EXTERNAL PROJECTS DURING THE YEAR 2015-16 (CONTINUED)

Sl. No.	Title of the project/Duration	Name of PI	Current Status
1.	Development of descriptors and evaluation of artificial inoculation in *Aquilaria malaccensis* Lamk. Funding Agency: NMPB	Dr. R.K. Borah Scientist-F	Different *A. malaccensis* plantation sites were identified in Assam, Manipur and Arunachal Pradesh states of NE India. Information regarding the different population of *A. malaccensis* in Assam and North East India were collected from various sites. Survey has been carried out in different sites of Assam (Rowta, Tezpur, Namti, Ramungia, Titabor, Bongaigaon, Dhupdhora, Dudhnoi, Damra, Rani, Nagajanka), Manipur (Jiribum and Moreh) and Arunachal Pradesh (Sessa). Seeds as well as seedlings were collected from Bongaigaon, Rowta, Rani, Boko, Dhupdhora from Assam; Moreh, Jiribum (Manipur) and Sessa (Arunachal Pradesh). Agar nursery was raised in RFRI campus for ex- situ conservation. DNA extraction and purification of different samples is in progress. Artificial inoculation trials for agarwood formation were carried out at Assam (Bongaigaon) and in Mizoram (Seling). Observation and recording of increase in infection from the point of artificial inoculation was done at regular interval of time.
2.	Morinda citrifolia L. (Noni)-livelihood option for the people of North East India. Funding Agency: NMPB	Dr. T.N. Manohara Scientist-D	Field survey (A&N Islands and Southern States), and selection of elite planting material and introducing into the selected sites in three different North Eastern States - Assam, Mizoram and Tripura, including the private lands of selected local farmers. Establishment of Noni multiplication nursery and germplasm bank at RFRI and standardization of propagation techniques - through seed and stem cuttings. Qualitative and quantitative analyses of fruits- antioxidant property, total dissolved salt and other alkaloids. Economics of cultivation: cost – benefit ratio. Training programmes and awareness creation- about health benefits, propagation and conservation of Noni- among local people. Studies on growth parameter, inter crop trials and phenology. Insect–pest management and biological control. Shelf life improvement of the fruits.
3.	Bamboo genetic evaluation, improvement and propagation Funding Agency: NBM	Mohd. Ibrahim Scientist-C	Visited different multilocational trial sites established by RFRI during 2008-09. The name of sites where MLTs were established are: (i)Chukuniapara, Kamrup (Assam), (ii)Jalukie, Peren (Nagaland), (iii)Teliamura (Tripura) (iv) Loharband Hailakandi (Assam) (V)Tuiral & Vairangte (Mizoram). During the tour to MLT sites namely Teliamura, jalukie, Chukuniapara and Tuiral it was found that the plantation were destroyed and are not in the position of evaluation. Regarding Status of MLT sites at Loharband, (Hailakandi) of Assam information was sought from Forest Department and they informed that the plantations are not in good status of evaluation.

			Evaluation of Trial cum gene bank and germplasm bank of RFRI wes carried out and identified promising clumps and details are given below 13 Superior clumps from the four species (2 each from Dendrocalamus hamiltonii and B. nutans, 5 from Bambusa tulda and 4 from B. balcooa) were selected from the gene bank and were used for propagation through culm and branch cuttings. From germplasm bank 2 more superior clumps of Bambusa tulda and one superior clump of B. nutans was selected for propagation through culm cutting. Both culm and branch cutting were treated with 200 ppm IBA before planting in nursery. Performances of cuttings through culm cutting were found satisfactory in B. balcooa, B. nutans and D. hamiltonii. However, in case of B. tulda performance is very poor. Survey was also conducted for selection of new promising clumps of D. hamiltonii, B. tulda and B. nutans and details are as follow From Tinsukia, Dibrugarh, Golaghat, Titabar and Jorhat districts of Assam clumps of B. tulda and B. nutans& B. balcooa were selected and rhizome from selected clumps were established in germplasm bank of RFRI. From lower Subansari of Arunachal Pradesh promising clump of B. tulda identified collected rhizome was planted in the germplasm bank. Visited Lower Dibang valley Lohit District of Arunachal Pardesh and collected new rhizomes of B. tulda and D. hamiltonii. Maintenance activity like labeling, weeding loosening of soil around all clumps and fertilizer application etc. in germplasm of RFRI was carried out to maintain the health status of the clumps.
4.	Commercial production of quality planting material of bamboo species Funding Agency: NBM	Shri Satyam Bordoloi Scientist-C	The project was initiated during January, 2015 Identified superior clumps of bamboo species, *viz*., *Bambusa balcooa, B. tulda, B. nutans and Dendrocalamus hamiltonii* were utilised as the source of explants. Initially, explants were collected from two accessions of *B. tulda* (no. 469 and 480) and one accessions of *B. balcooa* (no.584) for shoot initiation. Contamination free cultures have been established in both these species. Further, *in vitro* mass multiplication of shoots has also been started in all the accessions using modified liquid MS Medium.

5.	Study on diversity and dynamics of the soil seed bank in Nambor researcve forest, a tropical semi evergreen forest of Assam Funding Agency: DST	Shri D. K. Meena Scientist-B	Field surveys were conducted in different parts of Nambor Reserve Forest for vegetation sampling and soil sample collection. On basis of forest composition, four different sites *viz;* Sal dominated forest, Teak dominated forest, Lagerstroemia dominated forest and Mixed forest was selected for soil sampling. The above ground vegetation data was recorded and soil samples of different depths were collected from selected sites to conduct seed bank experiments. On the basis of results of seed bank experiments we found that seed banks in sal dominated site were small in both size and number of species. The highest species richness of the soil seed bank (number of species per soil volume) was found in the open mixed forest and about one third of all the species (mostly herbs and shrubs) were found in the seed bank. The number of species and seeds in the seed bank declined significantly from closed overgrown community to open canopy. Lab analysis of soil samples for pH, Organic C, texture, Av N was completed and found that soil of Nambor is highly acidic in nature, concentration of organic carbon and available nitrogen was high in Teak dominated forest followed by Sal and Lagerstroemia dominated forest.