

RAIN FOREST RESEARCH INSTITUTE, JORHAT



THE RFRI – DEMO VILLAGE PROGRAM

A Mid Term Report

Submitted by: Pawan K. Kaushik

Alok Yadav

The Demo Village Team –

Pawan K. Kaushik

P K Verma

Alok Yadav

I P Borah

Niren Das

R. Bhattacharyya

Navjyoti Borah

Arundhati Baruah

Girindra Thakuria



INDIAN COUNCIL OF FORESTRY RESEARCH AND EDUCATION

AN AUTONOMOUS COUNCIL UNDER MINISTRY OF ENVIRONMENT & FORESTS,
GOVT. OF INDIA

THE RFRI - DEMO VILLAGE PROGRAM

Feb., 2009 – March, 2011

In view the ICFRE guidelines in reference to establishing a DEMO VILLAGE, extensive surveys were conducted in Jorhat and adjoining districts of Assam for selection of a suitable village cluster consisting of various target groups.

The Meleng Grant village cluster adjacent to the Gibbon Wild Life Sanctuary in Jorhat Distt., comprises of three villages *viz.* Bhogpur, Madhupur and Govindpur with a total of 222 households was identified as a potential site to work with a variety of rural target groups.

Demonstration of the tested technologies along with On-farm participatory research at Meleng Grant has been a great opportunity for RFRI to publicize its R&D activities. The local, regional, national and international visitors to the sanctuary have also come to know about the research and demonstration activities of RFRI while travelling through the villages.

Based on the information provided by the sanctuary staff and various target groups, meetings were organized in presence of the local SFD officials and issues were discussed with the villagers for identification of major thrust areas of research and demonstration.



Meeting at Gobindpur for Selection of Meleng Grant Village Cluster as the Demo Village

In regard to the community priorities within the mandate of RFRI, the aims and objectives of the program were finalized as below -

Aims & Objectives

- To provide sustainable livelihood alternatives through transfer of technologies to the fringe villages around the Protected Area (Gibbon WL Sanctuary).
- To benefit both science and society through On-farm Participatory Research.
- To create an opportunity for instant and effective extension of promising packages of practices developed On-farm
- To generate awareness among different stakeholders for biodiversity conservation.

Considering the new areas identified participatory for our interventions to cater the technological needs of the villagers, the thrust areas were listed as follows. The on-farm participatory research activities on these aspects are under progress.

Thrust areas (identified for interventions)

- Standardization of AF practices for round the year land utilization for wood and food production.
- Quality improvement in Vermi-Compost and Vermi-Bed Wash products by using different kinds of raw materials
- Bio-fencing with *Bambusa bamboos* in northern outer boundary of sanctuary for protection of croplands from wild elephants.
- Apiculture (as an alternate income option for the target group involved in charcoal making)
- Multitier agroforestry models (Selection of AF Components considering man –animal conflicts).
- Formulation of bio-pesticides by processing suitable parts of locally available plant species.
- Capacity building on biofertilizer production and field applications
- Impact assessment of the program.

Training and Demonstration Activities

Training on PRA for Microplanning

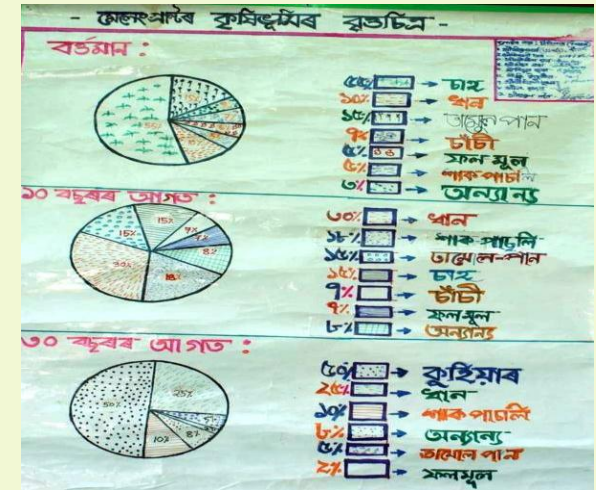
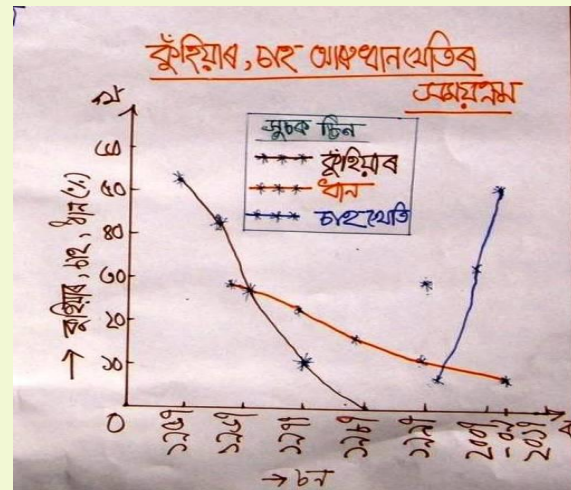
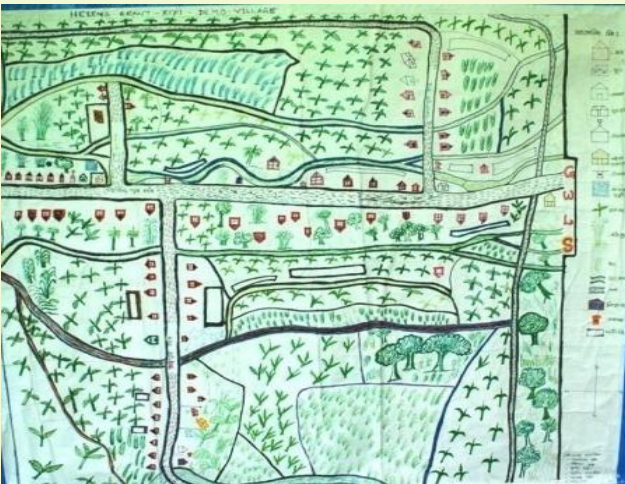
As a mandatory and primary approach towards encouraging people's participation and resource appraisal, a training on Participatory Rural Appraisal (PRA) and Microplanning was organized during February 5th to 9th, 2009 for both the staff and villager involved in the activities. Shri Pawan K. Kaushik imparted the training as Resource Person. PRA is a continuous process and is exercised time to time for updation of information and impact assessment. However, primary information related with their resources and their status with time trend, preferences, problems, wealth status, seasonal calendars, local research priorities etc. were collected in detail. Based on the data and facts revealed from PRA exercises, the process of planning on various aspects are still continued besides their implementations.



PRA Training (Participants)



Glimpses of Exercises During PRA & Microplanning



Capacity Building

Trainings on different aspects were conducted for capacity building of various target groups as detailed below:

Demonstration of Bamboo Nursery Techniques

A two days demonstration was organized in RFRI campus on Feb. 21st – 22nd, 2009. The hands-on training on bamboo propagation techniques and nursery management was very much encouraging to the users. As a result two bamboo nurseries have been established successfully by the villagers under the supervision of RFRI – Demo village team. The nurseries are now able to supply reliable plant materials of known sources to the agencies in the region.



Training on Bamboo Nursery management



Field applications of techniques

Demonstration of Vermicomposting: Techniques

The agricultural land use around the sanctuary and fringe villages is dominated by small tea gardens owned by the individual villagers. Tea gardens in these villages are the resultant of land use transformation from sugarcane and paddy due to problems from wild elephants since 1980.

Now, to enhance the tea leaf production, the farmers are compelled to use chemical fertilizers in the tea gardens. During resource appraisal it was pointed out that use of chemical fertilizers is not advisable in view of the environmental issues, related to management of Wildlife sanctuary. Considering the above facts, it was participatorily decided to replace the chemical fertilizers and make the practice eco-friendly in fringe area of the Sanctuary.

Thus, to begin with, the selected farmers were invited for two days' training cum field demonstration during Feb. 23-24, 2009 at RFRI and thereafter initiated establishment of Vermicompost Unit (VCU) on their homesteads. A total of 37 VCUs were established in the three villages. The villagers were fully involved in planning and operationalization of all the units by motivating the owners to contribute their physical efforts for



Training on Vermicomposting



Low Cost Vermi-Compost Unit

success of the activity.

As a primary support, the owners were provided with earth worms (*Eisenia foetida*) and facilitated with technical support from RFRI in selection of raw materials for composting. The feedbacks from the owners on its success and remarkable responses of crops witnessed on application of Vermicompost motivated other farmers to adopt the practice. Hence, in view of the increasing demands the RFRI-Demo Village Team developed a low cost VCU which is fabricated with the splits of treated bamboos. The cost was as low as Rs. 1000/unit as compared to the Rs. 6000/= for permanent units (10m x 6m).

Demonstration of Patchouli Agroforestry:

Considering the complaints of crop damage by wild elephants, patchouli (*Pogostemon cablin*) was identified as an alternate potential crop for additional income by introducing in the interspaces under Arecanut and other tree gardens. Patchouli, the medicinal and aromatic plant, does not attract the animals' even goats because of its unpalatable leaves.

A one day training on agrotechniques for patchouli multiplication



Low Cost Vermi-Compost Unit



Training on Patchouli cultivation

and nursery management was organized besides conducting a field visit to witness the success of patchouli based agroforestry models in the villages on Aug. 1, 2009. The willing farmers were identified from among the participants for further extension of the agroforestry model. To meet the requirement of planting material, patchouli plants were raised through cuttings in nurseries by the trained farmers after the training. The 20 days old patchouli plants were supplied to the willing farmers for extension of the agroforestry practices in the villages.

Patchouli was successfully cultivated under arecanut and mangium tree gardens. The farmers could earn an additional income @ Rs. 27,000/ per acre by utilizing the interspaces on their home gardens which was otherwise not being utilized.

A liaison meeting was also held at Demo Village with the leading entrepreneur Shri Ranjit Bora invited from M/s Brahmaputra Aromatic Oil Industries, Koliabor Assam who later purchased the harvested leaves from the farmers by way of on spot payments.



Patchouli – arecanut AF Model



Patchouli – mangium AF Model

Awareness program on *Acacia mangium* :

Taking the opportunity of good quality planting stock of *mangium* available with RFRI, a five days' awareness cum field training on plantation techniques was organized at RFRI and Demo village during 22nd-25th June, 2009. During the field session, 3000 seedlings were planted in the villages. The growth performance was observed to be astonishing as it attained an average height of 14 ft within 12 months. The fast growing nature has attracted the farmers to plant more seedlings. In view of the high demand, production and distribution of the seedlings is still continued.

The farmers have also got motivated to plant more seedlings by seeing the furniture made out of only 7 to 10 year old *mangium* logs. The finishing quality of the wood has been appreciated by the farmers while comparing with the locally available timbers along with their costs and time of maturity.



Plantation of Mangium in Farmers' fields



A view of two year old plantation

Training on Bamboo Preservation

The cattle proof fencing erected with locally available bamboos has been one of the important traditions integrated with their houses in the village. Apart from this, bamboos are also put on several uses to furnish their houses as well as to fabricate various farm implements. At the same time, because of short durability of bamboo, it was also noticed that the villagers are always on edge while maintaining their fencing, furniture, houses, farm implements etc. with their limitations with time, labor and the local bamboo resources, very often.

To address this issue, the team planned to introduce the bamboo preservation technique patented by RFRI. The institute has modified and improved upon the efficiency of this process of treatment through a newly developed equipment named as **JAGRITI** (for rural use), and PRAGATI (for semi Industrial use). A one day on site training was organized on Oct. 22, 2009 and demonstrated the Boucherie Machine "**JAGRITI**" used in bamboo preservation. Two Bamboo Treatment Tanks have also been installed in two villages as a common facility. The performance in terms of



Demo Session – JAGRITI for bamboo treatment



A farmer with one year old bamboo fencing

durability and advantage of sustained natural color of treated bamboo splits has been primarily observed as very much encouraging. The farmers are using the treated bamboos in fencing on the periphery of their households and homestead boundaries. The treated bamboos are also being used in fabrication of low-cost vermicompost units by the villagers.

Training on tree based food products and value addition

A total of seven Women SHGs are in existence in the Demo Village. Taking into consideration their interest in fruit processing techniques for value addition, a one week training programme was organized for the Women SHGs in collaboration with M/s Megha Food Products at Jorhat in December, 2009. The Women SHGs were made aware about the importance of the existing tree based fruits and surplus vegetables. They were trained to process them through value addition techniques for new products which can enhance multifold income. Looking into the awareness generated among the Women SHGs as a consequence of the training and demand for raw material in future, 500 seedlings of various fruit bearing spp. (Aonla, Carambola, Bel, Orange, Lemon, Kathal, Jamun,



Training on bamboo shoot processing

Litchi, Guava, Olive, Plum etc.) were distributed and planted on their homesteads. The activity was planned and conducted in a participatory manner so that their preferences can be taken into consideration.



Training on fruit processing

Establishment of Bamboo based bio fencing trial

Bio-fencing of *Bambusa bamboos* has been strategically raised around the Gibbon Wildlife Sanctuary to restrict the wild animals particularly the elephants from coming out of the Sanctuary and minimize the incidences of crop damage in farmers' fields.

Bambusa bamboos plants were raised by planting in the boundary in crisscross manner to make it effective to restrict the wild elephants. A total of 1100 plants have been raised so far covering about 500 meters of the boundary line. The bio-fencing is regularly maintained for its faster growth by applying vermicompost and FYM.

Bamboo based bio-fencing



A view of planting activities

The primary observations reveal that the growth performance and survival percentage of the bamboos planted in the months of Aug-Sept were better than those planted in the months of Feb-March.



The bio-fencing at establishing stage

Field demonstration on clump management technique

Young and tender bamboo shoots which are low in fat and high in edible fiber and rich in mineral contents are used as seasonal vegetable in both rural and urban areas in Assam and other NE States. Consumption of bamboo shoots collected from the homestead clumps has been an integral part of diet for all the communities in the villages. Almost like everywhere, the over exploited clumps also in the Demo village are observed to lose their potential for sustainable production of bamboo shoots to fulfill the requirements for self consumption and for livelihood support by selling in the local markets. It was identified as an issue to



Bamboo shoots emerging better in form from treated clumps

address through immediate scientific interventions.

Based on the research experiences and technology available at RFRI on clump management techniques, field demo plots were established on the homesteads with bamboo clumps to demonstrate the effects of different fertilizer combinations and dosages on clump development and intensive shoot emergence. The primary observations reveal that the clumps with fertilizer application showed better results in terms of both quantity and quality of new shoots.

Demo of nursery technique for important bamboo species

The team has noticed the huge scarcity of reliable plant material being faced by various agencies in the region and country. The situation has led towards production and supply of inferior planting stock of unknown sources by various commercial growers. Many times, the suppliers might have also sold the bamboo plants with inappropriate identities instead of their original species descriptions.

Taking an opportunity of planting stock of important bamboo



**Inferior shoots from
Control (without treatment)**



Bambusa wamin

species available in RFRI Nursery, one day training program was organized by inviting 10 participants from Demo Village on September 14, 2010. After complete hands-on training two bamboo nurseries were established and maintained by the farmers. The multiplication technique of some important species like *Guadua aungustifolia* (Timber Bamboo), *Thyrostachis oliveri* (Solid Bamboo), *Bambusa wamin* (Kalash Bamboo), *Bambusa balcooa* and *Bambusa strata* were demonstrated and raised in the two village nurseries. The agencies in the region have demanded for the plant materials and waiting for readiness of the plant materials in sufficient quantity.



Bambusa balcooa

Demo of nursery and cultivation techniques for medicinal & aromatic plants

Some important medicinal and aromatic plants like Isabgol, Lemon grass, Citronella, Patchouli, Aloevera, Kalmegh and Muskdana were raised in the nursery and planted in demo village after giving proper training on cultivation practice to the farmers. Promotion of medicinal and aromatic plant cultivation on their home gardens may provide an opportunity to the farmers in generating additional income in future. By organizing liaison meetings with the local and national entrepreneurs visiting the Demo Village, attempts are being made to provide them assured market linkages.



Aloe vera



Lemon grass



Muskdana



Aswagandha



Isabgol

Promotion of *Gliricidia* shade tree in tea gardens

Seedlings of *Gliricidia* were raised in the Demo village nursery for planting as a shade tree in small tea gardens in the village. *Gliricidia* is a fast-growing, tropical, leguminous tree and has also been used extensively as a shade tree in tree gardens. The activity also aims to provide a good stock of flowering trees as the host plants for honey bee in the locality.



Gliricidia maculate raised through vegetative cuttings

Planting stock management in RFRI Campus

One of the shadehouses of the nursery site in RFRI Campus has been specifically allocated for production and maintenance of stock for valuable planting stock. The plant materials raised in the nursery were supplied to the farmers time to time. The plants includes Alovera, Bramhi, Isabgoal, Ashwagandha, Sarpagandha, Kalmegh, Patchouli, Citronella, Lemon grass, Tokopalm, *Acacia mangium* and important bamboo sps. including *Guadua*, *Thyrsostachys oliveri*, *D. compectiflora* etc.



Planting stock management in RFRI Nursery

Development of bio pesticides for some common insect pests of major crops

To tackle the insect pest problems in home gardens, locally available and suitable plant species were identified for their use in bio-pesticide formulations. The leaves of *Sapindus sp.*, *Melia azaderach*, *Clerodendron viscosum*, *Polygonum barbatum*, etc. were collected and processed for leaf extracts. The bio-pesticides of different combinations were formulated and field trials were conducted by applying in agriculture crops as well as tree gardens like King chili, vegetables, coconut etc. Primary observations reveal better response in managing most of the common harmful insects and pests.



Preparation of bio pesticides



Storage



Field Application

Development of Chili based agroforestry model

At about 25 years ago, the sugarcane and other crops traditionally grown by the villagers were very often damaged by the wild elephants. The severe crop loss led the farmers towards change in their preferences of cropping pattern and land use. Presently, the villagers prefer those new crops only which do not attract the wild elephants and monkeys. Considering the obvious facts, apart from patchouli, the highly valuable King Chili which itself is very effectively used for keeping away the monkeys and even elephants from the croplands in some localities of Assam. The King Chili known as 'Bhut jolokia' is an interspecific hybrid grown in the states of Assam, Nagaland and Manipur. In 2007 Guinness World Records certified the King Chili as the hottest chili in the world.

It was a fact that the farmers had experienced difficulties in growing King Chili in the past due its instant mortality caused by pest and other unfavourable climatic conditions. Realizing the huge income and high demand in local as well as national and international markets, it was planned to promote the crop under tree gardens with suitable agorforestry management techniques. In this connection, the newly raised mangium



Insect - pest problems

plantation was identified as the upper storey component for the agroforestry trial. The existing tree gardens of Arecanut were also considered for introducing King Chili to utilize the interspaces for additional income. The plants were also grown in open condition to compare the performance under the two conditions. And thus, the following agroforestry models were established in Demo Village -

a). King Chili -Mangium Agroforestry Model

An on-farm participatory Research was initiated to introduce King chili as an intercrop with an aim to utilize the interspaces under *Acacia mangium*. The survival of hottest chili was observed to be 16 times better in comparison to the monoculture (survival % increased from 5% in monoculture to 80% under agroforestry after six months). The preliminary data projects an income @ Rs. 8,00,000/ per acre at the end of the rotation period (based on current rate Rs. 200.00 per kg, fresh weight).



Mangium - King chili Agroforestry



b). King chili – Arecanut Agroforestry model

Introduced King chili as an intercrop under Areca nut gardens in the homesteads. The survival of King chili was observed to be better in comparison to the monoculture. The practice of King Chili cultivation in the interspaces of Arecanut plantations could be a sustainable source of additional income. The technical support and materials provided by RFRI. Last year, a farmer could earn an additional income of Rs. 25,000 from King Chili grown within an small area of 5m x 7m (Rs. 715/- per sq m, @ Rs. 200/- per plant)



Arecanut - King chili Agroforestry

Training under Bamboo Composite Centre (BCC)

The newly established Bamboo Composite Centre at RFRI has become operational now. The machines available at the Centre are *Cross Cutter, Splitter, Mat Splitter, Incense Sticks Splitting Machine, Section Cutter, Sliver Machine etc.* The motivated and willing youths from the three villages have been identified for imparting training to be organized in near future.



A view of newly established BCC - Cross Cutter and other advanced equipments

Liaison Meetings:

a) *Liaison meetings with the Local Entrepreneurs*

A meeting of the entrepreneurs visited from Tezpur was held at Demo village for interaction with the villagers. Mr. G.S. Sodhi from M/s Pronaali Pvt. Ltd. visited some of the **vermi-compost** units and placed an order on spot to supply one truck of vermicompost. He also showed his interest to purchase the village based products in future also.



Liaison meeting at RFRI

b) *Liaison meetings with the National Entrepreneurs*

A meeting with entrepreneurs visited from Calcutta (West Bengal) and Tinsukia (Assam) was held at Demo village for interaction with the villagers. Entrepreneurs visited various demo units of the village and interacted with farmers on marketing aspects.



Meeting at Demo Village

Community Organization Activities

The demo village team participated in their festivals and other village level social functions to take an opportunity to disseminate the information on technology available and discuss the future plans and activities. This helped a lot in building rapport between RFRI officials and the villagers apart from organizing participatory activities by inviting all the communities.

Apiculture:

With a basic aim to provide additional income to the families engaged in wood charcoal business, a total of 57 bee hives were distributed after giving them proper training and demonstration of the bee keeping. The villagers have already started to earn income from sale of honey. Honey-bee is also known to the villagers for their helps in pollination of different seed bearing plants in and around the Sanctuary to a great extend. Their awareness on ecological interactions are appreciable as they know that seed settings encouraged by honey bee may be helpful in conserving the biodiversity and managing this unique Wildlife habitat in the world.



Community Organization Activities



Honey Production

Creation of infrastructure facilities for meetings and exhibitions

The Extension Camp has been established to facilitate the Demo village program with a suitable infrastructure for organising trainings and regular meetings, exhibitions and display of village farm products. The Materials were supplied by RFRI along with a mason for technical supervision and work. The villagers contributed their labour and participated in planning and management.

The Camp is also used for conducting community organization activities and village level meetings by the villagers.

Establishment of shade house

In view of motivation of the rural youth towards innovative skills in relation to nursery techniques and experiments, it was proposed to construct a “Shade House” in the Meleng Grant Demo village. The matter was discussed with the members of the Trinayan Unnayan Committee. The land with an area (21m x 10m) was spared by the committee after a mutual agreement signed between RFRI and the Committee. The specifications were also discussed and finalized jointly. To ensure effective



RFRI Extension Camp



Under construction shade house

use of the common facility, the committee has agreed to maintain the shade house and work under the expert guidance from RFRI. The setup is also supported with a vermicompost unit and overhead water tank.

Cultivation of King chili for additional income generation

A total of 10,000 plantlets of King Chili were raised in RFRI and Demo village nurseries and distributed to all the interested families. The King Chili has been introduced for cultivation in their home gardens under various tree canopies to facilitate On-farm agroforestry research. The primary observations of survival and growth recorded from various home gardens revealed that the plants are better in response to shade conditions. The plants are being efficiently managed through applications of *Trichoderma* as bio-fertilizer and bio-pesticides as eco-friendly management of insect pests. The farmers have appreciated the effects and response of the both products and technologies applied/transferred by RFRI in their fields.



The World's Hottest Chili in RFRI Nursery



King Chili at Fruiting Stage



Cultivation of King chili

Raising of Agar (*Aquilaria malaccensis*) plantations

A total of 2000 plantlets of agar were raised as it is in great demand being a major source of resinous heartwood used in perfume and incense industries. The saplings were distributed among the selected farmers. It is planned to transfer the recently developed artificial techniques (presently under process of patent) for inoculation in regard to agarwood formation, in near future.



Raising of Agar saplings in Nursery

Organizing Extension Programme for Technology transfer

A. Training on *Trichoderma* production and field application

A training was organized in Demo village on January 11, 2011 with field demonstration. A group of 35 villagers actively participated in the training. Resource person simplify the technique for production of *Trichoderma* as compost fungus activator. After the training 15 farmers selected for *Trichoderma* production in their own houses.



Training on *Trichoderma* Production

B. Training on seed handling and storage

A training programme was organized in Demo village on January 25, 2011 with demonstration of preservation techniques on seed viability. The main objective of the training was to provide hands on skill on seed handling techniques specially seed grading and specific methods of sowing different crop seeds. A total of 30 villagers were actively participated.



Training on seed handling and storage

C. Training on production and application of bio-pesticide

A training programme was organized in Demo village on January 27, 2011 with demonstration techniques of preparation of bio-pesticide. Farmers themselves prepared bio-pesticide from commonly available botanicals in their surroundings. A total of 35 participants from Demo village attended the training programme.



Training on bio-pesticide

Awareness generation programme

To create awareness among the villagers and the common public, exhibition and plantation activities were organized at the Demo Village on the occasion of **International Year of Forests - 2011** during **21st March - The World Forestry Day.**

During the occasion, the farmers displayed their various products like King Chili and its pickle, honey, Vermi-bed-wash, Vermicompost, bio-pesticides, Trichoderma etc. The details of various technologies and photographs related with their extension to the farmers' fields were also displayed through poster presentation. In this occasion, the six posters were also released by Director, RFRI.



Director RFRI, releasing technical posters during the World Forestry Day

Impact Assessment studies on Demo village activities

A questionnaire supported with guidelines was designed to record socio-economic and existing livelihood details of each household of the villages. The information on the questionnaire was collected by conducting group meetings and door to door survey. The information collected through brainstorming under SWOT for **testing new techniques for their adaptability and sustainability**



A methodology - Integrating SWOT with Analytic Hierarchy Process

were statistically analyzed. A poster prepared on this aspect was presented by the villager in the National Forestry Conference - 2009 at FRI, Dehradun where they could impress the crowd and bag an award.

Our Inspiration: The man behind the success

Working with Communities and the Government simultaneously has been a difficult task for successful implementation of participatory programs. Usually, the success stories of such a program also have some unseen stories of peculiar situations arise while managing with the communities, staff and the superiors. No matter how much we are able, capable and expert in managerial aspects, not a single step could be taken forward if the facilitating authorities are not supporting. Moreover, it becomes more insecure when the Communities are promised but the facilitators are not agreed to. It may be a consequence of misunderstanding and communication gaps among the team and the authorities. In view of the above facts, our Team has been too much fortunate to work under the able guidance, and sustained and continuous support extended by **Mr. N K Vasu, the Director RFRI.**



His vast experiences shared with us time to time on working with the communities in Assam for the last 25 years have been our major tools in resolving the community conflicts and participatory management of the activities.

We are very much thankful to the Director, RFRI for his support and trust over the Team and giving it freedom for execution of the program.

- **Pawan K. Kaushik**

Visits of dignitaries and entrepreneurs at RFRI - Demo Village

Sl. No.	Visitors	Designation
1.	Dr. S. K. Sashidhar	Add. Principal Chief Conservator of Forests, Nagaland
2.	Dr. Mahindra Pal	Sr. Forestry Consultant, NBM, New Delhi
3.	Dr. G. S. Rawat	Deputy Director General, ICFRE
4.	Kameshwar Ojha	Deputy Director General , Ministry of Agriculture, GoI
5.	Shri Ashish Rawat	Assistant Director General , PF, ICFRE
6.	Shri C. M. Dubey	CCF, Research, SFD, Assam
7.	Shri R. P. Singh	Assistant Director General , M&P, ICFRE
8.	Shri R. K. Dogra	Assistant Director General , Education, ICFRE
9.	Shri R. K. Das	DFO, Jorhat Forest Division
10.	Shri Shri Gunin Sakia	ACF, Jorhat Forest Division
11.	Shri A. Gupta and team	ATREE, Guwahati
12.	Shri Alok Shrivastava	Under Secretary, DoPT, GoI
13.	Shri Durai	DCF, TFRI, Jabalpur
14.	Shri Ranjit Bora	Proprietor, M/s Brahmaputra Aromatic Oil Industries, Koliabor Assam

