April, 2016	March, 2019	Physiological and biochemical changes that occur due to application of the pesticides will be recorded. Level of different biochemical components and enzyme activities between treated and non-treated silkworms will be estimated to confirm or support the detrimental effects of the pesticides on	Physiological and biochemical changes that occur due to application of the pesticides will be recorded. Level of different biochemical components and enzyme activities between treated and non-treated silkworms will be estimated to confirm or support the detrimental effects of the pesticides on	Physiological and biochemical changes that occur due to application of the pesticides will be recorded. Level of different biochemical components and enzyme activities between treated and non-treated silkworms will be estimated to confirm or support the detrimental	Ways and means to reduce the effect of pesticides will be worked out which may include identification of suitable plant species to act as physical barriers around the rearing fields; identification of chemical substances to act as antagonists to the pesticides	Manpower= 1.50 Travel= 1.00 Consumable & Contingency=1.00 Total=3.50 Lakh

					the silkworms' health. Protein and DNA profiling will also be carried out to observe the response of the silkworm towards the insecticides or pesticides	the silkworms' health. Protein and DNA profiling will also be carried out to observe the response of the silkworm towards the insecticides or pesticides	effects of the pesticides on the silkworms' health. Protein and DNA profiling will also be carried out to observe the response of the silkworm towards the insecticides or pesticides	and application of which may reduce or recover the toxic effects; identification of less toxic pesticides etc.	
6	ARP 5874	Development of Decision Support System for early warning of selected muga silkworm diseases & pests with geospatial technique	April, 2016	March, 2019	Collection of Disease incidences data from khowang, Kolasib & Nangpoh) Collection of Weather parameters data. Training for the Farmers Rearing of <i>Chatua</i> crop.	Analysis of Collected data. Collection of Disease incidences data as well as Weather parameters. Rearing of Seasonal crop.	Data analysis. Data Collection. Crop rearing.	Data analysis & preparation of final report.	CMER&TI = 3.58 Manpower= 1.58 Travel= 0.60 Stationery= 0.50 Field Survey& Documentation=0.50 NESAC = 2.72 Satellite data= 0.50 Consumable/Stationery= 0.40 Travel= 0.50 Manpower= 1.32 Grand Total = 6.30

Pilot study								
Pilot study	Effect of liquid organic manures on quantitative & qualitative parameters of castor (<i>Ricinus communis</i> Linn.) leaves towards sustainable Eri cocoon production	April, 2018	June, 2018	Comparative study of T 14: Beejamrutham + Jeemamrutha + Panchagavya (seed treatment + 4 splits both for soil & foliar application at 30,60,90 & 120 DAS) and T11 = Jeemamrutha + New mixture (4 splits both for soil & foliar application at 30,60,90 & 120 DAS) on eri silkworm rearing and performance.	-	-	-	Total = 0.10 lakh
At nested units								
Nil								

Annex- 2.III

2.1.3. New projects to be initiated during 2018-19 (Total budget approved Rs. 35.00 lakhs)

Sl. No.	Code	Title	Start	Closure	Objectives	Expected outcome	Budget (Rs. In lakhs)
Main Institute							

1	-	Studies on application of biocompatible silver nano-particle on the growth, development and fibre property of muga silk (in collaboration with AAU, Jorhat)	-	-	Antimicrobial assay of biogenic silver nanoparticles. Observation on feeding behavior of larvae Determination of Fibroin content. Toxicity assessment of silver nanoparticles	To assess the possibility of using Silver nano particles against silk worm diseases, fibroin synthesis and proteomic level of <i>A. assamensis</i>	CMER&TI Total Salaries/wages = 2.54 Consumable=2.0 Travel= 1.0 Conting. = 1.0 Equipment=2.0 AAU Total Salaries/wages = 2.54 Consumable=2.0 Travel= 1.0 Conting. = 1.0 Grand Total = 15.08
2	-	Large scale Pre and Post authorization trial of high yielding Muga silkworm breeds, CMR1 and CMR2	-	-	Authorization trials of improved breeds of Muga silkworm CMR-1 & CMR-2	Popularization of high yielding breeds at Govt. and farmers' level to enhance production and productivity of Muga silkworm	Equip./Acc. = 5.25 Man power = 3.70 Consumables = 7.0 Travel=2.0 Contingency=2.0 Total = 19.95
3	-	Development of technology for enhancing egg laying in Vanya Silk moths by application of host plant volatiles	-	-	To study the performance of natural volatiles available in the respective food plants of Vanya host plants and its chemical analysis. To standardise the synthetic oviposition stimulant blends for Vanya silk moths to enhance the egg production. To evaluate the above volatile blends in enhancing the egg production. Bioassay studies to confirm	Developed technology will be directly involved in increasing the egg production and will be adopted by the Silkworm Seed production units of Vanya seed sector in North and North-Eastern states of India to support Vanya silkworm seed sector and the overall Vanya silk production in the country	Equipment: 15.015 L Manpower: 10.483 L Consumables: 10.0 L Travel: 3.50 L Contingency: 2.5 L Overhead: 6.86 L Total: 48.36

					the enhancement of egg production between control and treatments.		
4	-	Mapping the microbiome of Muga silkworm host plant Som (<i>Persea bombycina</i> K.) across region and season	-	-	Collection and identification of microbial resources from <i>Persea bombycina</i> host plant across North-eastern agroclimatic zones and cropping season. Analyze the variation in Muga host plant microbiome composition with respect to region and season. Characterization of the microbial resources for growth promotion, nutrient use efficiency, antibiosis to develop microbial recommendation package for enhanced silkworm performance.	To obtain plant and insect beneficial microbial cultures from Muga ecosystem by exploring different Muga growing region. To develop a microbial fortification system for Som plants by gathering region and season based information on microbiome variation and functionality that will be used as a need based recommendation package for improving the plant health and silkworm rearing capacities. Develop knowledgebase on the impact of changing environment on the Som plant associated microflora and its outcome on silkworm rearing capacities. High quality publications.	Total: 30.00
5	-	Lactic acid bacteria (LAB) as direct-fed microbials (DFM) for	-	-	Characterization of LABs suitable to be utilized for DFM preparation.	The following project on Lactic acid bacteria based direct fed microbial	Total: 20.00

		management of bacterial diseases in Muga silkworm, <i>Antheraea assamensis</i> Helfer		<p>Rearing and introduction of LAB-DFM into the silkworm host for colonization potential.</p> <p>Assessing the impact of LAB-DFM on silkworm host physiology, immune response and rearing performance.</p>	<p>preparation aims to experimentally select combination of potential lactic acid bacteria with promising nutrient enhancing and disease managing capability to tackle problems of microbial mediated pathogenesis in Muga silkworm.</p> <p>The outcome will be important in developing potential microbial based nutrient regime for introduction into rearing fields to overcome failure during mass rearing.</p> <p>A commercial patentable product can be developed with the finding of the study.</p> <p>It will lead to quality publications in Muga insect nutrition in immunology.</p> <p>The study will also open up future directions to understand behavior of silkworm towards different foliage metabololites or in evaluating the compositions of semi-</p>	
--	--	---	--	--	---	--

Farmer days (@ Rs.0.10/event) =18															
CMER&TI, Lahdoigarh			1			2		1	1				5	350	0.50
RSRS, Boko				1					1				2	140	0.20
RSRS, Mendipathar			1				1						2	140	0.20
REC, Tura			1				1						2	140	0.10
REC,Coochbehar									1				1	70	0.20
REC, Lakhimpur			1					1					2	140	0.20
REC, Fatehpur			1				1						2	140	0.20
REC, Kokrajhar				1					1				2	140	0.20
Total			5	2		2	3	2	4				18	1260	1.80
Awareness programmes (@ Rs.0.10/event) =33															
CMER&TI, Lahdoigarh			1		1	3	2	2	3	3			15	1050	1.50
RSRS, Boko			1	1	1		1						4	280	0.40
RSRS, Mendipathar			1					1	1				3	210	0.30
REC, Tura						1	1						2	140	0.20
REC,Coochbehar							1		1				2	140	0.20
REC, Lakhimpur			1	1					1				3	210	0.30
REC, Fatehpur			1					1					2	140	0.20
REC, Kokrajhar			1				1						2	140	0.20
Total			6	2	2	4	6	4	6	3			33	2310	3.30
Vichar Gosthi/ Group discussion (@ Rs.0.01/event)=37															
CMER&TI, Lahdoigarh			2	1		2		2	1	1			9	180	0.09
RSRS, Boko			2			2		2	1				7	140	0.07
RSRS, Mendipathar			1		2		1		1				5	100	0.05
REC, Tura			1				1						2	40	0.02
REC,Coochbehar			1	1		1			1				4	80	0.04
REC, Lakhimpur			1		2		1	1	1				6	120	0.06
REC, Fatehpur			1					1					2	40	0.02
REC, Kokrajhar			1				1						2	40	0.02
Total			10	2	4	5	4	6	5	1			37	740	0.37
Technology demonstrations (@ Rs.3000/event)=11															
CMER&TI, Lahdoigarh			1					1	2				4	100	0.12
RSRS, Boko								1					1	25	0.03

RSRS, Mendipathar						1					1	25	0.03
REC, Tura						1					1	25	0.03
REC, Coochbehar								1			1	25	0.03
REC, Lakhimpur							1				1	25	0.03
REC, Fatehpur							1				1	25	0.03
REC, Kokrajhar							1				1	25	0.03
Total			1			2	5	3			11	275	0.33
Workshop / Seminar (@ Rs.2.50/event)=2													
CMER&TI									1		1	100	2.00
RSRS, Boko								1			1	100	2.00
Total								1	1		2	200	4.00
Grand Total												6665	16.60

4. Trial of Technology

4.1 Trial of Technology to be conducted during 2018-19 @ 0.02/event = 22 Entrepreneurs

#	TOT activity (Name)	Farmers covered (No.)
1	Construction and supply of treated bamboo appliances like Split type collapsible moutage for eri	500
2	Construction and supply of treated bamboo appliances like box type moutage for muga, chaloni etc	100
Total		600 ***

***To be conducted under budget provision of research project APR 5888 Standardization & Popularization of Treated Bamboo Products in Ericulture.

4.2: Trial of Technology

INM package for sustainable castor (*Ricinus communis* L) cultivation through multilocational field trial at farmers level

Based on the findings of a concluded project entitled “*Screening of microbial flora (potential biofertilizer) of castor rhizosphere and development of INM package in ericulture*” (funded by DST) an INM package has been developed with 50% curtail on inorganic NPK for systematic castor cultivation with following details:

S/N	Constituent	Fertilizer type	Formulation	Quantity per plant
01	<i>Azospirillum brasilense</i> strain KAZ AZP01	Biofertilizer	In carrier (e.g. vermicompost) and inert material (e.g. Charcoal) in 1:1 ratio with final microbial load 10^8 cfu.	500 gm
02	<i>Achromobacter xylosoxidans</i> strain KAZ AZB05			
03	<i>Bacillus firmus</i> strain MAJ PSB12			
04	<i>Pseudomonas aeruginosa</i> strain MAJ PIA03			
05	FYM (Cow-dung)	Organic fertilizer	Compost	500 gm
06	Urea	Inorganic fertilizer	Pure	6.5 gm
07	SSP		Pure	12.5 gm
08	MOP		Pure	1.50 gm

Application of INM package:

The inorganic NPK @ Urea: SSP: MOP = 6.5g: 12.5g: 1.5 g per plant with 500 gm of cow-dung/FYM need to apply at the time of seed showing while preparing the pit. Further, the formulation of biofertilizer consortia (@ 500 gm per plant with 10^8 cfu) should be applied after 2 weeks of germination, at the base of the plant by making ring.

Improvement in leaf yield:

The average leaf yield per castor plant is 78 nos. while treated with the INM package. Application of this INM package can enhance the leaf yield by 35-40% against the untreated plants. The average leaf biomass increased over control recorded from 65-70% while treated with the recommended INM package. The existing recommended package & practice for castor cultivation without biofertilizer input was considered as control.

Objectives:

- ✓ Mass multiplication of selected bacteria in liquid nutrient medium and formulation/preparation of the bacterial consortium.

- ✓ Assessment of agronomical parameter and validation of INM package through extensive multilocational field trial at REC and farmers level

Action Plan:-

#	Activities	Methodology	Time schedule
01	Varieties of castor plant	A non-bloomy red variety of castor (NBR-1)	March' 2018
02	Farmer/site selection	Borhulla, Tamulichiga, Dikchu, Boko, Dimoria, Udalguri and Lakhimpur.	March' 2018
03	Tillage	One acre of land will be pulverized by 2-3 times ploughing followed by cross ploughing to a depth of 20-25 cm. The weeds will be removed to make proper tilt and level for facilitating good root penetration.	March' 2018 & September' 2018
04	Spacing	Pit will be prepared in 20x25x25 cm size maintaining 1x1 m spacing. FYM (@500 gm) will be applied in each pit as basal dose and mixed properly with soil. Minimum inputs like land preparation cost, castor seed etc., INM package etc. will be provided to the farmers.	March' 2018 & September' 2018
05	Preparation of INM	The selected biofertilizer bacteria will be cultured on sterilized liquid broth and consortium will be prepared in wet form by shake flask culture method. After 48 hrs of incubation at 37 ⁰ C, the formulation of the microbial culture will be prepared by mixing proportionately in carrier material (e.g. vermicompost) and inert material (e.g. Charcoal) in 1:1 ratio with final microbial load 10 ⁸ cfu. Four biofertilizer strains have to formulate separately and mix in equal proportion before application. The combinations of four selected rhizobacteria with 50% reduced dose of inorganic fertilizer	April' 2018 & September' 2018
06	Application of INM	Bio-formulation of <i>Azospirillum sp.</i> KAZ AZP01, <i>Achromobacter sp.</i> KAZ AZB05, <i>Bacillus sp.</i> MAJ PSB12 and <i>Pseudomonas sp.</i> MAJ PIA03 (@ 500 gm/plant) with 50% restrains on recommended NPK dose (N:P:K = 7.5g:12.5g:1.5g) will be applied in each plant. <i>In-situ</i> awareness, demonstration and field day programme will be conducted before and during the trial.	April' 2018 & October' 2018
07	Seed treatment	Castor seed treatment will be done by soaking the seeds in water for 24 hrs	April' 2018

		and treat with Bavistin or Thiram @ 3 gm/Kg for 10-15 minutes before sowing to check fungal infestation. Unhealthy / dry seed will be discarded prior to sowing.	& October' 2018
08	Seed sowing	Two seeds per pit at a depth of 2.5-3.0 cm will be sown. Germination takes place after 7-10 days and only one healthy seedling per pit will be allowed for grown further.	April' 2018 & October' 2018
09	Inter-culture operation	Routine hoeing and weeding 3 to 4 times in a year will be done for better leaf yield. Removal of floral primordial for better vegetative growth will also be practised.	April-May-June' 2018 & Dec-Jan' 2019
10	Harvesting	Harvesting will be occurred 14 weeks after the experimental cultivation.	June-July' 2018 & Jan-Feb' 2019
11	Assessment of plant growth parameter	Plant growth parameters viz., numbers of leaves per plant, leaf weight (fresh), stem base diameter, root length, leaf biomass, leaf moisture content and percentage of biomass per leaf increase over control will be studied to assess the most efficient treatment combination for growth of castor plant.	June-July' 2018 & Jan-Feb' 2019

Budget Requirement

S/N	Head	Amount required (Rs. in)	Justifications
1	Consumable	0.70	For procurement of culture media, urea, SSP, MOP, vermicompost etc.
2	Travel (within India)	1.00	Conveyance of staff/scientists and carrying of INM package from laboratory to field trial locations.
3	Contingency	0.80	Required for Land preparation, seed cost, man-days, FYM, demonstration programme etc.
Total (Rs.)		2.50 *	

***Fund & target not allocated in the action plan. To be done from regular budget with reduced budget.**

5.Training / Human Resource Development to be carried out during 2018-19 (Tentative)

(Subject to change from Training Section, C.O. , Bangalore)

Activity	Quantity	Financial budget (Rs.)
C1. CBT	2100 (trainees)	45.00
C4. Seed act Training/awareness programme	100	
C5. Any other training (Seed act, PCT, STEP & others)	230	
C8. SRCs/SRC Training	10 SRCs**	

** One new SRC to be established at lower Assam in consultation with RSRS, Boko.

6. Publicity / Print Literature /Films/ Videos

Sl. No.	Item	Target (No.)	Budget (Rs. In lakh)
1	Periodicals	08	3.00
	Annual Report		
	CMERTI Sericulture News		
	Hindi News Letter		
	E-News Letter		
2	Publications/Brochure	13	
	Journal papers		
	Conference papers		
	Books		
	Booklets / Leaf lets		
	Posters		
	Training literature		
4	Films/ Videos (including extension programmes)	2	
5	Media plan TV/Radio programme, Advertisement	5	3.50
	Total	28	6.50

7. Seri Model Village Programme /IVLP (2018-19)**Physical target** : 10 SMVs (Muga pre cocoon 04, Eri pre cocoon 04 , Eri PCT 01 and new Muga PCT 01)**Proposed districts to be covered in Assam**

#	Name of the district	Number of Villages to be covered			
		Muga	Eri	PCT (Eri)	PCT (Muga)
1	Sivasagar	1	1		
2	Jorhat		1	1	
3	Golaghat	1	1		
4	Dibrugarh	1			
5	Tinsukia		1		
6	Goalpara	1			
7	Lakhimpur				1
Total		4	4	1	1

Number of farmers: 922 nos (@ 100 farmers for each muga/eri pre cocoon and 62+60 farmers in post cocoon SMV (Eri + Muga)**Particulars/ Activities****Muga Pre cocoon**

Sl.No.	Particulars/ Activities	Budget (Rs. in lakh)
1.	Supply of seed cocoons to pvt. graineurs	6.00
2.	Supply of disinfectants (Bleaching powder, lime), vermin compost, etc. during demonstration	1.00
3.	Supply of seedlings (Som / soalu) for plantation during demonstration	2.00
4.	Mobility of Scientists/ technical staff	1.50
5.	Mobile bills of Nodal officers (5)	0.24
TOTAL		10.74

Eri Pre cocoon

Sl.No	Particulars/ Activities	Budget (Rs. in lakh)
1.	Supply of seed cocoons to pvt. graineurs	1.44
2.	Supply of disinfectants (Bleaching powder, lime), vermin compost, etc. during demonstration	1.00
3.	Supply of seedlings (Kesseru/Borpat) for plantation during demonstration	2.00

4.	Mobility of Scientists/ technical staff	1.50
5.	Mobile bills of Nodal officers (5)	0.24
TOTAL		6.18

Post cocoon (Eri)

Sl.No	Particulars/ Activities	Budget (Rs. in lakh)
01	Organization of 4 days training for spinners	0.50
02	Mobility of Scientists/ technical staff	0.30
03	Mobile bills of Nodal officers	0.06
Total		0.86

Post cocoon (Muga) (Newly proposed as 10 nos SMV approved in Action plan from CO , Bangalore)

Sl.No	Particulars/ Activities	Budget (Rs. in lakh)
01	Organization of 4 days training for reelers	0.50
02	Organization of awareness programme (2 nos.)	0.20
03	Supply of reeling machine (Bani) (6 nos)	0.90
02	Mobility of Scientists/ technical staff	0.40
03	Mobile bills of Nodal officers	0.06
04	Contingencies	0.16
Total		2.22

8. Other Activities

Annexure 2. VIII

8.1. Land use and resource conservation: (Rupees in lakh)

#	Activities	Physical Target for 2018-19					Financial for 2018-19				
		Qtr-1	Qtr-2	Qtr 3	Qt-4	Total	Qtr-1	Qtr-2	Qt 3	Qt-4	Total
A	Raising of seedlings/ sapling (nos)										
I	Som / Soalu seedling (Raising cost Rs.500 per seedling in polybag)										

1	CMER&TI, Lahdoigarh	50000		0	0	50000	2.50	0	0	0	2.50	
2	RSRS, Boko	50000	50000	0	0	100000	2.50	2.50	0	0	5.00	
3	REC, Lakhimpur	5000	0	0	0	5000	0.25	0	0	0	0.25	
4	REC, Coochbehar	5000	0	0	0	5000	0.25	0	0	0	0.25	
5	REC, Tura	5000	0	0	0	5000	0.25	0	0	0	0.25	
6	REC, Kokrajhar	5000	0	0	0	5000	0.25	0	0	0	0.25	
	Sub- total (i)	120000	100000	0	0	170000	6.00	2.50	0	0	8.50	
II	Raising of Kesseru seedlings (Raising cost Rs. 5.00 per seedling with polybag)											
1	CMER&TI, Lahdoigarh	10000	0	0	0	10000	0.20	0	0	0	0.20	
2	RSRS, Mendipathar	10000	0	0	0	10000	0.20	0	0	0	0.20	
3	REC, Kokrajhar	5000	0	0	0	5000	0.05	0	0	0	0.05	
											Sub- total (ii)	0.45
											Total (A)	11.45
B	Supply of seedling / sapling											
I	Som / Soalu seedling @ Rs.5/- per seedling											
1	CMER&TI, Lahdoigarh	5000	5000	0	0	10000	0	0	0	0	0	
2	RSRS, Boko	10000	10000	0	0	20000	0	0	0	0	0	
3	REC, Lakhimpur	2500	2500	0	0	5000	0	0	0	0	0	
4	REC, Coochbehar	2500	2500	0	0	5000	0	0	0	0	0	
	Sub- total (i)	20000	20000	0	0	40000	0	0	0	0	0	
II	Kesseru seedling @ Rs Rs. 5.00-per seedling											
1	CMER&TI, Lahdoigarh	5000	3000	0	0	8000	0	0	0	0	0	
2	RSRS, Mendipathar	5000	5000	0	0	10000	0	0	0	0	0	
	Sub- total(ii)	10000	8000	0	0	18000	0	0	0	0	0	
											Total (B)	0
C	Dfls brushing											

I	Muga Commercial crop (Cost @ Rs. 10/- per dfl)										
1	CMER&TI, Lahdoigarh	1500	0	1500	0	3000	0.150	0	0.150	0	0.30
2	RSRS, Boko	1250	0	1250	0	2500	0.125	0	0.125	0	0.25
3	REC, Lakhimpur	250	0	250	0	500	0.025	0	0.025	0	0.05
4	REC, Coochbehar	250	0	250	0	500	0.025	0	0.025	0	0.05
5	REC, Kokrajhar	200	0	200	0	400	0.020	0	0.020	0	0.04
	Sub-total (I)	3450	0	3450	0	6900	0.345	0	0.345	0	0.69
II	Muga Seed crop (Cost @ Rs. 10/- per dfl)										
1	CMER&TI, Lahdoigarh	250	600	250	600	1700	0.025	0.060	0.025	0.060	0.170
2	RSRS, Boko	150	200	200	150	700	0.015	0.020	0.020	0.015	0.070
3	REC, Tura	100	200	200	100	600	0.010	0.020	0.020	0.010	0.060
4	REC, Lakhimpur	0	200	0	200	400	0	0.020	0	0.020	0.040
5	REC, Coochbehar	100	200	200	100	600	0.010	0.020	0.020	0.010	0.060
	Sub-total (B)	600	1400	850	1150	4000	0.060	0.140	0.085	0.115	0.400
III	Eri (Cost @ Rs. 5/- per dfl)										
1	CMER&TI, Lahdoigarh	75	75	75	75	300	0.00375	0.00375	0.00375	0.00375	0.01500
2	RSRS, Mendipathar	100	150	100	150	500	0.00500	0.00750	0.00500	0.00750	0.02500
3	REC Fatehpur	0	0	100	100	200	0	0	0.00500	0.00500	0.01000
4	REC, Kokrajhar	50	50	50	50	200	0.00250	0.00250	0.00250	0.00250	0.01000
	Sub-total (C)	225	425	325	375	1200	0.01625	0.02125	0.02375	0.02375	0.08500
D	Muga Commercial cocoon production (@ 60 cocoons/dfl)										
1	CMER&TI, Lahdoigarh	90000	0	90000	0	180000	0	0	0	0	0
2	RSRS, Boko	75000	0	75000	0	150000	0	0	0	0	0
3	REC, Lakhimpur	15000	0	15000	0	30000	0	0	0	0	0
4	REC, Coochbehar	30000	0	30000	0	60000	0	0	0	0	0
5	REC, Kokrajhar	12000	0	12000	0	24000	0	0	0	0	0
	Sub-total (D)	222000	0	222000	0	444000	0	0	0	0	0

#	Activities	Physical Target for 2018-19					Financial for 2018-19				
		Qtr-1	Qtr-2	Qtr 3	Qtr-4	Total	Qtr-1	Qtr-2	Qtr 3	Qtr-4	Total
E	Muga Seed cocoon production @ 40 cocoons/ dfl										
1	CMER&TI, Lahdoigarh	10000	24000	10000	24000	68000	0	0	0	0	0
2	RSRS, Boko	6000	8000	8000	6000	28000	0	0	0	0	0
3	REC, Tura	4000	8000	8000	4000	24000	0	0	0	0	0
4	REC, Lakhimpur	0	8000	0	8000	16000	0	0	0	0	0
5	REC, Coochbehar	4000	8000	8000	4000	24000	0	0	0	0	0
	Sub-total (E)	24000	56000	34000	46000	160000	0	0	0	0	0
F	Eri cocoon production @ 10.0 kg shell /100dfl										
1	CMER&TI, Lahdoigarh	7.5	7.5	7.5	7.5	30.0	0	0	0	0	0
2	RSRS, Mendipathar	10.0	15.0	10.0	15.0	50.0	0	0	0	0	0
3	REC Fatehpur	0.0	0.0	10.0	10.0	20.0	0	0	0	0	0
4	REC, Kokrajhar	5.0	5.0	5.0	5.0	20.0	0	0	0	0	0
	Sub-total (F)	22.5	27.50	32.5	37.5	120.0	0	0	0	0	0
G	Muga dfls production from 60% of cocoons generated from seed crop @ Cocoon : dfl is 4 :1 (g)										
1	CMER&TI, Lahdoigarh	2000	4800	2000	4800	13600	0	0	0	0	0
2	RSRS, Boko	1000	2500	2500	1000	7000	0	0	0	0	0
3	REC, Tura	500	1500	1500	500	4000	0	0	0	0	0
4	REC, Lakhimpur	0	1200	0	1200	2400	0	0	0	0	0
5	REC, Coochbehar	500	1500	1500	500	4000	0	0	0	0	0
	Sub-total (G)	4000	11500	7500	8000	31000	0	0	0	0	0
H	Eri dfl production (source of seed cocoons: Eri section, CMER&TI) @ Cocoon : dfl is 4 :1 (Nos)										
1	Eri Seed laboratory (CMER&TI)	0	400	1000	500	1900	0	0	0	0	0
2	RSRS, Mendipathar	2500	2500	2500	2500	10000	0	0	0	0	0
	Sub-total (H)	2500	2900	3500	3000	11900	0	0	0	0	0
I	Muga dfls supply @ Rs.10/- per dfl (g)										

1	CMER&TI, Lahdoigarh	2000	4800	2000	4800	13600	0	0	0	0	0
2	RSRS, Boko	1000	2500	2500	1000	7000	0	0	0	0	0
3	REC, Tura	500	1500	1500	500	4000	0	0	0	0	0
4	REC, Lakhimpur	0	1200	0	1200	2400	0	0	0	0	0
5	REC, Coochbehar	500	1500	1500	500	4000	0	0	0	0	0
	Sub-total (I)	4000	11500	7500	8000	31000	0	0	0	0	0
J	Eri dfls supply										
1	Eri Seed laboratory (CMER&TI)	400	400	400	400	1600	0	0	0	0	0
2	RSRS, Mendipathar	2400	2350	2400	2350	9500	0	0	0	0	0
	Sub-total (J)	2800	2750	2800	2750	11100	0	0	0	0	0
K.	Expansion of Muga host plant acreage (acres) @ Rs. 40, 100 per acre										
	CMER&TI, Lahdoigarh	1	1	2	1	5	0.400	0.400	0.800	0.400	2.000
L	Expansion of Eri host plant acreage (acres) @ Rs. 40, 100 per acre										
	CMER&TI, Lahdoigarh	-	2	3	-	5	-	0.800	1.200	-	2.000
	Grand Total										16.625

9. Procurement of Equipment and other accessories

Annexure 2. IX

Sl. No.	Item	Budget allocation	Remarks
1	Maintenance of Existing infrastructure /assets	60.00	Shown in the action plan. May vary in final budget allocation, which will be informed separately by Director (F)
2	Asset creation	30.00	
3	Other item under asset	120.00	
	Total	210.00	

Equipment/other requirement	Quantity	Justification
Sonicator	1	Under the project "Whole Genome Sequencing and functional genomics of Golden Silk Moth" for preparation of samples of plant and animal origins
Maintenance/repairing of equipments /ACs/ labs including AMC of major equipments	-	-do-

Repairing and updation of the software of the HPLC system as the computer connected to the system was out of order. The previously installed software will no longer useful for running the equipment which is need to be updated to new version.	-	-do-
RT-PCR (qPCR)	1	Expression analysis of different treatment in the different projects running at the section
PCR Machine	1	One PCR machine is required at the section for routine molecular biological work
Digital autoclave	1	One digital autoclave (approx. 20 ltr) capacity is required for easy and quick sterilization
Wooden Rack	5	For keeping chemicals and fertilizers in the store of Pathology Section
Extention of Lab by constructing in the 1 st floor of Pathology section	-	As the laboratory area become limited to the Scientist and JRF along with equipment it is necessary to construct upper flour of the Pathology Lab.
GPS instrument with software	1	For measuring Longitude & Latitude of different locations
Atomic Absorption Spectrophotometer with UPS	1	For chemical analysis of micro nutrients in soil samples
Refrigerator	1	For preserving chemicals and samples in optimum conditions
Digital Camera	1	For documentation of Soil Health Cards
Laboratory tools	2	For comfort analysis in laboratory
UPS System – 10 KVA	1	For ensuring continuous power supply
Eri Seed Laboratory		
RCC building for eri seed laboratory including Moth testing lab, oviposition room, seed cocoon storage room with toilets.	1	For establishment of Eri seed Laboratory
Refrigerator	1	To keep cocoon
Furniture (lab. Desk, cabinet, tray, seating stool, steel almirah, Steel trunk)	-	Furnishings for seed laboratory.

Computer with windows 10 operating system, internet facility etc.)		
PMC Section		
Godrej Almirah	2	For keeping books, leaflet and other important things in safe custody
Computer and accessories (scanner & Printer	1	For data entry, calculation and documentation of different activities
Eri Section		
Tractor	1	For tilling of plantation area & other works
Steel perforated almirah 1 no.	1	To keep eri cut cocoons protecting from predators like rats.
Earth filling of low lying area 50 trucks	15000 cft	For effective utilization of land
FYM /Vermicompost	3000 cft	Castor 2 acres, Kesseru 2 acres, Ailanthus= 2 acres Others = 1 acre
Bamboo	200 nos	For green fencing construction
Plastic fencing	200 m	For protection of plantation from grazing cattle
CMER&TI Nested units		
RSRS, Mendipathar		
Computer with Lesser Printer	1	At present there is only 1 set of computer for functioning of entire works of the station. Two scientists are presently working in the station without computer facilities; hence there is utmost necessity of a new computer set (Computer with Laser printer) for the scientists supporting the technical works.
Motorized Grass Cutter	1	Due to luxuriant growth of weeds in the plantation area of RSRS, Mendipathar, maximum no. of mandays are engaged for frequent weeding & cleaning etc. As such, a motorized grass cutter is highly essential to maintain the Eri food plantation.
Motorized Water Pump (1HP),	1	Particularly during winter season, it becomes quite difficult to maintain Eri food plants & rising of Kesseru nursery due to acute shortage of water .As a result, plants are unable to produce sufficient leaf for silkworm rearing as per Annual Target. Hence, a motorized water pump having capacity of 1 HP is essential for irrigation and daily use of the station.
Plastic rearing Tray, (Size- 55 x 85 cm, @	50	To conduct rearing of different strains, Eco races and maintenance of

500/-per tray approx.)		Improved Eri silkworm breed, (since most of the existing wooden trays presently used are become unserviceable) the indented quantity of plastic trays is highly essential.
Drinking water facility in office (RO Filter)	1	There is no drinking water facility for the office staffs, deficiencies of which has been realizing long back particularly in summer season. Therefore, one drinking water filter R O. facilities is urgently required.
Refrigerator	1	Refrigerator is an essential requirement in the office laboratory for preserving different types of items, samples, including chemicals etc. At present RSRS, Mendipathar has not a single refrigerator for use. So one refrigerator is highly essential.
One Electric Inverter set	1	There is occurrence of frequent load shading during office hours which greatly hampers day to day office works. Hence, one Electric Inverter is required for smooth functioning of the office.
B.O.D. Incubator	1	This station has one old BOD incubator which is not functioning properly. RSRS, Mendipathar producing & supplying Eri Dfl's including C-2 Breed. As such this station is facing difficulties in preserving Dfls & seed cocoons. Therefore, one new BOD Incubator is required to overcome such problems.
Binocular Microscope	2	For detection of pathogen during mother moth examination.
Electronic Chemical Balance (0.01 – 200 gm.)	1	For weighing of chemical & silkworm egg (Dfl) etc.
Digital Camera with movie maker(high megapixel/ resolution)	1	To capture the scientific programmes & records of various field activities for reporting & documentation.
REC, Lakhimpur		
BOD Incubator	1	Incubation of silkworm seed/cocoon preservation
Nylon Net for rearing of silkworm	5	Early stage rearing of Muga silkworm
Foot Compression Sprayer	1	Spraying insecticides/ fungicides/ disinfection of farm, etc
Air Conditioner	1	For office
File Cabinet (4 chambers)	1	Keeping files/registers of the REC
Motor Bike (Two wheeler)	1	Mobility for Scientist and staffs during visit of Farmers field
Ceiling Fan/ Stand Fan	2 Nos	Official
Consumable items during moth examination, disinfectant, etc	Lump-sum	Moth examination and rearing at REC

Appliances and inputs for Farm maintenance	Lump-sum	For Farm maintenance at the REC
Repairing of Power Tiller, office buildings/ paintings of roof, temporary fencing for boundary, rearing shed, etc	Lump-sum	Official
Technical Building	1	For establishment of Laboratory facilities
Type-IV Quarter	3	For accommodation of scientists
Record Room	1	For keeping old but important records in proper condition.
Equipments	-	For research works

10. Revenue Generation target for the year 2018-19

Annexure 2.X

#	Particulars	Amount (Rs. In lakh)	#	Particulars	Amount (Rs. In lakh)
1.	Eri Section (GCC Chenijan)	1.20	12	RSRS, Boko	6.00
2.	Entomology Section	0.60	13	RSRS, Mendipathar	1.10
3.	Pathology Section	0.50	14	RSRS, Shadnagar	0.80
4.	Biotechnology Section	0.80	15	REC, Tura	0.80
5.	Soil Chemistry & Agronomy	0.50	16	REC, Lakhimpur	1.00
6.	Extension & Training	4.00	17	REC, Coochbehar	1.00
7.	Guest House	1.00	18	REC, Kokrajhar	0.50
8.	Field Laboratory, Titabar	0.40	19	REC, Diphu	0.50
9.	Host Plant	0.60	20	REC, Fatehpur	0.30
10.	Seed Technology Section	1.36	21	Other	14.94
11.	Rearing Section	1.80		Total	40.0

11. Media and Communication Programmes

Annexure 2.XI

#	Components	Target
I	PRINT LITERATURE	
A	PERIODICALS (<i>Applicable for Main Institutes</i>)	
i	Newsletters	English-4 Hindi-2
ii	Magazines (E-Magazine)	2
iii	Annual Report	1
B	PUBLICATIONS (<i>Applicable for Main Institutes</i>)	
i	Journal Papers	10
ii	Conference Papers	10
iii	Books	1
II	EXTENSION LITERATURE(<i>Including nested units</i>)	
i	Pamphlets/leaflets	10
ii	Posters	10
iii	Training Literature	2
III	PRINT MEDIA-RELEASE OF ADVERTISEMENTS IN NEWSPAPERS/MAGAZINES	
i	Tender notifications (<i>Applicable for Main Institutes</i>)	As per requirement
ii	Display advertisements (<i>Applicable for Main Institutes</i>)	do
iii	Other advertisements *1 (<i>Including nested units</i>)	do
iv	Publication of news/articles/features in newspapers/magazines (<i>Including nested units</i>)	do
IV	PRESS & MEDIA RELATION	
i	Press Meets / Press Visits / Press Releases (<i>Applicable for Main Institutes</i>)	4
ii	Press releases for Mass Media programmes (<i>Including nested units</i>)	-
V	ELECTRONIC MEDIA - Radio/TV programmes (<i>Applicable for Main Institutes</i>)	
i	Participation in radio programmes/Talks (<i>Including nested units</i>)	5
ii	Participation in Television programmes	Subject to approval by CO

iii	Sponsored programmes	do
VI	SOCIAL MEDIA (Applicable for Main Institutes)	
A	Websites	
i	Exclusive Institute websites	1
ii	Link to CSB websites	1
iii	Regular updates (Weekly)	
B	SMS Messages	50000
C	Microblogs	
i	Twitter	
ii	Facebook	Unlimited
iii	Youtube	Unlimited
VII	FILMS/VIDEOS (Including nested units)	
i	Short films (Specific to a single technology)	6
ii	Documentary on Institutes profiles, activities, achievements (on Muga and Eri technologies)	2
iii	Success stories	4
VIII	IEC	1

12. Hiring of Mandays

#	Unit	Target (Man days)	Rate (Rs.)	Amount (Rs. in lakh)	Justification
1	REC, Lakhimpur	300	500.00	1.50	Rearing, grainage and Farm maintenance
2	RSRS, Boko	820	500.00	4.10	In addition of seedling raising and silkworm rearing, required for misc work including Jungle cutting, weeding, manuring, maintenance of vermi- compost pit, Irrigation etc.
3	CMER&TI, Lahdoigarh	3000	500.00	15.0	Rearing, grainage and Farm maintenance at GCC, Chenijan
Total				20.60	(not shown separately in the action plan)

13. Construction of approach road cement block fitting at CMER&TI farms

#	Particulars
1	Approach road cement block fitting (1 km length) of 3 different farms
2	Reconstruction of the approach gate of the institute
3	Black topping of roads in Residential Quarter complex

14. Eri Seed Multiplication at EREC , Fatehpur

Plan for Multiplication

#	DFLs to be brushed during 1 st & 2 nd Seed Crop Rearing	Cocoons to be harvested		Cocoons to be Purchased and processed for grainage		No. of DFLs to be prepared	Grainage Period
		By weight (Kg)	By Nos.	By weight(kg)	By Nos		
1	1000 (Sep.1 st Week 2018)	250	75000	200	60000	12000	15.10.2018 to 25.10.2018
2	1000 (Nov. Last week 2018)	250	75000	200	60000	12000	01.02.2019 to 15.02.2019
	Total	500	150000	400	120000	24000	-

Requirement of Fund for Production of Eri DFLs

#	Particulars	Unit	Rate (Rs.)	Total Amount (Rs. in lakh)	Remarks
1.	Cost of DFLs	2000	5.00	0.1000	
2.	Airlifting charges of DFLs	2	2000.00	0.0400	
3.	Cost of Seed Cocoons	120000	1.00	1.2000	
4.	Cocoons purchasing (Transportation vehicle Charge)	4	2000.00	0.0800	
5.	Mandays for Grainage (Training to Private Grainure) operation	290	175.00	0.5075	Manrega Rate
6.	Miscellaneous expenditure	-	-	0.0500	
			Total	1.9775	(Not included in the approved action plan)

Target at a glance for the year 2018-19

Name of institute	Projects			Extension programs						Technologies transferred		Training		DSHC issued to be issued	Publicity material (No.)	Patents obtained/ To be Applied	Product developed/ technologies to be commercialised
	Projects of earlier year continued through	Projects to be concluded during the year	New Projects to be initiated	Farmers meet / Krishi Mela	Field day	Farmer's day	Awareness programme	Vichar Gosthi/ Group Discussion	Tech. Demonstration	Technologies to be transferred (No.)	Farmers to be covered (No.)	Programs to be Conducted (No.)	No. of person trained				
CMER&TI Ladoigarh	18	6	5	3	18	18	33	37	11	2	600	04	2100	600	147	-	1