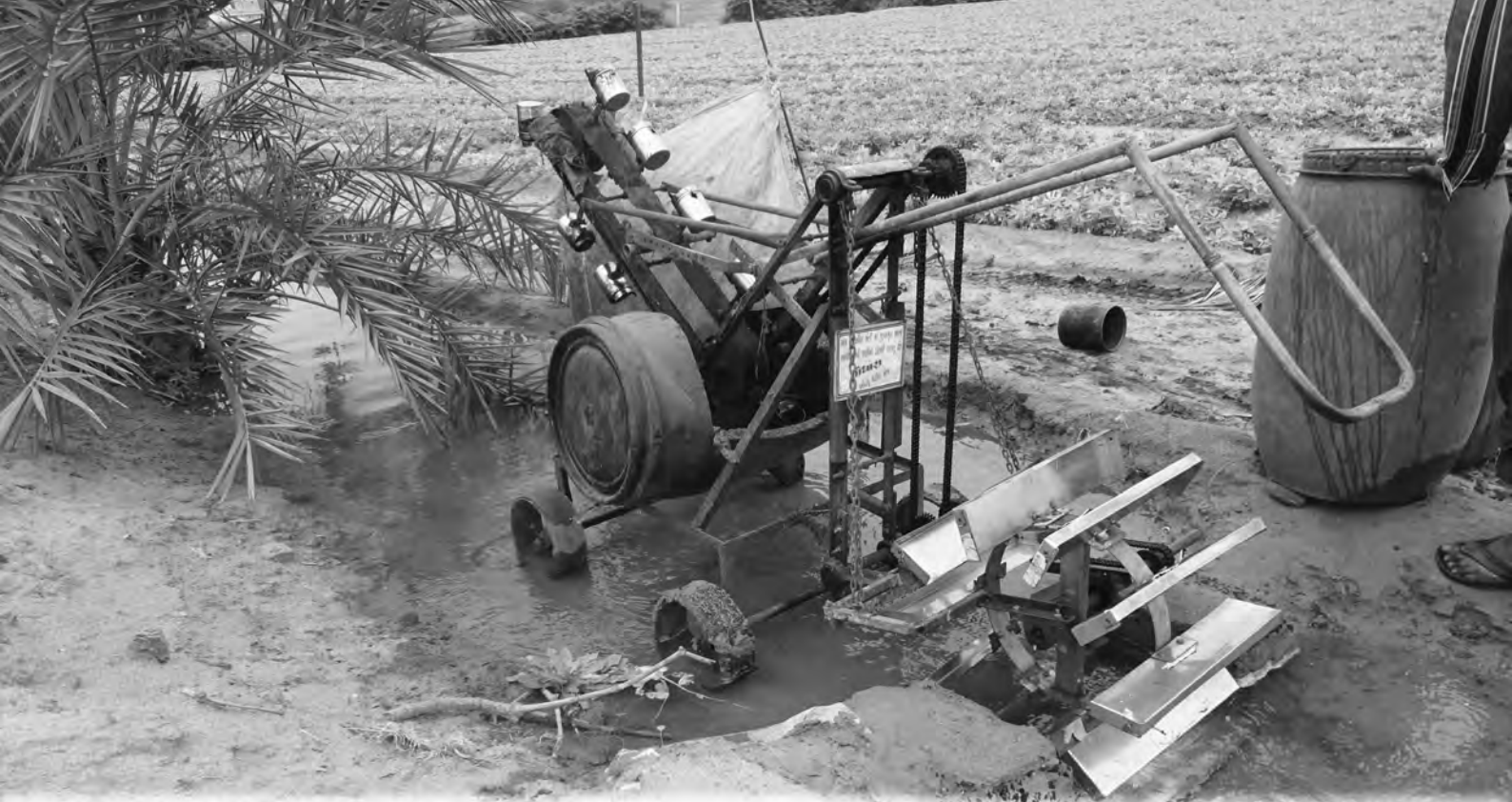


The 42nd Shodhyatra: Blooming deserts or forlorn fields: Walk through Kutch, Gujarat (Bhuj-Anjar-Raapar)

The shodhyatris had returned to Kutch for the third time in a span of twenty years. Their earlier visits were a part of the 1999 Nilpar-Nani Khakar yatra and the 2001 Dabhuda-Sarasala, Rapar Taluka yatra, both were initiated to help in the pre and post-earthquake understanding of disaster impacts and rehabilitation of infrastructure. On revisiting some of these villages, shodhyatris observed the changes that had happened over the years. One of the most striking part of the yatra was the discovery of various innovations displaying a vibrant and experimental ethic. Some of the pastures were completely encroached by the Prosopis juliflora and other weeds. Interacting with the farmers who were now old, but still remembered their visit of yesteryears was a rejuvenating experience. During the post-earthquake shodhyatra of 2001, the yatris had witnessed many collapsed schools and houses. Now the conditions of the schools had improved as there were more pucca houses. A few schools were spotted with a variety of learning materials for children along with cooking gas connections. Despite all this, most walls were still left bare waiting to be adorned by education and inspiration.

SRISTI in collaboration with other Honey Bee Network institutions, organised the sharing of prior knowledge and innovations while journeying in pursuit of traditional knowledge and creative contemporary innovations. It all began with an interactive section with the students of Gandhian institute, Gram Swaraj Sangh at Nilpar. Several innovative farmers, artisans, cattle rearers and school teachers came out with novel ideas in an effort to resolve their day to day problems.

When shodhyatra's first journey started from Nilpar's Gandhian ashram school 20 years ago, the yatris reached the next village fairly late at night. On their way, they saw deep sand dunes and undulating terrain. This time the terrain had transformed. More water was available and irrigated fields were interspersed with large fallow patches. This transformation was quite evident. Dinesh Bhai, the coordinator of Nilpar Ashram also owns a personal farm where he grew vegetables through a conventional chemical input based agriculture. He also owns an organic farm growing dates and papaya. The declining water table was a matter of serious concern.

Creative children

From Maitribari, the shodhyatris headed towards Palanpur village. On the way yatris noticed patches of cultivated and irrigated fields with vast stretches of dry land. A meeting was conducted at the village school to learn about their livelihood strategies.

Idea competition among children

The students in the local school shared some traditional remedies such as the use of goat milk to cure kidney stones and basil juice to help with pain in the ear. The yatris appreciated a working model of a soil crusher designed by a student, Mahesh.

Naresh, another student aged five astounded us with his creativity. His vision was to use wind energy for compressing air to run pumps and fill air in vehicle tyres. Naresh, from class one was the third youngest student to showcase such a brilliant idea. Earlier, two other young students from Tamil Nadu were recognised with Dr A P J Abdul Kalam IGNITE awards by the NIF.

It is not an uncommon sight to see the driver and a nurse of 108-ambulance struggling to lift an accident victim off the road to rush to the hospital. A concerned Krish from class six suggested a stretcher having a jack-like lifting mechanism which could save many lives. In relation to the same circumstances, Vikas, also from class six, shared his views that in case of an accident an automated message should go out to the 108-ambulances. Harsh, an eleven year old was extremely concerned about the bird injuries caused by kite strings. He suggested coating the string with bird repellent to be made mandatory for every string manufacturer.

Care for injured birds and humans was so evident in their ideas. We wish we could absorb a little more empathy from our children so that our society grows into a more kind and compassionate one. Everyone notices that sometimes children watch TV from a very close distance and refrain from wearing spectacles even when they should. Ramdeo Kinji Bhai, a class eight student was keen to see a system where the TV automatically switches off if someone is sitting too close. Working on it did not sound a difficult thing to achieve technologically. Many more impressive ideas were put forward by the creative children. Some were very practical but not so new anymore. They had been discussed by children before. But it was innovative for the little idea givers. One way to promote originality and innovativeness along with empathy and social sensitivity is to share the list of awarded ideas with every school. Teachers may share these ideas with children overtime, thus slowly but steadily increasing their awareness. The ideas may be painted on the wall or posted on the notice boards. The problem is that we pay little or no attention in igniting the creativity of children. Though the Inspire-Manak program calls for ideas from about half a million schools, it restricts the sharing of ideas with all the schools. The NIF shares many ideas through the district level workshops but the problem remains evident at the higher

Display of poster exhibition

education level. This is why SRISTI made a database of more than two lakh engineering projects pursued by over five lakh engineering students at techpedia.in. A similar database of children's ideas will be developed by SRISTI to create widespread awareness among children making their ideas more original and accessible.

GIAN will work with SRISTI and voluntary fabricators, designers and other volunteers of the Honey Bee Network to try and convert some of these ideas into functional products with the help of NIF's fab lab and SRISTI's natural product lab.

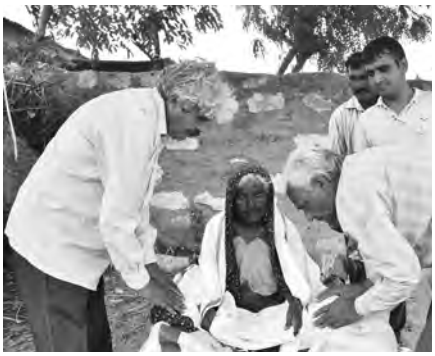
(Children should not be considered as just a sink of sermons, but also a valuable source of ideas. We hope the Education ministries of different states are paying attention to this message so that Indian renaissance can be accelerated by making children an active partner in the country's progress. Unlike our generation, they will not choose to live with unsolved problems. Let us get ready for a new, invigorated and youthful India. Ed.)

Ramjibhai documented a variety of traditional practices for treating domestic animals. It was suggested that the elderly people of the village should be invited to the school once a week to share their experiences. These expert seniors who had seen life for close to a hundred years should be honoured for their time tested experiments. One could learn a lot from their sustainable lifestyles. The competition also saw children receiving awards for their ideas and attempts to conserve the local plant and animal biodiversity. Babujibhai Meghji Shah (a parliamentarian and former state Finance Minister for Rapar) in his address to the students said that the children who were unable to access schools earlier, are now becoming engineers and doctors proving that there has been a considerable improvement in the level of education.

On the way to Ghagro village on the 21st morning, the shodhyatris stopped at a small hillock to have a discussion about the village school curriculum. Given the chance and required resources, every child has the potential to do research. Dharamveer, an innovator of multipurpose food processing machine spoke about a child from Haryana who had designed a cycle that can wade through shallow water. An invention like that could be extremely useful in flood hit areas, especially during peak monsoon in eastern India. It was emphasised that children should be encouraged to work creatively on their own.

Jadsa village, the next halt of the shodhyatris, faced an acute shortage of drinking water because of the salty ground water condition. Private supply of water was scarce and expensive as the supply from Kanthkot reached the village only four times a month and the tankers supplying Narmada river water charged INR 1000. It was suggested that check dams might be an effective solution. The villagers offered an argument that the INR 62,000 sanctioned by the government under the Sujalam Plan was not enough for the construction of such dams, rendering the idea unfeasible. After the felicitation of the centenarians and other elderly villagers, the idea and biodiversity competition held in the school brought forward some new ideas from the children. Shetal Rameshbhai highlighted that Neem (*Azadirachta Indica*) and Bor (*Ziziphus* jujuba) have a multitude of medicinal properties. At the conclusion of the competition, a globe and a traditional knowledge register was presented to the school. In addition to this, thirty-five posters and a bundle of herbal ointments along with several kits of plant pesticides were also donated.

After Jadsa, the shodhyatris headed



to Kanthkot village where the village sarpanch recounted the 2001 shodhyatra and mentioned that Aakdo (*Calotropis*) which was used in several agricultural practices was successful in all its trials. In his address Chetan Patel explained that one of the goals of the self-sponsored SRISTI shodhyatras was to upgrade and supplement the indigenous knowledge systems. He further added that information will travel from one village to another by means of shodhyatris, thus benefitting all.

A biodiversity contest was held in Kanthkot where many talented children were awarded. Prof. Gupta suggested that small enterprises, which may initially be funded by GIAN and SRISTI should be set up in each village. It was also decided that the villagers would file an affidavit to become legal protectors of the forests around them. The children brought the discussions to a close with a musical recital and prayer.

In the next meeting, innovator Dharamveer Kamboj suggested that small village-based industries should start making prototypes of improved farm machines. SRISTI/GIAN offered to invest one-third of the cost, if required. When the farmers said they wanted to grow cash crops with higher returns, Marubhai suggested to grow Guggul. He suggested that Guggul grows naturally in the region and is a good source of gum in the Kutch and Bhachau region. It is an economically important plant used to make soaps and insecticides. It is a slow growing plant that requires less water, thereby proving it to be a suitable crop to grow in the semi-arid regions of Kutch.

Marubhai was therefore successful in getting many farmers interested in growing his crops.

The next morning the shodhyatris proceeded to Vamka village. An idea competition was conducted for the children where they came up with many creative ideas. One of the most impressive ideas was for a bird feeding cage which would close automatically when it started raining. This would protect the feed which would otherwise rot due to rain entering the cage. The children also stressed on the importance of regular cleaning of the feeding tray in the cage.

The discussion about traditional knowledge of the elders dwelling in the village regarding local plants brought forward many of their unconventional uses. For example, the extract of *Calotropis* increases productivity of many crops and the mix of animal milk and Satavari (*Asparagus racemosus*) is an antidote to anaemia. A juice extracting machine designed by Dharamveer Kamboj which could effectively extract juice from Neem, Tulsi, Shankhpushpi and Aloe Vera was also exhibited.

Roadside meeting

Hamirbhai, an innovative farmer from the neighbouring village Mahe spoke about his success in date cultivation through organic farming. He applied cow dung and cow urine as manure in the irrigation channels in his field. He prepared a solution of *Calotropis* and buttermilk and kept it for 15 days for fermentation. It was then given to the date plants, eliminating the need for chemical pesticide for its growth. Hamirbhai proudly reported a profit of twenty lakh rupees from his eight acre farm. He had been nominated for the President's Award for his achievements.

Innovations by the farmers and cattle rearers of semi-arid regions of Kutch, Bhuj

Mahavirsingh Jivansingh Jadeja from Bhuj practices organic farming. He mixes old unused millet flour- 10kg, neem leaves- 10kg, 'Aaakdo' (*Calotropis* leaves)- 10kg, Cow urine- 10litre, Cow dung- 10kg and Jaggery- 3kg with approximately 200 litres of water and uses the mixture to irrigate the fruit orchards. It adds to the soil fertility and hence increases crop production.

Natubhai Gelubha Jadeja uses organic pesticide to control the Kali Galo (Aphid infestation) of cumin plants. He mixes equal quantities of 'Arni' (*Clerodendum phlomidis*) and Custard Apple leaves (*Annona squamosa*) – 10kg in total with 50 litres of cow urine. He then dilutes the mixture with 100 litres of water and sprays it on the infested crop at an interval of ten days.

Valjibhai Veljibhai Bhudiyaa from Nawavaas, Bhuj achieved considerable success by using a mixture of 'Aakdo' leaves (*Calotropis*), cow urine and citric acid. The formulation has a mixture of cow urine and soil from the base of a baniyan treen in proportions of 10 litres and 25 kg respectively. It is then diluted with old jaggery that's already mixed with water, making the overall solution to be 200 litres. The solution is left to mature for a week with occasional stirring. It is then diluted and used to achieve better crop productivity and discourage the growth of harmful soil microbes.

Motibhai Amsibhai Koli, a cattle farmer from Ramvav, Bhachau treats animals suffering from fever with a combination of Neem Leaves (*Azadirachta indica*), Fennel seed powder (*Foeniculum vulgare*), powdered crystallilne sugar and water in proportions of 300 gm, 150 gm, 100 gm and 500 ml respectively. The solution is filtered and administered orally once a day. It may also be useful for treating animals suffering from oral ulcers.

(Scouts: Mahesh Parmar and Ramjibhai Dabhi)