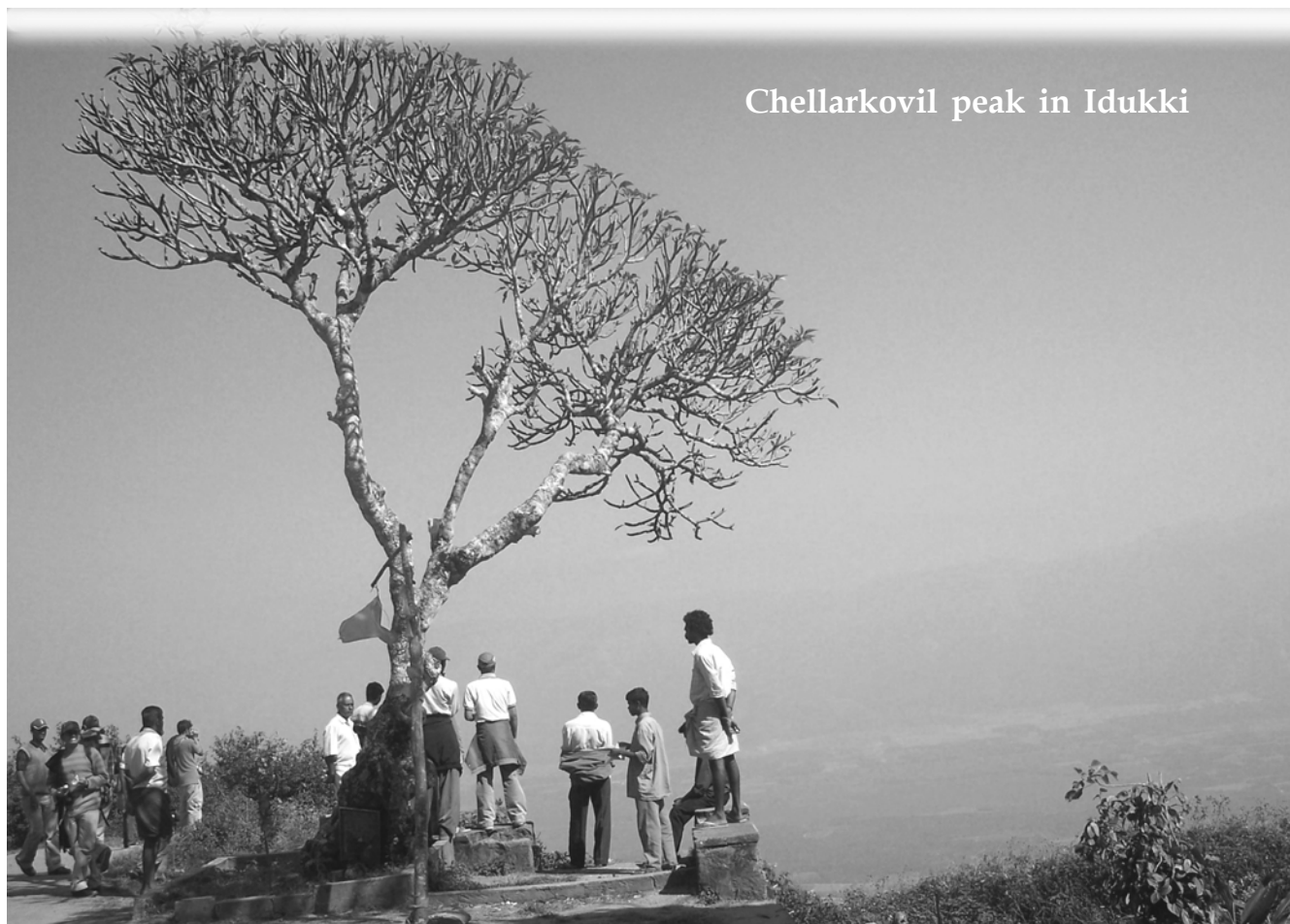


Visiting Wisdom in God's Own Country



Chellarkovil peak in Idukki

A walk of ninety kilometers, rendezvous with seventy odd creative persons, memorable moments of unearthing grassroots creativity and richness in herbal delicacies. Sixteenth Shodhyatra in Kerala had many more things to offer than imagined. Seldom before, we had discovered so many innovation leads impromptu in a road side meeting

Where was a splendid face off with reality in a little known village called Anakara. Around fifty Shodhyatris had gathered in the community hall of Anakara to celebrate the spirit of sustainability and innovation. Two hours after the celebration of sustainability, hundreds of women were mourning the death of the farmers who committed suicide failing to pay off huge debts. The local priests had gathered to counsel the message of hope. The contrast was stark yet telling. It is now obvious to farmers that a model of development that is externally driven, not based on the best resources of poor and does not care for their surrounding environment is not viable. When invited to share our perception of the situation, we tried to link their problem with their inability to see the merit of many solutions in their own backyard. Why has learning from each other become so difficult even when somewhere on the end of their teether ?

If such a collective experience against high input farming is gathering the storm, are we ready with the alternative when hopelessness among farmers is intensifying?

The sixteenth Shodhyatra in the Idukki district of Kerala from the 27th December 2005 to 2nd January 2006 opened our eyes again and again to the world of simple solutions at their best. Is that why these solutions remained obscure or inaccessible and never got on the radar of public extension agencies ? Why should a simple idea of spraying high pressure water with a pump on cardamom plants to wash the external pests not be diffused as a simple low cost solution ? Whose interests could it come in the way of ? The issue of sustainability in agriculture came to fore through the initiatives of KT Thomas, Sabu Verghese and bio-fertilizer prepared by the local farmers but also brought into focus the vibrancy of creativity that exists in the grassroots.



**P Vivekanandan, co-ordinator Honey Bee
inaugurating 16th Shodhyatra**

The Shodhyatra saw the emergence of many green grassroots innovation champions who hold promise for ushering a new paradigm of development based upon people's resources i.e. their unique knowledge system.

Augmentation of a new Methodology: Challenging People's Curiosity

The yatra started from Kumili and ended in Kattapana. The journey covered a distance of about 100 Km and twenty three villages. However, the highlight of the yatra was the street meetings that were organized in Anakara,

Cumbumeetu and Thookupalam. There could have been no better experience for the Shodhyatris than the night meeting at Thookupalam which produced as many as seven new innovations within a time span of two hours. The meeting at Thookupalam was no different from other night meetings organised during the Shodhyatras where people were told about our database. The initial indifference of people at Thookupalam forced the Shodhyatris to pose a challenging question to the assembled crowd- 'have you seen any similar system like the one devised by Trailokya and Champak Bora of Assam where the music can be transmitted without the wires in a room?' There was silence for some time. People wanted us to start the display of multimedia multi language Honey Bee database. But we insisted on waiting till they came out with some example of innovations. Gradually the silence turned in hush and the hush was converted into a flurry of new ideas. Suddenly there were too many activities. One of the persons reported that Tomy, in the vicinity of Thookupalam also practiced the same technique. In response to the Viju Verghese's innovation of disabled friendly driving system in Kumili, Mr Ajith gave information about Mr Ninny, who had also designed a disabled-friendly driving system on the lines of Viju. Mr Ninny was immediately contacted and a vehicle was sent to request him to come to the meeting. His father, Mr Gopi came to the spot with the car and was felicitated. His physically challenged son who designed the system worked as a PCO operator and was busy. Hence he could not come. Mr Sibi Thomas reported about the



Sharing Honey Bee database in a night meeting at Thukoopalam

cardamom drier designed by Daniel, which could dry upto 5000 kg against the 500 kg, which was the strength of the currently available driers in the region. Mr Hari Kumar reported about the innovative windmill of Mr Prabhakaran. Mr P J Mathew reported about the machine designed by George Prakasgram that could separate green and white pepper. Mr Uttaman reported about the innovative vanilla processing unit of Mr Rajasekhar Nayar. Apart from the innovators, all the people who had given information about the innovators were also felicitated on the spot. All these moments of break in presentation, wait for discoveries to be made (holding our breath, for we could have easily failed to elicit any new idea at that moment), pressure to hurry and rush but our insistence to learn from people standing there made everyone feel the ultimate pulse of creativity. If a proof was needed to show that Kerala was a creative society, it was there.

The message was clear from the meeting: you give challenges to people and they will tell you that either it is already solved or will be solved. This is what Shodhyatra aims at: Reviving a sense of self confidence among the grassroots innovators about their knowledge and making their neighbourhood appreciate the value of such knowledge. Seventeenth Shodhyatra confirmed our belief in the process of deriving solutions through collective brain storming and it should be further formalized by strengthening local level lateral forums like 'Shodh Sanka' and 'Shodh Panchayats' as tried in Gujarat.

Innovations par Excellence

So far as unearthing the grassroots innovations and traditional knowledge during the shodhyatra was concerned, sixteenth Shodhyatra was no exception. As many as seventy two innovators and traditional knowledge holders were felicitated during the course of the yatra. In Mannakudy, we felicitated Viju Verghese for designing a disabled friendly driving system, where all the essential functions of a car like using brakes, gears etc. that need foot support can be performed by hand. During the felicitation ceremony at Mannakudy, Viju was seated outside the community hall in his car and the Shodhyatris reached out to honour him. In Thookupalam a similar driving system was found. It was also designed by another physically challenged person called Ninny. In Kumili, Ms Valsamma Thomas was felicitated for her unique anti-dandruff oil. In fact, the effectiveness of the innovation can be gauged from the fact that the oil is going to be commercialized by a Chennai based company very soon.

'Cardamom Wonder'; a high yielding indigenous variety of cardamom innovated by Elecy and Sabu Verghese attracted a lot of attention of shodhyatris. The variety was initially spotted by Elecy, the wife of Sabu Verghese

and later on it was improved by Sabu. Feature-wise and production-wise, the variety was considered as superior. His innovation has also been accepted by National Innovation Foundation for the next round of competition. Sabu has already distributed 20,000 clumps to the farmers in Kerala and Karnataka.

While felicitating the herbal healers (Mr Damodaran, Mr Pooneseriyil and Mr Anthony Mathews) at Nettithozu, it was realized that *Ayurveda* is not simply a system of codified medicine but a living tradition in the villages of Kerala. One of the herbal healers, Mr Anthony Mathews said that the secret of longevity lies in taking proper diet and he suggested that an ideal diet must have 80% alkaline and 20% acid. Another interesting innovation was that of 'dehusking machine' devised by Mr George Mathew. The machine separates husks from rice using an electric table fan. The innovation of Benny Thomas in plant variety section was equally interesting. He had developed a high yielding variety of pepper by cross breeding two varieties of pepper. We came across many small and large useful innovations that came up during the shodhyatra in Kerala. Most of the technologies were low-cost, efficient and environmental-friendly.

Competitions for awareness on biodiversity

Like all the previous Shodhyatras, bio-diversity and recipe competition were organised among children and women respectively to spread the awareness of conservation, diversity and ecological ethics. More serious and threatening than the erosion of the natural resources is the 'erosion of the knowledge' because it is the knowledge that provides institutional framework for the management of natural resources. Biodiversity and recipe competitions aim at stemming the knowledge erosion by acting as 'knowledge dams'.

During the *Shodhyatra*, bio-diversity contests were organized in three villages, whereas recipe contests were organized in two villages. In total there were ninety six participants in three bio-diversity competitions. The student participants knew 2631 plant names and had brought about 2355 plant samples. Geethu Gopalkrishnan, a student of class IX, who stood first in the bio-diversity competition held at Anakkara was outstanding in her effort. She knew the plant names of around 65 plants and had brought with her all the samples. What was astonishing about her was that she could name any plant with detailed usage information without looking at her texts. She also told what kind of precaution one should take while taking the plants as medicine. The show stealers in the Cumbumeetu bio-diversity competition were a group of nine students, who collectively knew 150 plant names and uses and brought the sample of 170 plants, highest number by any participant(s) during this *Shodhyatra*. The children



Biodiversity competition organised in Cumbammetu high school

demonstrated the ethics of collaborative learning that has been missing from our educational system for a long time.



Recipe competition brought out outstanding knowledge about biodiversity among women

Recipe contests were held in two villages viz. Anakkara and Cumbummetu. In total, there were 26 participants with 30 recipes. Several local recipes made from less cultivated crops or crops with medicinal values like 'nelika karbichar', 'puwakachar', 'sukien' were on display. The significant part of the contest was that many of the recipes were ready to be launched in the market with some amount of value addition. NIF, in association with the local SHG groups would take up this activity soon.

Learning in the laboratory of life

Learning in most of our lives has been quite *fait accompli*, structured and regulated. The educational environment around a child hardly encourages him to be creative and think out of the box. *Shodhyatra* deconstructs the whole process of learning and encourages the participants to learn from the 'laboratory of life' (as Dr R A Mashelkar, chairperson, NIF). *Shodhyatra* provides both horizontal (peer learning) as well as vertical (from elders) learning space for the yatris.

On the way to Puliyanmala, the *Yatris* stopped to interact with a farmer, who manually pollinated vanilla (*Vanilla Planifolia*). Originally, a crop of central Mexico, the crop is self-fertile but incapable of self-pollination (a membrane separates the male or anther and the female or stigma of the vanilla fruit). The method included using



In pursuit of perfection: A Blacksmith giving final touch to a sickle

a needle, to fold back the membrane separating the anther and the stigma, then pressing the anther on the stigma for pollination.

As the *Yatris*, walked along, they stopped at the house of a *Vaidya* (Traditional Healer), Mr Chakochen, where

along with many plants, he used aroma therapy. His house was like a grassroots botanical garden. He showed the *Yatris* a variety of plants whose leaves emanate aroma of several spices. The spectacle of a blacksmith giving temper to the sickle was both rapturous and painful. It was rapturous because of the sheer amount of concentration that the blacksmith was



Manual pollination process of vanilla

devoting and it was painful because everybody knew despite a day of uninterrupted dedication, he will earn nothing but a paltry sum. Most probably, the blacksmith himself knew that all his efforts will only fetch him a day's subsistence but he reminded the yatris that perfection is not determined by award, appreciation or approval. Zest for perfection is a way of life that depicts the constant striving to reach pinnacle despite of low gains. But if not award, appreciation and approval, then what makes people pursue perfection? There was no answer for the yatris. The question still lingers.

On the way to Kozhitholu, the yatris met Mr Thomas Myladyil and his wife Thresiamma who developed an organic bio pesticide from arrowroot (*Maranta Arundinacea*). Traditionally arrowroot is grown in coconut farms for avoiding the pests and termites. The tuber of the arrowroot is ground several times with water. The water collected after the grinding is diluted and sprayed as pesticide. It is widely believed that the tuber contains cyanide and the decanted water contains the toxics which help in controlling pests. It was indeed ironical that a few kilometers from his house, farmers had been committing suicide consuming the pesticide and an environmental friendly and effective bio-pesticide has remained unknown.

Some Random Reflections

Every morning of Shodhyatra began with all-religion prayer and concluded with some kind of reflection on

daily learning, community experience, future challenges etc. During the shodhyatra, the reflective night meetings evoked spirited participation from Shodhyatris on such issues as traditional methods of conflict resolution, traditional methods of education, and complaints of young generation over the older generation etc. Yatris had their own light moments: a bitter defeat in tug-of-war from the local youth, a trek to the hills of Ramkelmeetu, an educational approach to New Year celebration etc. 'Before attending shodhyatra, I thought what I knew about farming, veterinary diseases was enough. But now I realize, the vastness of the things that I am yet to learn' expressed Vajubhai Bala, young farmer from Saurashtra, Gujarat. Shodhyatra created a kind of dilemma in the minds of many. Sense of satisfaction over getting to learn something that previously they did not know was contrasted with the feeling of restlessness over the thought that there is so much to be done for furthering the cause of grassroots creativity.

The *Shodhyatra*, as confessed by several *Shodhyatris*, taught several lessons: from the importance of outstanding standards of cleanliness observed in Kerala villages to the knowledge about the importance of organic farming, *ayurvedic* perspective on sustainable health and victory of will power over odd circumstances as exemplified by Viju Verghese and Ninny. The learning basket of the *Shodhyatris* is still half empty; for learning is not only iterative but life long.

No More Faceless



Sivaprasad explaining his new ideas

Sivaprasad, a tailor, who is educated till class X, has thought of a system whereby rockets can be launched from the ship and it would be remote-controlled from the ship itself.

Susheelan, an electrical wireman from Kerela has designed a device where

the wall clock can indicate through sensors attached to a rode, the water level in any overhead water tank. The materials used in the system include capsules contact sensors (electrical), LED indicators; a transformer, rectifier, power supply, electrical starter system, signal system, mechanical cut off system, float and DC bell. The float makes contact with the sensors immersed in the overhead tank as the water-level rises. The starter signal system makes the motor turn on or off according to the status of the water level, sensed by the sensors. The sensor signals



Susheelan addressing the shodhyatris

are transmitted to LEDs in the clock indicating the water level. Moreover, if there is any problem caused related to foot-valve, a red LED glows and indicates an error in operation. Thus, the system can indicate water level with high resolution and act as controller effectively. It can be used in homes for controlling

level of water of overhead tanks. The cost of the device is Rs 1,500. In comparison to other products available in the market, it is very simple, cost effective, hybrid system (comprises features of mechanical and electrical system) and has flexible resolution.

Viju Verghese, a physically challenged person has designed an innovative disabled friendly driving system, for physically challenged persons in the lower limb. The innovator has modified the existing wagon-R model to make it suitable for physically challenged. The one who do not have one or both legs can use this car efficiently. The modifications made are in

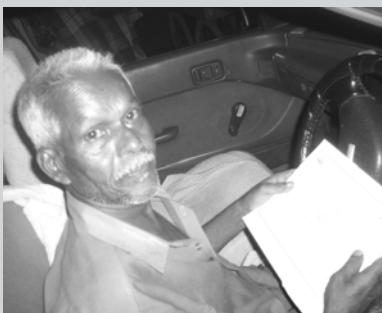


Viju Verghese with his disabled friendly driving system

breaks, clutch, gear and accelerator. All these controls are modified in such a way that these can be operated by hands. Controls are transferred to hand by use of leverage and linkage

mechanism and/or using the concept of existing system. The modified brake is operated by the middle as well as adjoining finger by pushing the brake lever downwards, which is connected to the brake pedal of a car by the two wheeler brake wire as a connecting mechanism. The clutch is operated with a palm. When clutch lever is pushed downwards clutch pedal is pushed and disengagement of clutch take place and to engage the clutch, lever has to be released gradually. This action is also transferred by use of two wheelers brake wire cable. The accelerator is operated with forefinger by pressing the accelerator lever downwards similar to hand operated brake lever. The system can be fitted into any model of car and the incorporation cost ranges between Rs 4000-4500/-. The repair kit for the system is quite easy and ergonomically also the system is comfortable.

In Thookupalam, we came across Ninny, another physically challenged person who has also developed a disabled friendly driving system. Ninny has used simple iron rod connected to foot levers of existing controls to transfer the controls of accelerator, brake and clutch to hand. Controls are transferred to hand by use of simple iron rod connected to the existing foot pedals. This is mounted under the steering with the help of clamp fitted on the steering shaft. Brake, Clutch, Accelerator and Pedal are operated by pushing the corresponding iron rods downwards by hand. Cost of this attachment is hardly Rs 750.



Gopi, father of Ninny who also designed disabled friendly driving system

The 'cardamom Wonder' innovated by Sabu and Elecy Verghese has a panicle, which is double the size of the normal length (2.5 ft), with pods ranging from 35/40 per panicle. The variety has

three panicles per plant. Each kg of dried cardamom includes 4500 pods against 6000 of the normal variety. The average yield of the plant is about 4



Sabu Verghese with his 'cardamom wonder'

- 4.5 kg compared to the normal yield of 2 kg. He has already distributed 20,000 clums to the farmers in Kerala and Karnataka.

Can you imagine how tough, time consuming and some time inefficient it can be to manually separate hay from the paddy? Very often the method used results traces of hay in paddy. Some people put on the table or ceiling fan and pour down the paddy from top and the wind segregates the hay. But very few would have observed that the amount of air available to separate hay from paddy is usually in excess to the air required. This means that the excess air is nothing but loss of energy. Mr George Mathew has worked out a solution keeping the advantages of both the system in mind. It uses the pouring technique of the paddy and fan air to separate hey. The machine is like a long tube with three passes. In one of the passes, the fan is fitted and the other two passes at the end collect rice and husk respectively. The fan helps to separate the husks from the rice. He has also designed a rope way to transport the hay from one side of the dwelling to the other. The machine not only performs its function effectively but also saves energy that would have been wasted otherwise.



George Mathew in action with his winnowing machine