

Cyclone Thane hits Auroville

On Friday December 30, cyclone Thane hit the states of Tamil Nadu and Pondicherry with heavy rains and wind speeds of up to 135 kmph (83 mph) and tidal surges of up to 1.5 metres (5 feet). The cyclone slammed the coast from Chennai to Karaikal. The Villupuram district is among the worst hit as the cyclone's eye was between Cuddalore and Pondicherry.

Auroville was in the midst of Thane's direct fury, leaving widespread devastation in its trail. Thousands of trees have been uprooted or decapitated; houses, schools, offices, industries and public buildings were damaged due to heavy winds and falling trees. While the Matrimandir itself was not damaged, some branches of the Banyan Tree were broken off and in the Matrimandir gardens and around it, many trees fell down. The Matrimandir Nursery suffered heavy damage, with many trees fallen over. Also the gardens of Savitri Bhavan, the Visitor's Centre and Bharat Nivas suffered heavily, though there was no damage to the buildings. In Sadhana Forest and Sve Dam communities, many keet houses were destroyed. In the new Luminosity community, the louvres of the new building warped in the winds, leaving the glass windows behind them to face the full impact of the hurricane; many shattered. In the Samasti and Grace and Surrender communities, almost all the beautiful ornamental trees fell down. In Madhuca, the tile roof of one of the houses blew off, while in Certitude, a couple narrowly escaped certain death by leaving the house a few minutes before a tree fell down on their house, with a major branch landing on their bed. For the Auroville beach communities, the situation was judged worse than the 2004 tsunami, with high waves compounding the damage caused by falling trees. The Auroville farms suffered heavily, with one farmer complaining that 40 years of work has gone, with uprooted fruit trees and crops being severely damaged. In the Auroville forests, many many trees have fallen. In the Greenbelt, most of the windmills have been destroyed. The commercial units suffered as well. The office of Upasana suffered a direct hit from a falling tree, while the office of Auromodèle Atelier was narrowly saved with the tree falling in front of its entrance. In the villages around Auroville, the damage is similar. The landscape which Auroville has been at great pains to build over the last 40 years has been disfigured and mutilated.

In the evening of that day, when the storm abated, many Aurovilians were seen trying to find their way on roads covered by fallen trees and debris. "I got lost," said a long-term Aurovilian, trying to get from Surrender to the Dana community. "The road had disappeared."

On December 31st, the work of clearing the main roads and making an inventory of the damage started. The sound of chainsaws could be heard all over Auroville. Many Auroville youngsters and others were seen clearing main roads and pathways and helping Aurovilians in other communities. The spirit of communal service was strong and many felt a joy experiencing this – a reminder of the old days of Auroville. Chainsaws being in short supply, residents were seen using ordinary saws and cutties, trying to clear the entrances and internal pathways of their communities. Certitude was heavily hit, with most of the Eucalyptus trees that line the entrance road having fallen over. The well-known Eucalyptus Grove, opposite the turn to Samasti, no longer exists with only a few trees left. Some of the Aurovilians living in the greenbelt had literally to hack their way out of the forest.

This is a state of emergency. Some communities suffer from the lack of water supply. There is no mains electricity. The specialist estimate that emergency electricity supply will not be provided for three weeks; the ultimate repair of all electricity lines, with over 30 high tension and all low tension lines being destroyed, is expected to take up to 3 months. Some telephones work – but most do not.

Assessments of the damage have started coming in. At a first rough estimate, the immediate emergency relief would need Rs 4-5 crores (approximately US \$ 1 million). The estimates for long-term rehabilitation and restoration will run into multiples of that. The detailed assessment will be undertaken after the emergency phase is over.

More photos can be seen on page 7 and at www.auroville.org/index/cyclone.htm. For information contact cyclonehelp@auroville.org.in



Top: An uprooted tree hit the front building of Upasana. Below left: almost all the Eucalyptus trees lining the entrance road of Certitude have fallen. Below right: many electricity poles snapped: electricity will not be restored for at least three weeks.



A call for help

The Auroville community asks for financial help, which is most urgent. Please make a donation for Auroville Cyclone Relief.

Checks mentioning Auroville Cyclone Relief can be sent to Auroville Unity Fund, Town Hall, Auroville 605101, Tamil Nadu, India.

Bank transfers from within India can be made to State Bank of India Auroville Township, IFS Code SBIN0003160, account name Auroville Unity Fund, account number 10237876031, reference Auroville Cyclone Relief.

Bank transfer from abroad can be made to State Bank of India Auroville Township, Branch Code 03160, Swift Code SBININBB474, account Auroville Unity Fund, account number 10237876508 reference Auroville Cyclone Relief.



A fallen tree at Auromodèle Atelier

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Exploring new ways of education

The Auroville Educational Resource Center, better known as Isai Ambalam School, is one of Auroville's outreach schools for village children whose motto is 'educational innovation'. Over the years its work has become successful – in fact so successful that some of its methods are now being practiced in over 30,000 schools in Tamil Nadu.

“Today nobody will dispute that India is emerging as a knowledge power,” says Subash, the 66-year old headmaster of Isai Ambalam School. “But, sadly, it is also indisputable that more than 50% of its population is still illiterate. The situation is particularly distressing in rural areas. Even though the Indian Government has passed a ‘Right to Education Act’ and enrolment in the schools is becoming larger every year, the education given to rural students, even though better than before, is still inadequate.

“This problem was already articulated by The Mother herself. In a conversation she had with some teachers of the Sri Aurobindo Ashram School in 1967, she had wondered ‘how to prepare the children who have no way of learning at home, whose parents are ignorant, who have no possibility of having any means to learn, nothing, nothing, nothing but the raw material, like that – how can we teach them to live?’ And she had added, ‘That will be an interesting problem.’”

Auroville began tackling the problem in the late 1970s and the early 1980s, when a number of schools were started for children and youth from the surrounding Tamil villages. One of these was Isai Ambalam (meaning ‘Place of Harmony’), started in 1979 by Ivar, a Dutch Aurovilian, who was moved by the plight of the young adults in the surrounding villages who were either illiterate cowherds or school dropouts. Other schools were Ilaigarkal, which provided learning space for village youths working in Auroville; Arul Vazhi, which provided a ‘spiritual space’ for village children attending government schools near Morattandi village, by giving evening classes; New Creation School, which concentrated on children from Kulapalayam village; and various night schools that catered to the educational needs of the children in about 15 villages around Auroville.

To staff these schools Tamil teachers were recruited; but many of them did not have adequate education or any special training. By the end of a decade it was found out that most of the children attending Auroville Tamil schools were good at sports and games but had not learned to read or write sufficiently well in Tamil, had poor maths skills and had not learned to ask the ‘why’ of anything. Many of these students ended up in low-paying jobs.

“The problem was largely due to the system of education that was used, which is still prevalent in India. This system is teacher-centred and involves rote learning of prescribed textbooks, followed by examinations. Marks given for the right answers become the basis for assessing the learning ability of the student. But in this process, the child’s real learning ability gets lost. By the time they complete their formal education, they are drained of all the freshness and curiosity with which they started.”

The Auroville outreach schools intensified their efforts to improve and discover new educational systems. Formal educational curricula, syllabi and methods of teaching were gradually dispensed with while educators explored what the child should be learning. All agreed that the basic things – languages, basic maths, science topics, basic general knowledge, developing physical skills and some vocational skills – should form part of the curriculum, at least for the Tamil village children. But it was also felt that education should try to implement the educational principles formulated by Sri Aurobindo. These are that nothing can be really taught to a child, everything is inside the child, the teacher’s role is to help bring it out; the education of the child should take place with its consent, the child should not be compelled to learn; and while learning the child should move from the near to the far, from the known to the unknown, from the simple to the complex.

In the process of evolving this ‘curriculum’, many Western educational methods were brought in by numerous educationists and volunteers, and many of them were adopted. From being primarily teacher-centred, the education shifted to being student-centred. The teaching strategy focused first on finding out what the learning level of each student is and what he/she needs, and, ideally, then designing an appropriate learning programme for that child. It was found that the implementation of this learning programme could be made



Teacher Tamilvani using flash cards to teach Kindergarten children

the joint responsibility of both the teacher and the student. The teacher should not try to ‘teach’ everything to the student; instead, the focus should be on the student acquiring the skills of self-learning. To test the students, appropriate assessment procedures were developed to identify the strong and weak points in their learning so that weak points can be strengthened and the strong points fostered.

The Glenn Doman method

“At Isai Ambalam, a number of major innovations were successfully experimented with,” says Subash. “One is the ‘Glenn Doman method’ which is used to teach 3 to 4 year old children to read well before completing their fifth or sixth year. In this method, topics interesting to the children are written in Tamil and English on cards. These cards are briefly shown to the children in a systematic manner – hence the term ‘flash cards’. While showing the cards, the words are pronounced in a clear and loud tone. A small book with 4 or 5 sentences using these words is prepared, and the book is shown to the children after the cards. Initially this is done about 10 times. In this period the children come to recognise and remember all these words, but without any of the letters constituting the words being taught separately. Once the children get accustomed to the method, the frequency of showing is reduced and it becomes possible for them to recognise and remember words they have seen and heard only twice. After acquiring the ability to recognise a good number of words, they are introduced to individual letters. Thereafter they very quickly acquire the ability to read fluently.”

Glenn Doman, explains Subash, was an American physician who more or less stumbled on his method during his professional work with mentally-retarded children. The method was later successfully adapted for normal children with stunning results. For Subash, the amusing thing is that Glenn Doman had come upon a method of teaching that Mother had recommended. ‘Generally, for spelling, one must take the help of the eyes. Each word should have its own form, which the eye remembers. Visual memory is more useful than mental memory. One should read a lot – see, see, see, on the blackboard, in books, on pictures. And as for style, gender, and grammar too, the best thing is to read, to read a great deal. In this

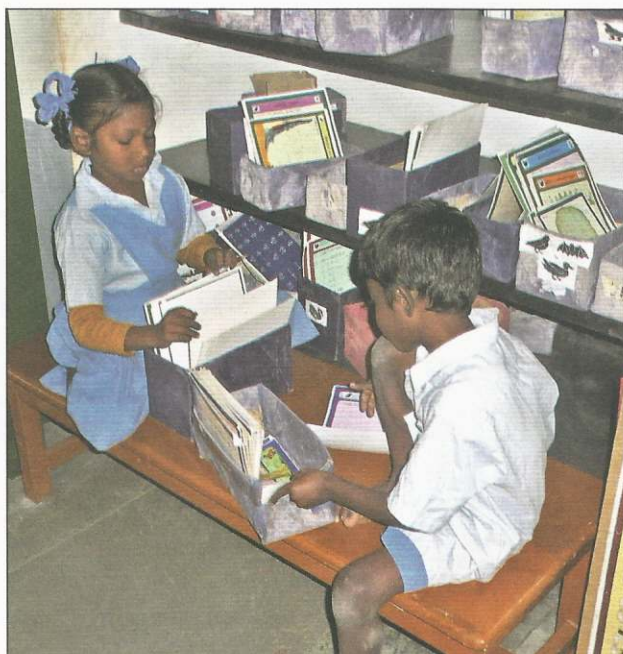
way all this goes into the subconscious. It is the best way to learn.”

But is this system now compulsory for the young children? “No!,” says Subash. “Only those children who show an interest are taught by this method; there is no compulsion for the child to learn something he does not like. But we found that those children who have embarked on this form of learning are able to gradually store a fantastic amount of information in their memories, which can make them very proficient in learning by the time they reach the age of 10.”

The Rishi Valley method

The teachers of Isai Ambalam had more trouble finding learning programmes for the older children, most of whom were school drop-outs, because each child needed its own approach. A solution was suggested by former Governing Board member Mr. Krishnan, who advised adopting the system of the Rishi Valley School in Andhra Pradesh. “In May 1997, five teachers from our school visited the Rishi Valley School where they observed a process of learning which had been developed by educationists Rama and Padmanabha Rao,” says Subash. “The Raos had designed over 1,500 ‘study cards’ for learning Telugu, Maths and Environmental Science and had arranged these cards, subject wise, in a graded manner called ‘a pictorial achievement ladder’. The children learn by studying these at his or her own pace. Each child selects, with the help of the ‘ladder’, the appropriate ‘study card’ and does the necessary exercises on the card. Initially, the help of the teacher is required but gradually the children study on their own. When a child has finished a card, he or she goes to ‘the ladder’ to find out what the next card is and in this way the child acquires the skills and ability for self-learning. The system has the enormous advantage that each child learns at his or her own pace; nobody pushes them, and they themselves seek the help of their teachers only when they need it. In the rural area of the Rishi Valley School, the study cards system worked wonders: within a few years the literacy rate had climbed to 70%. We decided to introduce that system in Isai Ambalam School.”

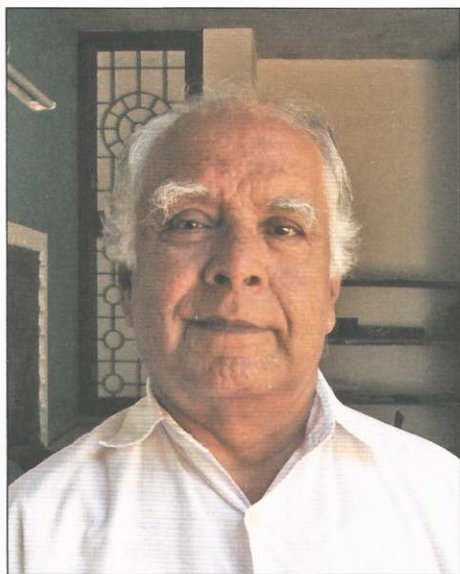
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A child finds its way on the ‘ladder’ (left), then selects the corresponding study card (middle) and proceeds to learn it while joining a group (right)

continued from page 2

However, the Rishi Valley School system was designed in Telegu, and had to be transcribed into Tamil. "After their return, a group of three teachers worked out a rough outline of the sequence of the Tamil alphabets to be introduced and accordingly prepared the study cards. Then the experiment started. We gave these cards to school dropouts who were much slower than others in learning the Tamil alphabet. They had been struggling for over 3 months to learn 15 Tamil letters; but after using these study cards they learned 60 letters in the course of one month! After witnessing this, it was decided to go full-steam ahead with the study cards system. The entire staff got involved in the preparation of the study cards, first for the Tamil language, then also for Maths and the Environmental Sciences. In the course of 5 years, with a lot of trial and errors, the study card system got established. Today, much of Isai Ambalam's primary level curriculum is taught through study cards."



Subash

teachers to the Education By Design Method in a workshop for Auroville teachers. In this method the teacher sets a problem for older children, who are asked to form groups and jointly solve it. After solving the problem the children, together with the teacher, evaluate their learning and discuss what could have been improved.

For example, the young adults are given a challenge in the form of a request letter from a trader in Chennai. He says, "I want to buy goods like incense, handicraft items, hand-made greetings made in Auroville and sell them in Chennai where many people like them and ask for more of them. Can you guide me to the places producing them?" The intention of the challenge is to induce the student to prepare a map showing the route to different manufacturing places in Auroville and explain it to the trader.

Before they start the work a small warm-up challenge is given to them. For example, the problem of how to drop an egg from a height of 3 metres without breaking it. They could use 3 sheets of newspaper, some clay, 3 balloons and a glass of water. Three groups of students were formed. The first group put the egg in clay and wrapped it in a newspaper sheet. The second group put the egg inside the balloon and covered it with clay. The third group put the egg inside the clay, rolled it into a ball, put the ball inside a bag made of newspaper sheet, filled the balloon with air and tied the bag to the mouth of the balloon. All of them dropped their production on the floor. The eggs of the first two groups broke, and the egg of the third group touched down on the floor intact.

Each such session is followed by a brief feedback. The successful group said that they listened to the ideas of all the members of the group and together decided on the way suggested by a member which was based on the principle of the parachute. The other two groups said that they listened to the idea of only one member, the others did not think at all, they felt hurried and there was no coordination.

"We have found this method to be very useful for teaching the students essential life skills such as creative and critical thinking, and developing psychological skills such as decision-making and leadership qualities," says Subash. "It has a great potential for educating the students."

Computer classes

A grant from the German government enabled Isai Ambalam School to purchase 8 computers. "There is a wealth of educational information available on the internet. By using computers and connecting to proper educational websites the students can understand and learn their subject very easily and get more effectively rid of their learning

difficulties in Maths, Science and English," says Subash. "We want to cultivate the independent self-learning capacity of all the students. We have all the necessary multi-media materials from pre-school to the 7th standard now on the computer. Students are being taught to use the computer whenever they feel the need."

The outreach

Isai Ambalam's innovative educational methods came also to the attention of the Government of Tamil Nadu. In 2001, the Education Department of the Tamil Nadu Government invited the staff of Isai Ambalam School to a meeting to explain the Rishi Valley method. The Department then decided to send a team of 25 resource people to Rishi Valley to get training and prepare study cards in Tamil for the primary level. The team included 5 teachers from Isai Ambalam, 2 from New Creation School and 2 from Auroville's Village Action. In 15 days the team prepared the texts and drawings for the primary level. It was decided to implement the system on an experimental basis in some areas in Tamil Nadu. But as the Government changed and concerned officials were transferred to other departments, this decision could not be followed up. However, with the help of a grant from the Foundation for World Education, Isai Ambalam School made computerised versions of all the texts prepared in Rishi Valley.

9 days in the use of this system. Isai Ambalam itself trained over 200 teachers belonging to 100 primary schools in the Villupuram district. On seeing the success of this system in these pilot schools, the Government introduced this system in all the 36,000 government primary schools in Tamil Nadu in 2007.

Isai Ambalam today

"We are very happy that our work has found such a warm welcome in Tamil Nadu," says Subash. "But please keep in mind that this is only a drop in the ocean."

A hopeful development is that the Indian Government has passed The Right of Children to Free and Compulsory Education Act (also called The Right to Education Act). The Act, which came into force in April 2010, makes education a fundamental right of every child between the ages of 6 and 14 and specifies minimum norms in elementary schools. The Act provides that no child shall be held back, expelled, or required to pass a board examination until the completion of elementary education. There is also a provision for special training of school drop-outs to bring them up to par with students of the same age.

"These are excellent developments," says Subash. "But the Act has been criticised for not making any provisions regarding the quality of education provided at the schools. Here our work



Teacher Nirmala tests a student on his study card

The matter resurfaced in 2003, when a Chennai Corporation Commissioner decided to introduce this system in all the 264 primary schools run by the corporation in Chennai. Isai Ambalam School teachers were invited to join a team of Corporation school teachers and other school teachers from the rest of Tamil Nadu to work out the strategy of introducing the system. New study cards were made and printed. By January 2004, they had been introduced in all the Corporation schools.

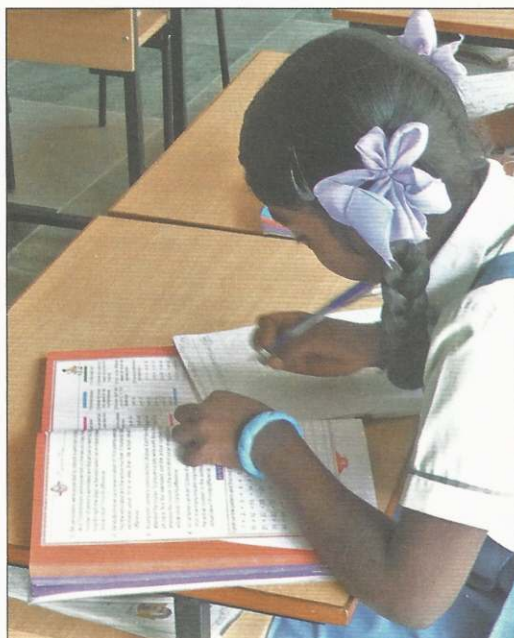
On seeing the good results of the system, the Education Department of Tamil Nadu then decided to introduce it in all the districts of Tamil Nadu. It selected over 3,000 government primary schools and trained over 7,000 primary school teachers for

is of importance. We are in the process of creating learning materials in the form of manuals, books and audio and video CDs. Demonstration CDs on the Glenn Doman method, on the Bilingual Audio with Language Games method, on the Rishi Valley and the Education By Design methods, are ready, as well as on some other innovative educational systems. There is a great demand for the use of these methods, which shows that the awareness of the need for student-friendly educational methods is growing. We hope that the use of these systems will spread, and we welcome outside schools to come here and get trained in the use of those practices. That would create a beautiful bridge between Auroville and the Indian schools."

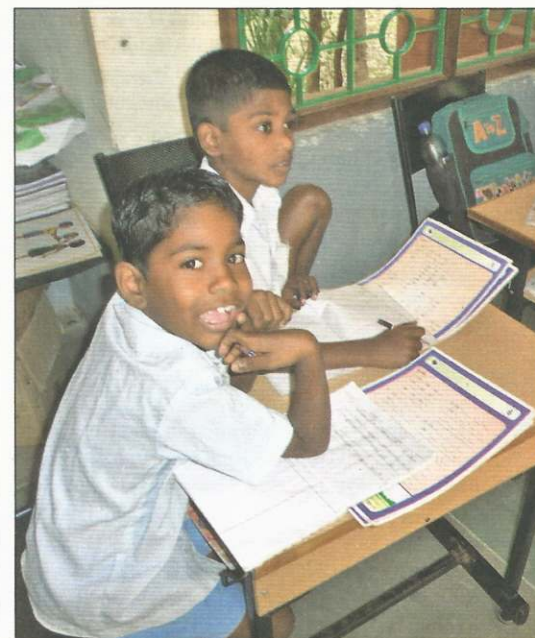
In conversation with Carel



Students at the computer at Isai Ambalam



A fifth standard girl doing her exercises



Working with study cards...

The Ilaignarkal Education Centre

If you drive down the earth road from Kottakarai towards Auroville at about four o'clock in the afternoon you will see groups of young men walking and cycling purposefully towards the Ilaignarkal Education Centre. Ilaignarkal in Tamil name means "youth" and it has been life-changing for many village young men and women over the last 35 years.

It was first established in the Matrimandir Nursery near the home of Meenakshi. 12 years ago it moved to its present location. It is a pleasant red earth brick complex with five open buildings surrounding a small sunken garden. The main purpose of the Centre is to provide further education for Auroville workers, gardeners, household helpers and their children. During the day classes are held for children who have dropped out of school, or for children, like the Nepalese children, who do not speak Tamil or English.

Ilaignarkal is a part of Auroville's Outreach Educational Programme. It has a small reference library, a room for meditation and two teaching rooms with notice boards covered with interesting topics taken from Tamil newspapers and some excerpts of Tamil poetry. There are pictures of The Mother and her quote on 'How to Be a Good Teacher' is hung in a prominent position.

Ten people work at the centre: volunteers, Aurovilians and paid staff. Although it is a busy and thriving place, there is quiet air of dedication and concentration.

One of the buildings houses the SEWA office, the Small Employers Welfare Administration. Chitra, who assists in the office, explains its functions. "SEWA is an important organization for both the employers and employees of Auroville and at present cares for about 400 workers. It runs a retirement and gratuity fund and helps people get an accident insurance. It also runs an educational fund that takes care of 21 girl children from neighbouring villages through Ilaignarkal School."

Chitra points out Ilaignarkal's other facilities. "Young men and women come here to learn tailoring, basic computer skills, drawing and kolam painting in the traditional Tamil dot method. About



A view of the Ilaignarkal Education Centre

40 students come each evening and in the school holidays there are summer camps for about 30 to 50 of the worker's children who otherwise would have nowhere to go.

"We sometimes give lectures on the Mother and Sri Aurobindo and the Mother, Tamil culture and heritage, and people come from the neighbouring villages and even from Pondicherry to attend them. For the past 15 years we have been publishing *Grama Seithi Madal*, a monthly periodical covering various positive news items on Auroville and its neighbourhood.

"For the last four years, in collaboration with the Tamil Heritage Centre, we have also been organizing a Children's Book Fair. It runs for 10 days and is visited by hundreds of children. It gives them the rare opportunity to develop a love of reading, reviewing and creating books."

It is 4 o'clock in the afternoon and a class of young men is learning English. Ganesh tells us he is 24 years old and walks here every day, after his

work as a carpenter in Sanjeevi Nagar. "I come here five days a week to try and learn English," he told us. "There is nowhere else I can go to learn it and it is very important for me. I also like to learn about our Tamil culture and we celebrate all the festivals here; I especially like Christmas.

A few weeks ago we celebrated the Tamil festival 'gulu' with a five tier platform that reached the ceiling and we covered it with dolls and statues dressed as Gods like Ganesh and Krishna. We

choose a different theme each year. This year's theme was 'Evolution' as this is the essence of Sri Aurobindo's teaching. Many people came after work to see it and do puja and celebrate and eat special snacks. It was a fun time for us."

Prasad is a mechanic from Kottakarai who is now unemployed. "If I can speak good English it will be easier to get a job," he explained. "I am happy here as everyone treats us kindly and with respect."

A pretty young girl dressed in bright green tells us she is learning computer, typewriting, Photoshop and does yoga two times a week. An eleven year old boy is encouraged by his teacher to recite a Sanskrit poem. He recites it effortlessly and with obvious joy.

Anand, the English teacher, feels he is doing extremely useful work here. "When these boys first came here they had very poor communication skills and were shy and lacked confidence. They were all poorly educated but in the short time they have been here they have developed enormously. Without this place, they would be very much on their own."

Dianna



Auroville employees learning English at Ilaignarkal

Blooming Thamarai

The book 'Blooming Thamarai, Art and Stories by Edayanchavadi Village Youth in India' was released at the Thamarai Health Education and Healing Centre on December 18th.

You find the Thamarai Health Education and Healing Centre in the middle of Edayanchavadi, opposite the temple. The place is visited by villagers who come for health check-ups and treatments and to join various classes. But its main focus is on educating the youth.

"Children from the local government school come here every day to learn how their body functions and how to take care of it," says Aurovilian Muthu Kumari, the Centre's co-ordinator. "We teach them hygiene, nutrition and yoga. We also teach them about natural health remedies, including the use of common herbs known to them, and the basics of first aid. In addition, we talk about environmental and village health issues." Classes are given by volunteers from Auroville and the Sri Aurobindo Ashram, such as acupuncturist Heidi; Suryagandhi of the Dental Clinic and Child Protection Service; Davaselvi, Marie-Claire and Praveen who do energy work; and Dr. Santosh from the Ashram School of Perfect Eyesight. On Saturdays, teenagers are given body awareness classes and taught about sexual health and child protection issues. "These classes have become part of their school curriculum," says Muthu Kumari.

Between December 2010 and May 2011, the Centre experimented by giving weekly art therapy classes to a group of village adolescents. These classes



Muthu Kumari shows the book 'Blooming Thamarai'

es focused on exploring their body awareness and identity. "The classes were inspired by Newcomer Krupa, an art therapist, and conducted jointly with me," says Muthu Kumari. "The teenagers were encouraged to learn about their own bodies and at the same time learn practical skills. Each one was asked to sew an 'affirmation doll', using scrap fabrics, and put positive personal intentions written on pieces of

paper inside the doll. The teenagers then were asked to give their doll a name and make photographs and drawings of it and write stories about it. Many teenagers named their dolls after different types of flowers, inspired by the lessons we gave on the spiritual significance of flowers as given by The Mother. After each session, we practice relaxation where we ask them to be still for a few minutes to get in touch with their heart centre. In this way the teenagers explore their inner identities."

The experience has been very successful. "The children benefited from the classes, both internally and externally. Gradually their concentration developed, their creativity expanded, aspiration and true will power were discovered, allowing them to see that anything is possible. Over a three-month period the teenagers, by connecting to the doll, connected to their own bodies and to their own inner space.

"Then we asked them to write the story about their doll, and these stories are truly remarkable. I am often very moved by them. They remind me of the dictum of Sri Aurobindo, that 'All can be done if the God touch is there'. When the stories were written, we saw an amazing and almost continuous flow of creativity. The children blossomed and their handwriting and spelling developed along with the story. And we learned from them that the positive intentions they had put inside their dolls had come true." Muthu Kumari has collected the stories of the teenagers and compiled them into the book *Blooming Thamarai, Art and Stories by Edayanchavadi Village Youth in India*.

"The experiment will become a permanent feature of our work," says Muthu Kumari. "It has been so successful that we are encouraged to find ways to expand Thamarai's work to other villages."

In conversation with Dianna

'Blooming Thamarai, Art and Stories by Edayanchavadi Village Youth in India' is available from Free Land and White Seagull bookshops. Price in India Rs 390 Rs. All profits support the work of the Thamarai projects.



Rose

By Yuvasri, 13 years old

My name is Rose. This is my story.

- 1) I grew up in a house garden.
- 2) I bloomed with beauty and joy.
- 3) A girl named Yuvasri fed me with water and compost. She took care of me and I was healthy.
- 4) In return, I offered her a beautiful flower everyday. Yuvasri loved roses very much.
- 5) One day, she went to a tour suddenly. I was worried and drying out, very hungry for water.
- 6) Yuvasri returned home after the tour.
- 7) On seeing my state, she was very worried. I feared that she would throw me out.
- 8) But she didn't do that. So I was very happy to see her.
- 9) She felt very sorry. With perseverance, she grew me again.
- 10) Some days later, I started to offer beautiful and healthy flowers once more. Looking at me, Yuvasri became happy again.

Message: With perseverance, one can win over anything.

The Thamarai Community Centre was set-up in Edayanchavadi in 2005 by Aurovilians Bridget and Kathy. 'Thamarai' means 'Lotus Flower' and the Centre's objective is the flowering of the relationship between Auroville and the village. It runs a playgroup of 25 village children and an after-school programme in which 70 children participate.

The Thamarai Health Education and Healing Centre was founded in 2008. The Director of Nursing of the Vancouver General Hospital, Ruth Lamb, visited Auroville that year together with some fellow healing practitioners. They gave a weekend course in energy healing to 35 village women at the Thamarai Centre. The course was a success, not only for the women, but also for the ladies from Vancouver. Ruth was very happy when a village lady told her, 'I remember my grandmother doing things this way.' She realized that many of the traditional ways of healing are rapidly dying out in India and how important it is to preserve them.

Ruth decided to sponsor the Thamarai Health Education and Healing Centre. She found the money to renovate an old building in the centre of the Edayanchavadi which the boys from the Youth Club helped to refurbish. Over the years this Healing Centre has become very successful. Ruth visits now every year.

Questioning Auroville's economic basics

Minhaj Ameen, better known as Min, joined Auroville in 2007.

I come from a middle class family in Madhya Pradesh, where my father runs the same hardware business that has been in our family for 135 years. I grew up with Gandhian ideas of non-violence and simple life. I suppose this is where the seeds of an alternative lifestyle were planted in me.

After studying mechanical engineering in India, I went for further studies to England where I got an MBA from the Manchester Business School. It was very interesting as I had to adapt to a completely new way of life. After I graduated there was a recession in the UK and the work situation was difficult, but eventually I managed to climb the ladder and for many years worked with IBM in a well paid job. I married, settled down in London and acquired British citizenship.

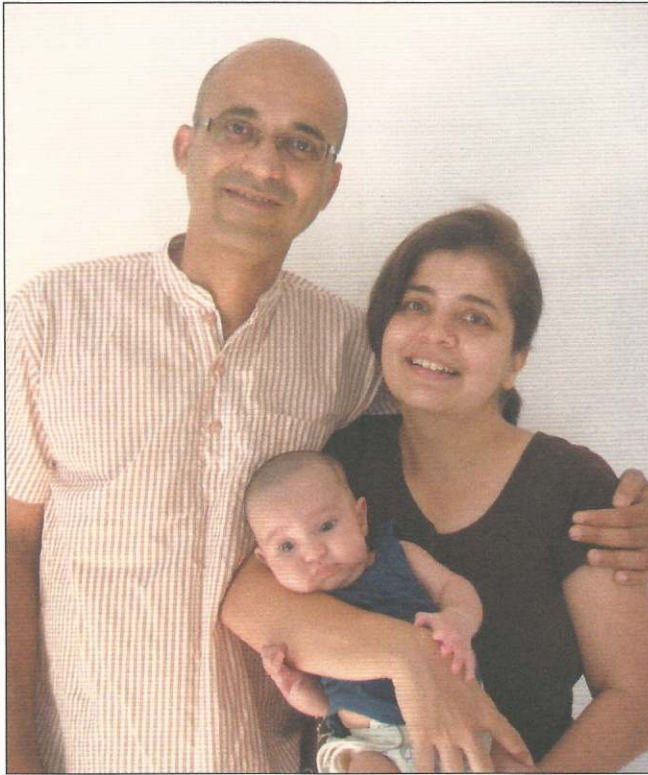
But I began to question what I was doing with my life. Did I want to continue making more money and getting a bigger house, following the usual path of Western life? I started reading philosophy and sociology to try and broaden my horizons because I wanted to find a meaning and purpose to my life and be of service to society.

My life suddenly changed when a friend directed me to the *Resurgence* website and I read an article on eco-villages. It described one in Africa and one in South India – Auroville. I was amazed that such a place existed and I decided to check it out. My wife, however, was not interested.

Within a few months I was in Auroville. I stayed for two weeks at Centre Guest House and did the visitor's cycle tour with Ambre. As I was the only person who had signed up, we had a lot of time to talk. I remember commenting that whenever I met an Aurovilian I felt a connection, as if I had met a "soul-mate."

I decided to explore this connection further. I got a one-year sabbatical and headed off to Auroville. When I returned, I realised I actually wanted to be in Auroville. IBM was kind enough to give me another one-year sabbatical, which they further extended by 6 months. I spent all this time working at CSR. During this time, I decided to join Auroville permanently and resign from my job. This decision was one of the reasons for my divorce, for my wife was not willing to come with me. We shared our savings, so I had limited funds left when I joined Auroville.

While living in Auroville I met my new partner, Tasnim, who



Min, baby Zara and Tasnim

was at the time working as a chartered accountant in Mumbai. She joined Auroville in 2009. In January this year our baby girl Zara was born. We had booked an apartment in Maitreye already two years ago but it still was not finished in time for the arrival of our baby. Fortunately people were very kind and gave us an apartment in Maitreye that was finished.

The family support we received from Aurovilians has been overwhelming. An informal network developed and people gave us sec-

ond-hand toys and clothes and support in abundance. I found it a very powerful experience. I think this community spirit is one of the main reasons I continue to live here. It is not superficial. I realize that when you need help most, it will spontaneously appear.

For Tasnim it is somewhat different. She is still trying to learn about Auroville. As a true 'Mumbaikar' she also misses the big city! But she enjoyed her work at the Visitors' Centre and now visits the pre-crèche with Zara.

Since my first visit to Auroville more than 5 years ago, I have been involved in different areas. They include Renewable Energy, Village Action, Pitchandikulam, and for the last year with L'Avenir d'Auroville and the Funds and Assets Management Committee.

My passion and present work is related to sustainability and I want to share Auroville's experiences in this field with the outside world. I also have an interest in socio-economics and through reading and observation, I feel I am beginning to develop an understanding of what is happening in Auroville in this field.

I have observed that Auroville's maintenance system that began with the best of intentions is now facing serious challenges. Auroville does not currently generate enough funds to provide a reasonable maintenance to people who work for City Services. The ideal is that everyone gets the same financial support regardless of what they do and where they work. However, a number of Aurovilians are able to have access to additional funds either through external sources or their work in Auroville.

I have come to the conclusion that our system of maintenance has to be revised. I would advocate that Auroville starts thinking about creating institutions that offer services such as education and research in line with Auroville's Charter in a collective way, a way that engenders collective responsibility and enables participants to share the fruit of their effort. We must create job opportunities and start thinking about new ways of taking care of people's needs in Auroville. For otherwise it will become increasingly difficult for people who do not have savings to live here, especially young people.

There is potential for Auroville to develop new work models that enable spiritual growth and are fair and equitable. I think the beginning of such models is already there and they will take root in due time.

In conversation with Dianna

CONFERENCE

Bringing the world a little closer

The 5th anniversary conference of the USID Foundation took place in Auroville in November. Dharmesh reports.

The name 'USID Foundation' sounds alien to Auroville and, in fact, to India. But when you discover what the abbreviation stands for it sounds very much like belonging to Auroville. The Universal Sustainable Integral Design Foundation has many ideals in common with Auroville, and this is how I connected with Raman Saxena, who has been instrumental in giving this foundation an identity that is much needed to rejuvenate the Indian Design scenario.

Raman proposed to have the Foundation's 5th anniversary conference in Auroville and use the work that has happened in Auroville over the last four decades to inspire the participants, the theme of the conference being Design for Social Innovation & Sustainable Development. From my point of view, Auroville had a self-interest here as this conference would bring together experts and young innovators working in this field from India and abroad and from many diverse backgrounds – information technology, social development, media, films, design, innovation, user experience, etc.

The participants included students, experts and professionals from premier institutes such as the National Institute of Design and Indian Institutes of Technology, from multinational corporations and from start-ups. Organizing support was from IIT Kanpur and participation and sponsorship came from organizations like Yahoo India, Google and Microsoft Research.

The conference was scheduled to start in the first week of November, which coincides with the peak of our monsoon. The rain gods had been showering their blessings on the Auroville plateau for

the days preceding the conference dates and we had our hearts in our mouths but there was a Divine intervention: the sunshine arrived just a few hours before the opening. Kala Kendra provided a good setting for the registration process and sessions were divided between Bharat Nivas and the Town Hall. The natural atmosphere and informal setting of Auroville as a venue was much appreciated as it was in stark contrast to the urban venues of past events of USID.

Raman had requested that a couple of experienced Aurovilians should introduce Auroville and its work in relation to the conference theme. The presentations of Hemant, who is involved with renewable energy, Uma from Upasana who works in socially-innovative projects, Suhasini who presented her architectural development and design perspectives and Vivek from Buddha Garden on natural ways of farming, gave a good start to the conference. The participants could immediately relate to Auroville and understand the deep connection between the theme, Auroville, India and the world.



The delegates on a Buddha Garden visit with Vivek

information technology and the Internet. This inspired youngsters on how to translate an idea into a successful international enterprise. His interactive, flawless and very precise style of presentation showed us what makes a successful manager and innovator. He is part of a new breed of Indian businessmen who combine the local with a global playing field.

The high-quality participation of Auroville youth who are working in fields like social development, product design, art therapy and solid waste management also enriched the conference sessions. At the same time, I could see that the USID management was often requested to bring its various programmes to Auroville to enrich our experience.

The conference was interspersed with innovation sessions in the daytime with experts while the evenings were filled with food for the soul. Cultural events included a special Odissi performance by Rekha Tandon and Kai Trust, and the Aurovilian band Confluence with Amit Rekhi, the new sensation in Indian Jazz, which gave an awesome closing performance. Aurofilm coordinated a film festival presented by the filmmakers themselves. Paromita Sen's documentary explored the side lanes of the copyright issue in the music industry and Sunil Shaubag presented his film about a fishing village on the Kerala coast which has done path-breaking work in the conservation of Olive Ridley turtles.

Three days of this interaction with the best people in diverse fields showed us how Auroville can learn from the experience and wealth of this generation of innovators from India and abroad. The true meaning of Auroville perhaps lies in connecting with the world out there through everything we have achieved over the last decades, inspiring the world and being inspired by it so that humanity has a better future – bringing it a little closer to the vision of our founders.

For more information: www.usidfoundation.org



Prof Anil Gupta giving the Key note address

Litter Free Auroville – two years later

Twenty-four months ago a buzz was building in Auroville. Rumours circulated about the signs, t-shirts, graffiti reading “29-01.” What was it? What would happen on January 29th? Then the big reveal: The Litter Free Auroville (LFA) campaign. Waste – from segregation to composting – was the hot topic. There was a massive clean-up and a daylong fair full of exhibits, posters, plays and more. Over 1800 people attended from Auroville and the bioregion.

And then it was over.

The effects

So did LFA change Auroville?

“Absolutely!” answers Ribhu, one of the organizers of the campaign. “Today there is more awareness, more collective effort, more willpower, and the kids were really impacted by it.” He goes on to cite new projects made possible by LFA, including several initiatives in the Pondicherry Municipal Corporation. There is more “upcycling” – converting trash or useless products into usable items, like Arthena’s and Ok’s bags made of used vinyl banners and cassette tapes and plastic bags respectively. Today we can find chairs made from tetrapacks and hats made of old cassette tapes. Waste cloth from all Auroville units are now sent to an NGO which turns them into sanitary napkins. And waste segregation dramatically improved, which allows Eco-Service to recycle and sell more waste, which means we as a community landfill less. Even the landfill issue is being addressed; Eco Pro and Engineers Without Borders, Australia, are studying landfill technologies and working to create site-selection criteria that reduce leachate percolation into groundwater supplies. Selecting the most suitable site for a landfill dramatically reduces the risk of leachate pollution for the entire life of the landfill. Presently Auroville’s working groups select the dumpsites, and they do so without clear criteria or professional risk assessment for long and short-term pollution.

Handling Biomedical waste

“Biomedical waste is an important example,” Ribhu explains. “If you use a piece of cotton to clean a wound, it is considered pathological waste. If you put it in a barrel with the rest of your waste, the whole barrel needs to be treated as infectious waste – it can spread diseases – and is dangerous to handle. But if you segregate at source, you increase the amount of waste that can be recycled.”

Only about 10% of hospital waste is infectious; the paper that covers sterilized gauze is clean, the plastic bags that contain shipments of medicine and much more can be recycled. Prior to the LFA, a project to improve the handling and disposal of biomedical waste under Soma Waste Management and conducted by Sourya, Meera and Chandrah, the

cans and other metal. Thin plastic, like the carry bags found almost everywhere, are less valuable but still worth something.

“In one of the nearby villages (Periyamudaliarchavadi), we launched an awareness campaign to encourage people to segregate and clean their waste by proving how valuable it is,” Ribhu

would you laugh at it, or would you pick it up? If the scrap dealer came to your door, would you keep your plastic separate and clean?” For the most part the ladies responded with a wobble of the head, a passive yes. “If the household has an incentive then they’ll keep the waste clean, which means there is less work for the recycling plant, which means less waste by-product from recycling. Dirty or soiled waste needs to be cleaned with harsh chemicals before it can be recycled – so dirty waste creates more pollution.”

Where does Eco-Service fit into the waste chain? “Too low,” Ribhu answers. “Eco-Service has enough waste to move up; we don’t need to be dealing with the primary scrap dealers. And if we could get more storage space, we could sell directly to the factories, which would make us a good profit so we could offset our costs and/or better incentivize our collection process.”

Upgrading Eco-Service

Eco-Service has already come a long way since 1992, when Stefano founded it. Back then, Eco-Service had one employee and one tricycle, and they collected what people didn’t want to dump in back yards. Prior to that, people dumped everything at home. “They’d throw batteries into containers and cement them closed. No one really knew what they were doing,” Ribhu adds.

Today Eco-Service has four executives, nine employees, numerous collaborative partners like Ribhu and Sourya, a load carrier, and a small facility. However, the Service isn’t benefiting from the financial potential of waste for many reasons. Aurovilians live far apart from each other, making collection more difficult, time-consuming and expensive. Outside Auroville, people tend to go to the scrap dealer; in Auroville it’s collected, brought to the centre, sorted and cleaned, and then passed on. Furthermore, there is not sufficient financial support from City Services.

To evolve, Eco-Service must increase the sales of recyclables and maximize profits. Given the present user-pay fee that’s relatively high, there’s little incentive for households. Eco-Service charges Rs. 60 to collect segregated waste and Rs. 120 for mixed waste. “The workers get the good stuff,” Ribhu explains. “Think about it: if you’re paying for segregated waste, you’re happy to let your amma take some of it home, so less is collected, so you pay Eco-Service less.” In this system, the workers take the most valuable items, which leaves Eco-Service with less valuable waste, which means there is less potential revenue to be made. Ribhu offers his own solution: “I would like to buy what’s recyclable and make households pay through the nose for what’s landfill. That would change the way we create waste, and it would bring the valuable goods directly to Eco-Service.”

Assuming more valuable waste is collected, there is no real space for it at the current Eco-Service facility. For this reason, Ribhu, Sourya, Auralice and others are working hard to bring a complete waste centre into the new Service Area. It would include a place to store hazardous waste (which Eco-Service now asks households to keep), a huge segregation space, and a massive storage section. “Right now we can’t benefit from high rates because we don’t have storage capacity. With this new storage space, we’d have enough tonnage to bypass all the intermediaries and sell directly to the factories,” Ribhu says. The centre would house all waste-related activities and hopefully improve collection in

Auroville by 60%-110%. “I say 110% because we should collect from villages too and give them incentives, which would make us more competitive for the factories.”

Ribhu and the others see the new waste facility as the first step into making Auroville a centre for innovative solutions to waste. “There’s little global innovation on waste,” Ribhu explains. Instead, people, societies and governments tend to choose “solutions” that offer the least interference at the least cost. “Here we have small community, goodwill, and an array of experts, so we can test a variety of ideas.”

Changing Behaviour

In 2008, the resource recovery – the amount of recyclable/sellable waste collected within Auroville – was only 40%. After management changes at the Eco Service and awareness through the LFA, it jumped to 70-75%, meaning today we landfill only 25-30% of the 60% of waste that is collected in Auroville. The remaining 40% of waste Aurovilians produce gets buried, burned, sold directly to scrap dealers, or dumped in canyons, forests, and other low-lying areas. “If you’re sceptical that it comes from Auroville, take a look for yourself. The piles you see along the road are fully of cheese packets and other Auroville



From left, Vimal, Mari, Ribhu and Chandrah, some of the leading forces of Litter Free Auroville

Auroville Health Center was burning all of its waste in their ‘controlled burner’ – from PVC plastic to regular household waste. “Incineration is slightly better than an open flame, but it’s far from the 800°+ recommended by the WHO,” Ribhu says. With a proud smile he continues, “Now Health Center segregates at source so only 20% of their waste is incinerated.”

“But LFA didn’t really have the success I was hoping for,” Ribhu adds. “I was hoping more people would take on things.” It’s not that no one joined the waste campaign: Souryan became an executive of the Eco-Service after his involvement in LFA, and the Waste Task Force increased its membership, so now between seven and fifteen people meet regularly to discuss waste-related issues. Ribhu himself discovered his passion through LFA: now almost everything he does revolves around waste. “If we had more people involved, we could do so much more.” However, looking at all that’s happening with waste in Auroville today, it’s hard to imagine more activity would be possible.

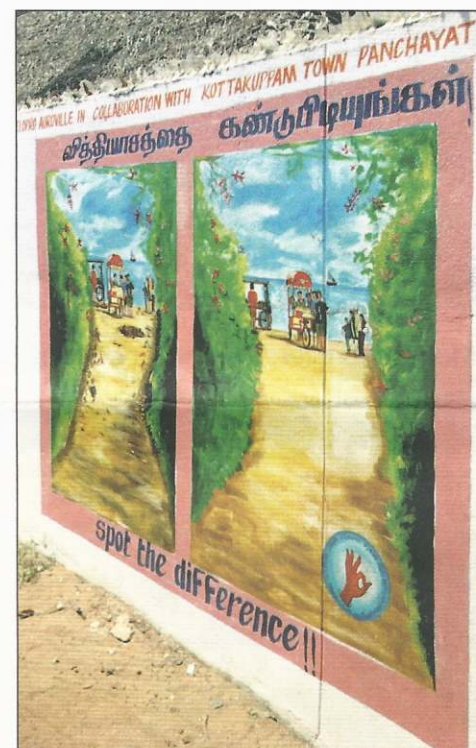
Making Money out of trash

To fully understand the situation, it’s important to realize there’s money in waste – especially “high value” waste like the milk packets/bags and other plastics, beer bottles and most glass,

explains. They started with the guesthouses. After counting the PET bottles (typical of mineral water and sodas), glass, cans and paper in their trash, Ribhu and Lucas showed the guesthouse owners that they could earn up to Rs.1000 each month simply by segregating and keeping the waste clean, then bringing it to a nearby scrap dealer.

The scrap dealer most accessible to the public is located on the East Coast Road. He buys the PET bottles for Rs.4-6 each, then sells them to a secondary scrap dealer for Rs.9-11. The secondary dealer sells to a wholesaler in plastic for Rs.17-19 per PET bottle, who then sells them to a recycling factory. At the beginning of last year, Reliance was buying PET bottles for Rs.24-30 per bottle. “These are variable rates; as oil prices increase, so do PET prices.”

This create a highly efficient process for bringing waste to factories while providing everyone along the way with incentives – except small households, who tend to have much less high value waste. In a new version of the awareness campaign that brought Ribhu and Lucas to guesthouses, they realized households would earn only about Rs.5 per week by bringing their recyclables to scrap dealers. “The ladies laughed at me, said their husbands earn however much money and ‘why would we drag our waste somewhere for so little?’ I responded, ‘If you saw a five rupee note on the road,



Spot the difference: a wall painting on the road to the beach. On one side is a picture of the beach without waste, the other side has a picture with tons of litter

Awareness and Reduction



The waste problems of the world will not be solved until we reduce the amount of waste we produce. Ribhu and Lucas wanted to bring reduction awareness to Padianmulichavadi in their effort to keep the town clean, and they began with a popular teashop on the ECR.

“We asked him to stop offering plastic cups,” Ribhu explains. The teashop owner was understandably against the idea, fearing that customers preferred plastic cups and would go elsewhere if he only offered glass. Ribhu and Lucas asked to hang a poster instead. He was wary but agreed under two conditions: the poster would include 1) his name, and 2) his favourite god. Ribhu and Lucas happily agreed.

On the left side of the poster, which boasts a bright green background, they put his name and his god as well as a series of photos that show a glass being used: A clean glass is filled with tea, washed, then used again. It’s cyclical and good. The other side shows photos of a plastic cup being filled with tea, trashed, collected, transported, and discarded in smouldering dump. It’s dark and linear. Lucas and Ribhu worked closely with teashop owner throughout the design process, going back and forth on several options, and printed it nicely on laminate board.

Today when someone asks for a plastic cup, the owner points to the poster and asks, “Do you want a glass instead?”

It cost Rs.1300, required innovative thinking, and accomplished more than many other awareness campaigns. Ribhu and Lucas then created a similar poster for a petty-shop owner who sells vegetables and offers plastics bags. He too now points to the poster and encourages reusable bags.

Keeping it Clean



It was an open dump, a narrow strip of Pedianmulichavady near Repos, often full of cows. Ribhu and Lucas were tasked to clean it and keep it clean – a nearly impossible task given limited human resources and budget. They tried traditional methods of simply removing the trash, but within days it would be full again. They asked the neighbours who was dumping only to receive answers like, “They came in the night so we couldn’t see,” or “Some people from far away.”

“We needed an innovative solution,” Ribhu said, and then they found one.

They first asked the kids to clean the space in the morning, offering cake and sweets as rewards. They asked the children to invite their mothers in the afternoon to participate in a *kolam* competition. Almost 50 women participated. They were awarded prizes – tea sets, tiffins, and the like.

Then the magic happened. Because *kolams* have spiritual significance, while they were there, no one dared to dump. Then people became used to the space being clean. Now, when waste is thrown there, it’s quickly cleaned. Most tellingly, when Lucas and Ribhu walk by today, the neighbours rush over to inform them who has been dumping!

For less than Rs.2500 and one day of work, this innovative project worked – and saved Ribhu and Lucas the salaries, frustration and headaches inherent in the old approach.

change. “The children gave us hope,” Ribhu says. “The potential to change behaviour, the affinity to nature and their environment, and the will and ability to change is so much greater in children than adults. For adults, a plastic bag is so convenient it’s difficult to give it up; children are flexible enough to make a conscious change before the habit develops. When we realized this, we thought, ‘Why don’t we start by getting waste into the school curriculum to teach kids about the lifecycle of the products they buy?’ Then they’ll make better-informed decisions that can bring about change.”

With this inspiration, some of the leading forces of LFA – Ribhu, Chandrah and Meera – wrote a project proposal and submitted it to the Project Coordination Group (PCG) in March 2009, less than two months after LFA ended. Unfortunately, the team didn’t realize that the PCG requires all school-related projects to first gain approval of the school board. Because the school board didn’t see the project first, PCG immediately rejected it. The LFA team fizzled out due to frustration, lack of focus and little encouragement.

But the remaining members of LFA refused to give up. Vimal, a talented young graphic designer from Auroville Collaborative, joined Ribhu and Chandrah, followed by Mari, who has global experience in education. Together they’re working on creating innovative multi-intelligence educational materials and curriculum called Garbology. Three of them have formed WasteLess, an Auroville Activity all about waste. WasteLess would then promote Garbology, the dream curriculum that LFA seeded. They found office space and other structural requirements to enable the project to manifest in a short period of time. WasteLess appealed to the school board, received an “Ok,” re-submitted to the PCG, and gained the approval. The funding was provided by the Foundation for World Education and Stichting de Zaaier and finally came through at the end of July 2011. The team started work in October.

The research phase is complete, and the team is now focused on creating the curriculum – whatever it may be. “It could be a book, a board game, or a campaign for two weeks” that integrates education on waste with traditional subjects like math and reading. The design phase will continue until the end of January, at which point WasteLess will give selected materials from Garbology curriculum to the schools for pilot testing. After collecting input from three diverse Auroville schools-Deepanam, Transition and Udavi – they’ll make any necessary changes. These schools and all Auroville and outreach schools will have a final version as early as April and then be able to offer it to their students.

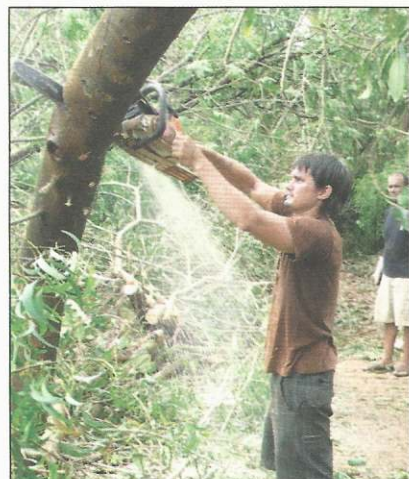
For the WasteLess team, this is just the beginning. They’ll bring it to other interested schools, and someday – they dream – to every school in India. “Imagine if all the kids in all the villages start learning about waste,” Ribhu dreams. “By the time they’re twenty they’ll be saying, ‘Hey, let’s segregate this waste, let’s not dump in on the streets!’ This would be the strongest way to bring about the massive systems change desperately needed in the world today. That’s exactly what WasteLess wants to do: change the world, one piece of garbage at a time.”

Catherine

Cyclone Thane hits Auroville



An uprooted tree hit a house in Certitude



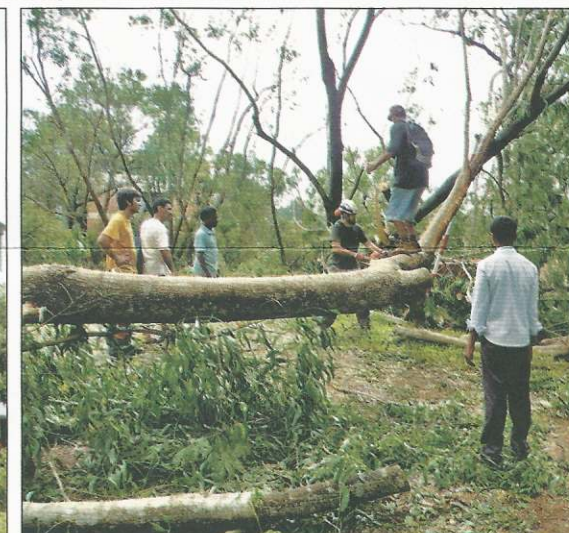
Cleaning the road



A decapitated tree in Surrender



The damaged Luminosity building



Cleaning the entrance to the Town Hall



Two new road signs



Devastation in the Matrimandir Nursery



A few trees have remained of the Eucalyptus Grove



Damage to a greenhouse in Auro Orchard

Auroville must prepare for a different energy future

Recently, a new kind of energy system was installed in Ilaignarkal School. Auroville Today found out more from Rishi whose unit, Sunlit Future, set it up.

Auroville Today: What is the system you have installed in Ilaignarkal School and what are its advantages?

Rishi: It's an on-grid battery-less system based on solar photovoltaics. You produce power from the solar panels for your own needs and any excess power you generate is fed into the main grid. If you cannot produce enough power for your needs, you simply take it from the grid. The electricity you feed into the grid offsets your electricity bill. The state power utility will pay you directly for each unit you provide to the grid (we are waiting for our state electricity board to set a tariff for this: many other states have already done so).

The prime reason for opting for this system is that, unlike an off-grid system, you don't need batteries to store power: your main grid is acting like your storage device. Also, you don't need a charge controller. So the system has fewer components to go wrong, it is easier to install and use and it saves money on your electricity bills. There are also environmental advantages. It doesn't use batteries, which are the most environmentally-damaging component of an off-grid system, and the power which is generated locally is renewable energy.

This kind of system is designed for solar photovoltaic power plants but we are seeing if it is viable on a much smaller scale. So, in addition to the school, we have installed one on a house in

becoming dearer and need to be changed every 5 years or so.

Surely one of the big disadvantages of such a system is that, whenever excess energy is needed, you are dependent on the Tamil Nadu Electricity Board (TNEB) grid which is very inefficient in providing power: there are five hours of power-cuts a day at present.

This is why, for the moment, the on-grid system doesn't make so much sense for individual houses in Auroville, where power is needed at night – a time when often there are power-cuts at present. I think on-grid systems are a good solution for our schools, factories and offices which need power in the daytime and already have a generator as a backup, but don't need power at night; places like the Town Hall or Maroma. We could put 10 kW of panels and a 10 kW inverter on the roof of the Town Hall and this would really reduce the electricity bill. And, of course, off-grid systems will still be needed in the Greenbelt where you're not connected to the grid.

It's true that Tamil Nadu is facing a huge power crisis at the moment but the power situation has to improve in the future because there's no way this can continue. Then online systems would be more relevant for individual houses.

Isn't it a huge act of faith to believe that the power supply from the grid will improve in the future? The state electricity board has been in very bad shape for a long time. Also, the power is generated from non-renewable sources, like lignite or nuclear, which are very damaging environmentally.

Presently we are dependent on a very inefficient TNEB as our only supplier. However, some state governments are now allowing private companies to put up their own power plants and transmission lines – it's already happening in Bombay and Delhi – and although conventional sources of generation will be necessary for many years to come these companies are also looking at alternative, renewable sources of power generation. So I don't see that the energy situation will be the same five years down the line. This means that we in Auroville need to prepare ourselves for a new situation where we will have a choice of providers and where we may be able to choose from which energy source the grid electricity is provided.

How should we prepare for this?

Within five years we should have our own internal grid. We should also have our own decentralized power plant using not only solar photovoltaics but also solar thermal, wind, biomass or other forms of alternative power so that we can produce most of the power we need in the daytime. This grid should have one hook-up point through which we can link up with an external energy supplier who will give us consistent power in the evenings and at night.

But shouldn't we also address our energy usage?

Yes. What we need is better energy management and more awareness of how much energy



The solar panels on the roof of one the Ilaignarkal buildings

we consume and how we consume it. Actually, India already has enough power plants, it's just that the power which is generated is transmitted and used very inefficiently. Improvements can be made in energy generation and transmission but probably only about 15% savings can be made here. The big savings are to be made in our homes through using improved technology. For example, if every 70 watt fan in the country was replaced by a 50 watt fan (which already exist), it would be an immense saving of energy. Similarly, the government should ban the sale of energy-intensive incandescent bulbs and only 5 star energy-efficient fridges and air-conditioning systems should be sold. Today these are more expensive, so the government should take the excise duty off the most energy-efficient products and increase them on the less energy-efficient products.

In fact, in India today you have a dysfunctional energy scenario. The most wasteful or polluting energy sources and equipment receive direct or indirect subsidies while cleaner alternatives do not receive much support. Why is this?

There's a lot of money involved in conventional energy generation, which means a lot of kickbacks. But how long can we go on like this? Actually, Auroville has its own dysfunction-

support.

If we are going to employ subsidies, they should be given to people who cannot afford to pay even small electricity bills and to help people purchase more energy-efficient appliances. In other words, we should be aiming to reduce our overall energy demand rather than encouraging it to increase, which is what our present subsidy is doing.

Auroville should be demonstrating the best energy scenario so that everybody in India is aware of what to buy and how to run it: we should be pioneers in this. However, awareness of the overall energy situation is very low here. We need to inform people about how to minimize their energy footprint, which means looking at every gadget from the point of managing energy demand. We could involve the students in checking energy consumption at school or in their homes using a simple meter: it could lead to a competition to see who can reduce their energy use the most. We should also set up an energy school where we teach people how to set up and maintain energy-efficient systems: this can be a tremendous source of income and employment in the future.

One thing is clear. In terms of energy, neither India nor Auroville can keep on pursuing the present path.

From an interview by Alan



Rishi

Pondicherry, where it has been running for three months.

How does the cost compare with that of an off-grid solar system?

This system is somewhat cheaper. Although you need a sophisticated and expensive online inverter to convert the power and feed it into the system (the one at the school costs Rs 87,000), these inverters operate at a much higher-efficiency than the standard ones so there is less wastage and they are long-lasting. Also, you don't have to pay for batteries and a charge controller which, together, can represent 30% of the cost of a total off-grid system. However, as the inverter works at a high voltage, you do need a minimum number of panels. The inverter at the school is rated at 3 kW and the panels are 2kW, which is about the minimum required. But panels are getting much cheaper and the warranty is now for 20 years. Batteries, on the other hand, are

LETTER

On wind generators

Dear Editors,

The article on small wind generators in Auroville by Catherine includes a quote that is attributed to me. This quote has been taken out of an email contribution to the article which reads as follows:

"Toine, who has been in senior management positions of international wind turbine companies believes that wind energy will be part of the Auroville renewable energy portfolio but that these wind turbines will have to be located in the windy parts of the south of Tamil Nadu and feed power into the grid there. Auroville has very low average wind speeds and therefore the larger grid-connected wind turbines cannot be installed here. Small wind turbines are an option but outputs will be relatively low. Toine believes in distributed generation: renewable energy generation at many locations in Auroville and the region (rooftop PV solar, biomass, small wind) and connected to the grid. The required regulatory framework (open access and feed-in tariffs) is not yet there but will probably come in the coming years."

In the reduced quote in the article two important elements were missed out: (1) Bigger wind turbines can be installed in the windy parts of south Tamil Nadu (and off-set Auroville grid consumption) (2) Small wind turbines can be part of a system of distributed generation that is grid connected.

The wind turbines that Jorge plans to build have a capacity factor of 7.05% at 3 m/s. The bigger grid connected wind turbines work with capacity factors in the range of 20 – 35% in wind regimes of 6 – 9 m/s. Solar PV in the Auroville region has a capacity factor of 15% – 18%. That is why I describe the output of these small wind turbines in Auroville as "relatively low" – relative to the bigger wind turbines and relative even to solar. The experiments of Jorge should be encouraged and small wind will be part of the distributed generation system – grid connected to reduce battery bank capacity. But just as Martanda has installed the AirBreeze wind turbine, other interested persons may also like to look at other established products like the Broadstar (<http://www.broadstarwindssystems.com>) and other rooftop wind technologies like the Energy Ball of Home Energy (www.homeenergy.nl).

Kind regards,
Toine

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