

Auroville Today

NOVEMBER 2002, No.166

MAIN THEME: Securing water for the city

- Water resource study
- Monitoring groundwater
- Working in the bioregion
- Initiating water conservation systems
- When water turns salty
- Water consumption patterns in Auroville

pages 1,4 and 5



Droughts abound

This year's southwest monsoon (June-September) turned out to be a failure for Tamil Nadu and many other Indian states. The dreaded word 'drought' is repeatedly hitting the headlines of all Indian newspapers.

But insufficient rainfall is but one cause of drought. There are also hydrological droughts, the result of severe depletion of the water table. Some of these are caused by unsustainable and inefficient use of groundwater, for example, as a consequence of the policy of nearly all Indian states to provide free or heavily subsidized electricity to farmers. Another focus these days is on agricultural droughts caused by disputes over the sharing of river waters by riparian Indian states. Practically every river in India has become so contested. Last but not least there is the issue of pollution of ground water which has become yet another cause of concern.

Like many places in India, Auroville too is suffering from water shortage. The insufficient summer monsoon coupled with the failing of three successive winter monsoons has lowered the water table, and has recently led to seawater intrusion in the water table of some beach communities.

In this issue we present an overview of what is being done to secure water for the city and the bioregion.

Doing a water resource study

Determining water availability for the city

"Is there enough water for the city?" This harrowing question was tabled in the Development Group about six years ago. "None of us was able to give an answer beyond 'we should do a study', and hardly anybody had an idea about the parameters," recounts Jan. "A water expert from New Delhi was visiting Auroville at the time. He helped us to formulate the Water Research Project and calculated the costs: about Rs 18 lakhs, way beyond the meagre budget of the Development Group. We shelved the project, but the idea stayed very much alive. Friends from the American Foundation for World Education (FWE) kept urging us to start, but they too lacked the financial means to support the project.

"It changed in 1999 when the Gateway group started its work of allocating a \$ 1 million donation to various Auroville projects. The Water Research Project was dusted off and re-worked with the help of another water expert, the Israeli Dr. Israel Gev, who was visiting Auroville for a holiday. Then the FWE and Gateway agreed to co-sponsor the project to an amount totalling Rs 15 lakhs. Dr. Gev had indicated that Rs 15 lakhs would be sufficient for a study based on existing data but that there would be no financial scope for drilling exploratory bore wells or doing electro-resistivity or seismic tests to determine the geological formations accurately. The Development Group nevertheless decided to go ahead and appointed me as project manager. Three experts, Dr. Chamanlal Gupta from Pondicherry, Harald Kraft from Germany and Piero from Auroville, agreed to act as advisory team.

"The project started in February 2000. The first thing to do was the delimitation of acceptable boundaries for the research area. We finally agreed on Kalliveli tank to the north, the ocean coast to the east, and the Gingi river to the south and west. That deter-



The lake of Irumbal has dried up except for a few centimeters of water from unexpected pre-monsoon rains. There should be 60-90 centimeters of water after a good monsoon.

mined a rather big area of about 650 square kilometres.

"Then we started the data collection, and almost immediately ran into a rather solid wall. I thought that we could obtain data by just nicely asking for them, but that proved to be an illusion. It started with PASIC, the Pondicherry Agro Services Industrial Corporation, which has drilled almost all the deep wells in Auroville. They have reasonably detailed files on most wells they have drilled in the last 10-15 years, including their depths, yields and qualitative descriptions of the extracted drill material. The latter

gives an indication of the geological strata. But it took a year of intense talks before they allowed us to make a complete copy of all these files. Thanks to PASIC, we have now invaluable records of 216 wells in Auroville's city, greenbelt and keyhole areas.

"Apart from PASIC, we got well data from private drilling rigs and from the Sugar Mills Department that had sunk wells in the northern part of the research area. But none of their data were as complete as PASIC's. We also approached the Central Ground Water Board.

continued on page 4

Monitoring groundwater

The groundwater situation in Auroville and the surrounding area is monitored by Water Harvest

The Green Revolution dramatically changed water consumption patterns in India. The hybrid crops introduced by the Green Revolution required substantial more irrigation than the traditional varieties. The state governments, in order to support all agricultural activity, charted a policy of offering free or heavily subsidized electricity to all farmers. Progressively and then more and more rapidly, wells multiplied across the country, water was pumped out in great quantity and crops started to be over-irrigated.

As a direct consequence, the underground water tables were depleted faster than they could be recharged

and their level has been going down dramatically. This is continuing.

Another impact of over-irrigation is on the soil. With too much irrigation, the organic substances in the soil get washed away. Farmers compensate this degradation of the soil fertility by adding chemical fertilizers. The accumulation of chemical substances in the soil, in turn, creates a direct risk of groundwater pollution.

There were also other, indirect impacts. Because water became easily accessible to anybody with a minimum of means, all the traditional structures, which existed for rain water harvesting, storage and irrigation, gradually fell into disuse: many are now silted up

and their embankments are in poor condition. Those tanks participated in a significant way in the recharge of the aquifers, as the water was kept on the surface long enough to infiltrate into the ground. As the structures are no longer solid enough to retain the water or are silting up, villages are at risk of incidental flooding.

In 1996 an international seminar was held in Pondicherry on the groundwater situation in the region. The seriousness of the situation was exposed. It was predicted that by 2015-2025 there would be no potable groundwater left in the region if measures were not taken to reverse the present trends. The Tank Rehabilitation

Project of Pondicherry (TRPP) was launched and the Pondicherry government started rehabilitating tanks, reservoirs and drainage systems in the Pondicherry territory.

That same year the Auroville unit Water Harvest started working in the Kaluvelly watershed region, an important watershed covering 750 square kilometres, including the Auroville area. Says Gilles, water-diviner, engineer and technician, the present coordinator of Harvest: "Auroville is not a closed entity but part of the bio-region and we have to be in constant interaction with the local population as there are shared concerns of water extraction and pollution prevention. Working

with the local population, creating awareness of the water situation is very important, and this too is part of Water Harvest's objectives. We also work with GIS (Geographical Information System), with satellite images as tools, to determine the nature of soils, the type of vegetal cover and the impact it has on groundwater."

But Harvest's main work was to start monitoring the water of a large number of wells, measuring the variations of water in the aquifers, their salinity intrusion and content and trying to determine whether its source was sea water or human activity.

continued on page 4

• Nations' free grouping
• Matrimandir as koan
• MM 2003 calendar

page 2

• The dilemma of the disappearing beaches

page 3

• Vanitha of New Creation
• Diving in the village

page 6

• Paper Folly review
• Young architects' forum on Int. Zone

page 7

• Shakti : joining a Tamil women's forum

page 8

A Free Grouping of Nations

Dr. Ananda Reddy gives his views on the organization of the International Zone

There shouldn't be any rush and haste by the human intellect and energy in trying to develop projects in Auroville. As the Mother puts it: "... the true method is to enter into direct contact with the inner Truth, and impelled by that, guided by that, to make an outer construction, which is not a seeking for the Truth but a creation of the Truth, that is say, the Truth-force realises itself outwardly through the human instrument."

The spirit of international unity that is increasing nowadays is out of a historical necessity, says Sri Aurobindo. The participants in the adventure of International Zone have to feel within, in a convincing manner, an internal necessity of this unity. This demands a widening, heightening and deepening of one's individual consciousness.

The galactic spiral whirl of the ground plan of Auroville indicates a motion and a movement of cosmic centrifugal and centripetal forces; it is a perfect dynamic balancing of the energy of concentration and the energy of expansion. It is as though the whole city is breathing in and breathing out – absorbing the world's unconsciousness, transfiguring it in the pavilion of Peace and Unity, the Matrimandir, the Universal

Soul, and then releasing the transformed and purified consciousness back into the world in order to unify it, to divinize it. It is the symbol of Purusha and Prakriti – Prakriti offering all of herself at the altar of the Matrimandir, the Impersonal witness Purusha, for her own self – transfiguration. Thus, all energies, movements, thought that get connected with Auroville are transformed by the 'golden tower', the golden sphere, the Matrimandir, and thereby get enriched and fulfilled.

The architecture of the galaxy pattern must be maintained at all cost when the planning of the International Zone is attempted. No rows of buildings should cross these galactic lines blocking the inflow and outflow of energies from the world into the International Zone.

In the light of its interaction with the incoming of forces and energies from the world, the International Zone becomes the most important zone in Auroville. There we may have to organize small study groups composed of researchers of history, culture, psychology, philosophy etc. who will make a study of the deeper expression of the nation-souls in the light of the vision provided by Sri Aurobindo and the Mother. They must also find out

different alternatives such as groupings based on *gunas* or psychological grounds, groupings based on cultural symbiosis etc. Once such studies are more or less finalised then the architects and planners could take it up and try to realize the results of the study-groups. Of course, in these efforts, the study-groups and the architects-groups must be formed on an international basis and not just by the residents of Auroville.

The broad outlines of the nation groupings is very obvious in Sri Aurobindo's writings. The movement of human unity that shall enter Auroville through the Western gate of Mahasaraswati and manifest itself in the International Zone has to be arranged according to a principle that would be "based on a diversity and that diversity must be based on free self-determination." That is to say:

"... the peoples of humanity must be allowed to group themselves according to their free-will and their natural affinities; no constraint or force could be allowed to compel an unwilling nation or distinct grouping of peoples to enter into another system or join itself or remain joined to it for the convenience, aggrandisement or political necessity of another people or even for the general convenience, in disregard of its own wishes. Nations or countries widely divided from each other geographically like England and Canada or England and Australia might cohere together. Nations closely grouped locally might choose to stand apart, like England and

Ireland or like Finland and Russia. Unity would be the largest principle of life, but freedom would be its foundation-stone."

The same principles that Sri Aurobindo applied to the formation of human unity should and must be applied to the groupings of the nations in the International Zone. Doing otherwise would be to impede and to delay indefinitely the inner movement in Nature towards human unity. If wrong forces and mind-born plans get crystallized at the International Zone there could possibly be chaos and confusion not only in Auroville and but on a larger scale too. This is because the International Zone, more than any other Zone, represents symbolically a miniature world-union.

"It is easy," wrote Sri Aurobindo, "to build up a system in the mind and propose to erect it on foundations which would be at first sight rational and convenient. At first sight it would seem that the unity of mankind could most rationally and conveniently arrange itself upon the basis of a European grouping, as Asiatic grouping, as American grouping..."

But such a continental grouping has an innate danger, as Sri Aurobindo warned in the following passage taken from his essay on "The United States of Europe":

"It is evident that in the present state of human egoism it would, if



Dr. Ananda Reddy

formed, become a tremendously powerful instrument for domination and exploitation of the rest of the world by the group of nations which are at present in the forefront of human progress.... But the chief objection to the idea of a United States of Europe is that the general sense of humanity is already seeking to travel beyond its continental distinctions and make them subordinate to a larger human idea."

It is only with the increase of the supramental consciousness on earth, its increasing influence on human life, that this sense of universality and unity can grow. That is because the very essence of the supramental consciousness is universality. Hence the immense importance of a body like Auroville which wants to be the very physical foundation of the supramental consciousness upon earth.

(This is an edited version of a talk given at this year's Auroville International meeting in the U.S.)

OPEN FORUM

Matrimandir as koan

The 'impossibility' of the Matrimandir problem may contain its solution

On a number of occasions over the years there have been issues which have divided Aurovilians. The split from the Sri Aurobindo Society in the mid 1970s, the status of the Galaxy Plan and the role of the government in Auroville are just some of the topics which have generated fiercely partisan debate.

Not all of these issues have been fully resolved. Yet a recognition that enormous amounts of community energy have been wasted in polemics, to say nothing of the human cost to those who have been deeply hurt, has led in recent years to a renewed emphasis upon harmony and collaboration. For example, the proposals for a new Auroville organization attempt to reconcile, or at least contain within one frame, two beliefs which have deeply divided us in the past – that authority should reside with the Residents Assembly, and that it should be delegated to those with a higher consciousness.

It's ironic, therefore, that just when we are congratulating ourselves on clambering out of the bear pit we are suddenly faced with another seemingly even more divisive issue – the question of whether Matrimandir should be perceived as the visual focus of the town, able to be viewed from any of the surrounding structures, or if it should be secluded, protected, by trees and rich vegetation.

On the face of it this is simply a design issue. But this is Auroville, and in Auroville seemingly simple questions are often complicated by issues of personality, power and ultimately, I suspect, different interpretations of the way that Mother's force works.

Matrimandir, of course, is no stranger to controversy: some of the key players have been locked in argument almost from the day of its inception, and almost every major stage of the project – the digging of the pit, the support structure for the outer skin, the nature of the outer skin itself, the disks – has generated disagreement. Some of these differences have resolved themselves in the process of the work – those who initially believed that all work on Matrimandir should be done by Aurovilians would probably still be at the stage of excavating the original hole if they had won that particular argument – some, as in the 1987 decision to make Piero responsible for completing the inner chamber and Roger for the rest, were decided in highly-charged community meetings.

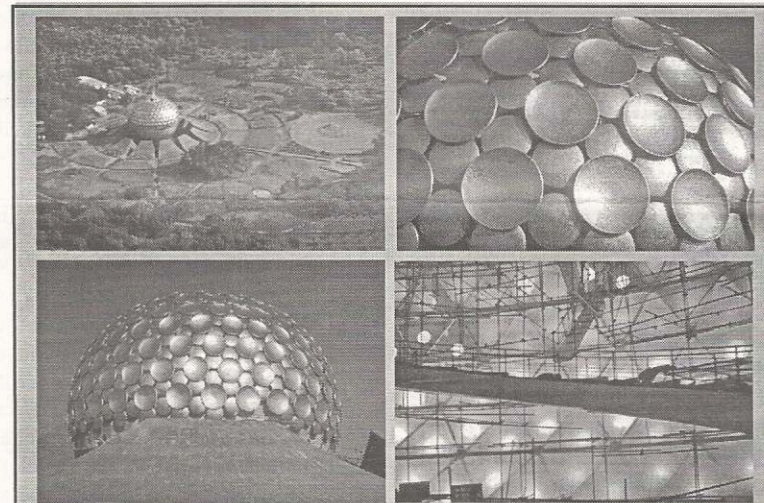
The present question of what Matrimandir's physical and psychological relationship to the city should be has generated impassioned statements from various parties, but it has also led to the recent publication of a document containing almost everything that Mother has written or spoken about Matrimandir. This attempt by Gilles Guigan to bring light as well as heat to the controversy has been widely and deservedly praised. Yet while this document is invaluable as background material I would suggest that the underlying assumption – that an examination of everything Mother wrote or said on the topic will necessarily lead to the solution of how Matrimandir should relate to the city – may be flawed. For this assumption, in turn, relies upon two other assumptions. Firstly, that what Mother expressed in 1972 or 1973 necessarily

supercedes whatever she said earlier and, secondly, that the last word has been uttered about what should happen at Matrimandir.

To question these assumptions is highly controversial. Yet to accept them is to accept that, firstly, Mother was a simplistic, 'linear' being who could not embody what, to us, are contradictions and, secondly, that evolution vis-à-vis certain aspects of the design of the Matrimandir complex (the gardens and lake, for example) either stopped dead in 1973 or, if it continues, reveals itself only through a particular individual.

Do anyone of us believe we are infallible in interpreting Mother? Is it likely that Matrimandir, as the physical manifestation of an evolving consciousness, is itself immune from evolution? As to Roger's role as sole intermediary, Roger himself tacitly admitted that the latter is not the case through requesting Paulo to take up responsibility for designing the gardens (an offer Roger has subsequently revoked).

The suspicion, in fact, is that some people cling to these assumptions not so much because they believe in them as because the alternative is too awful to contemplate. For questioning these assumptions appears to open the door to individual, highly subjective interpretations of "What Mother wants now", leading to the horrific prospect of design issues being decided by the Residents Assembly. That danger is undoubtedly there, will always be there as long as we reside in our ordinary selves. But are these sufficient grounds to make us seek safety in the book of the past rather than attempting to identify



Matrimandir

2003

The Matrimandir will be the soul of Auroville.

— The Mother

Matrimandir calendar 2003.

A spiral-bound wall-calendar 27 cm x 27 cm with 12 big Matrimandir photos can be ordered from tine@auroville.org.in or Tine, Aurogreen, Auroville 605101. The price in India including mailing and registration charges is Rs 200; the price abroad including air mail and registration charges is US \$ 5. The photos can be viewed on the Auroville website. The calendars can also be ordered from the Auroville International Centres in Germany, The Netherlands, United Kingdom and USA (addresses see subscription box on page 8) or from Auroville International France, BP

with, to live, what may be pressing for manifestation now?

In this context the present (as well as historical) 'impossibility' of the Matrimandir situation – the collision of mutually exclusive viewpoints – may actually be a grace. For, like a Zen koan, the contradictory perspectives seem designed to baffle and exhaust our normal thinking processes so as to provoke enlightenment at another level. They invite us to step back, to empty ourselves of our accumulated beliefs and assumptions, our desires to shape and control events, in order to make ourselves integrally available for That

which is seeking expression.

In recent months some Aurovilians have spent much energy on shaping the structure of a new internal organization. This is important, it is indispensable, but it is only a beginning. Now comes the infinitely harder work of creating the right environment – a climate of safety, trust and mutual valuation – for us to embark upon our next collective adventure: the casting loose from our safe moorings and the setting up sails upon the sea of the Now.

Matrimandir, as always, offers us the way.

Alan

The disappearing beach dilemma

Auroville beaches are under imminent threat of being eroded

Unsustainable development practices in Pondicherry are endangering Auroville's beach communities. They face the prospect of being either washed away or needing protection by massive seawalls to prevent an erosion disaster.

It has already happened in the coastal village of Kottakuppam between Auroville and Pondicherry. During the recent South-West monsoon the sea eroded a huge part of the beach and several hundred fishermen lost their homes. To prevent further erosion and loss of property, the Tamil Nadu District Collector is now considering dumping rocks along the affected coastline. Though this measure would bring relief to Kottakuppam, it would transfer the erosion to the beaches further up north, including those of Auroville.

The problem of coastal erosion originated in 1986, when the Government of Pondicherry gave the green light to develop a new harbour at the mouth of the Ariankuppam Estuary, south of Pondicherry. As part of the New Harbour, two long breakwaters – rocky wall-like structures that protrude from the shore into the sea – were built. These breakwaters interfere with the coastal currents and processes. As a result, a very significant process of coastal erosion was triggered off. It started south of Pondicherry, from the mouth of the New Harbour, and grew gradually towards the north. Every year another large chunk of beach was lost to the sea. In little more than a decade, all six kilometres of the beach of Pondicherry town disappeared. Today a rocky seawall extends all the way from Ariankuppam from the south of Pondicherry to Kottakuppam at the North. The Kottakuppam beach is next in turn to be washed away.

Beaches are like rivers of sand, part of a dynamic and complex coastal ecosystem. If one follows a grain of sand on a beach one will find that it moves in small leaps and bounds. From February to October sand grains move from South to North; from November to January they move from North to South.

Nature, left to itself, has established a state of dynamic equilibrium in which that which has naturally gone is replaced naturally. The two breakwaters at the mouth of the New Harbour interfered with this dynamic equilibrium. These structures, acting like a dam, interrupted the flow of sand from South

to North. As a result the beaches south of the New Harbour have grown immensely at the cost of the beaches to the north, which are now being starved of sand and are therefore perishing.

Auroville's beach erosion has

beach sand is now coarse as the finer grains were gradually washed away while the heavier larger ones have been left behind. These are the first symptoms of beach erosion. The next thing to happen is that the beach will start

coast and restore the beaches along the town by constructing about 30 "groynes" – rocky structures similar to breakwaters that stick out like fingers into the sea perpendicular to the shore. The groynes will be 50-150 m long and placed at regular intervals starting from the New Harbour all the way to Muthialpet, where Pondicherry state ends and Tamil Nadu territory starts.

While the proposed groynes will offer at best only some temporary protection and reduce to some extent erosion along the town of Pondicherry, they will even more transfer the problem of erosion to the beaches of Tamil Nadu north of Pondicherry. What the breakwaters did at the mouth of the New Harbour, the groynes will repeat at Muthialpet. Just as Pondicherry lost all its beaches, so Tamil Nadu will lose theirs north of Pondicherry State.

A concerned group of citizens of Pondicherry has meanwhile obtained independent technical opinions from the Danish Hydraulics Institute, the Delft Hydraulics Institute of the Delft Technical University in The Netherlands, the Canadian Hydraulics Centre as well as from several individual experts. Their common opinion is that the planned groynes will not solve the problem of erosion and would transfer and aggravate the problem of erosion at other locations. Unfortunately the Government of Pondicherry has not yet changed its plans, which is amazing as the proposed groynes project is estimated to cost about Rs. 40 crores, an enormous sum compared to the construction cost of the New Harbour (about Rs. 20 crores in 1986). Moreover, Pondicherry port is classified as a minor port. Since New Harbour was completed in 1989 not a single commercial ship docked there until the month of September 2002 when one ship anchored and New Harbour was used for the first time ever. During the last two years only 16 ships came to Pondicherry, but they used the "New" pier opposite the Ashram Park Guesthouse instead of New Harbour.

The problem is not one of Auroville alone, but one of the Tamil Nadu State. Should Tamil Nadu lose part of its coastal environment and its villages because of the poor coastal management practices of the Government of Pondicherry? Should Tamil Nadu citizens be bereft of fresh underground water because the sea gradually creeps inland and the water turns saline? Should Tamil Nadu lose part of its natural defences against storms and cyclones? For when the beaches are gone, the land will be open to the sea's fury. And lastly, should Tamil Nadu lose the recreational and environmental values of part of its coast?

Aurofilio



The Pondicherry seafront in 1984 (left) and 2002 (right): the beach has disappeared

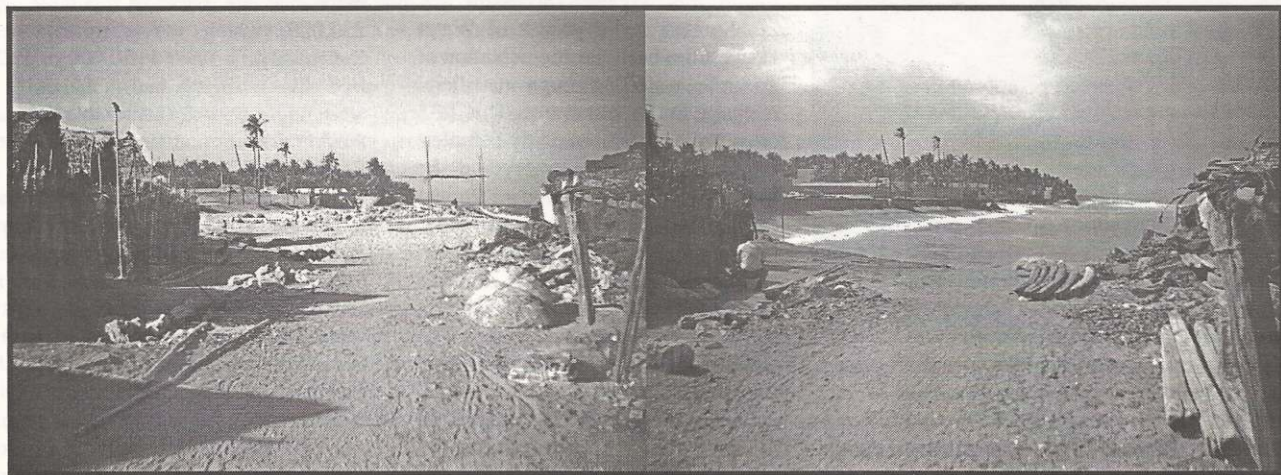


Satellite photo showing the pier and the enlarged beach (white, below right) south of the new breakwater. Pondicherry town with its characteristic oval grid pattern is north.

already started. In the last decade the Auroville beaches have changed considerably. There used to be a sandbar, a so-called "underwater island," about 15-30 meters away from the shore. It no longer exists. The beach itself has become more and more steep. The

receding. And this will go from bad to worse as long as the problem caused by the New Harbour breakwaters is not rectified or mitigated.

But instead of tackling the problem where it originates, the Government of Pondicherry is planning to protect its



Beach erosion in the coastal village of Kottakuppam. Left: the situation before March 2002. Right: the beach has disappeared after August 2002.

In brief

Visit of Secretary Planning Commission

The Secretary of the Planning Commission, Mr. Lakshmi Ratan, visited Auroville on 29th September 2002 to examine the proposals of allotment of funds under the Tenth Five Year Plan for Auroville.

Meetings on Matrimandir

A series of general meetings and two meetings of the Residents' Assembly have failed so far to resolve the impasse over design issues regarding Matrimandir and the Peace Area. The Working Committee and its Support Group have stated publicly their fear that the present tensions that surround Matrimandir may result in deep divisions. They have urged all Aurovilians to come together in a determination to move beyond the issues that divide them, as "victory of one party over another cannot represent true progress – not for Matrimandir, not for Auroville and not for the 'humanity as a whole', which it belongs to." They appealed to all Aurovilians to come together, to have the courage and perseverance to seek the highest and most integral resolution of the present conflict, "for nothing else is worthy of our soul."

Resource Group meetings

The first meetings of the Resource Group (formerly known as The Auroville Resource Group with the unwieldy acronym ARG) have taken place. In total 157 people have signed up as member of the Group, but on average about 40 people only participate at present. Its task is to prepare proposals for the improvement of Auroville's functioning for approval by the Residents' Assembly.

AVI Meetings

The Auroville International Association (AVI), founded in 1983 as a worldwide network organization has now AVI-centres and AVI-liaisons in about 20 countries. Its tasks are to make representations to national, international, governmental and non-governmental organisations about Auroville, to channel funds for Auroville's projects, to improve communication between Auroville, Auroville International members, groups and liaisons, and provide financial and other support to its members and associated organisations. In 2003, there will be two Auroville International meetings, one in Auroville from February 1-4, 2003, the other one in Chateau de Meridon in Chevreuse in France from June 10th-14th. For info and registration email avi@auroville.org.in or devasmita@wanadoo.fr

Correction

In "The added percentages" on page 4 of issue No. 165, October 2002 the line 6. Auroville Fund percentage has to read 2% of 1-5 instead of 2% of 1-4 as stated incorrectly. This means that AV Fund takes 2% of everything.

Monitoring groundwater

continued from page 1

Under the directives of the then Tamil Nadu government, Harvest also started rehabilitating and desilting traditional tanks in villages of the region. Harvest has been working in an area of some 250 square kilometers of the watershed ranging from Kaluvelly swamp to Auroville and from the sea-shore to some 15 kilometers inland. The geographical and geological particularities of this area make it a distinct entity. The water level in this area has been going down very much, and saline water has entered certain parts of the aquifers.

Harvest has been well-supported in its work and is collaborating with many different Indian and foreign associations. In 1999, Harvest developed a partnership with members of the CNRS (National Centre for Scientific Research), in France to do research on two specific subjects: determining the source of salinity in the Kaluvelly zone and assessing the way undergroundwater circulates. Says Gilles, "These elements are very important. With these parameters, we can define how contamination of groundwater happens, whether it comes from seawater or from another very saline aquifer, which has migrated, or whether human activity is the source of contamination. It makes us understand the risks."

Today, after extensive research, the various aquifers of the sector and their particularities are better known, and that helps to assess the situation. The Vanur Aquifer, which covers a large part of the region and is most in use for irrigation in the sector, is a 150-meter thick formation with a great potential of water stockage. However, salinity, the source of which is believed to be human activity, probably agriculture, has been infiltrating in certain parts of this aquifer. The salinity has now started to migrate and the Vanur Aquifer is progressively becoming totally contaminated. In the Auroville area, the formation is very deep, and holds a lot of water. But its high salinity content makes the water, in most places, no longer usable even for irrigation. "This water has become toxic for plants, and if used for irrigation, the production capacity of the fields will gradually be reduced. The Vanur

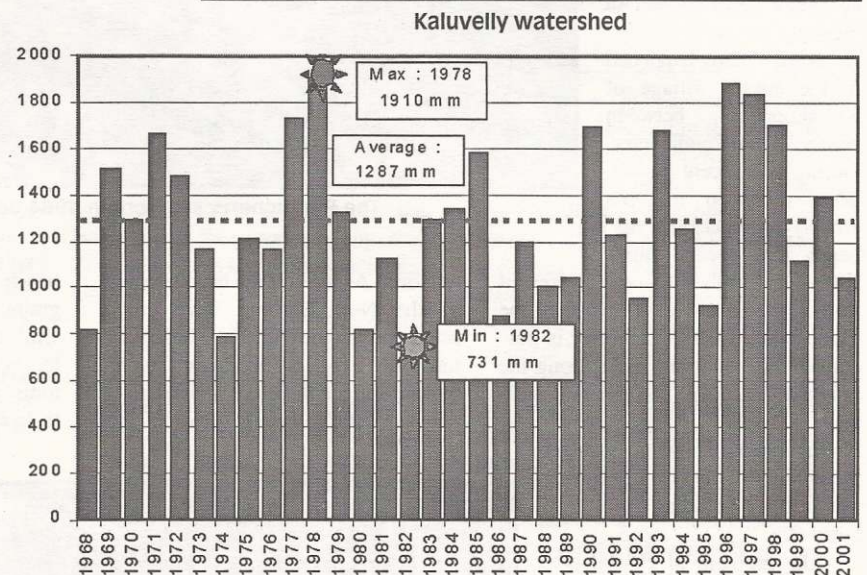
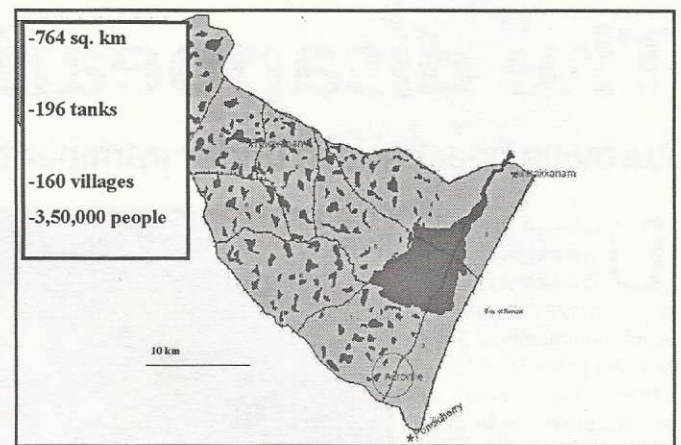
Aquifer water should not be used in Auroville anymore," insists Gilles. "There is not only the risk of polluting Auroville directly, but we would also be participating in the further degradation of this aquifer."

The Cuddalore Aquifer, which crops up in almost four fifths of the Auroville area, covering the city area and a large part of the Green Belt, is much in use today for providing water to Auroville. It is also being used for vegetation development. But the Cuddalore Aquifer is very thin in the city area. It gradually becomes thicker as it continues towards the east, and when arriving in the Auromodèle area, reaches 70 to 90 meters of thickness. "The Cuddalore Aquifer is very important for Auroville," explains Gilles. "Its geographical particularity makes it possible for us to control a lot of factors, like recharge, extraction and pollution and Auroville should work on developing it." Unfortunately, though the water of the Cuddalore Aquifer is of high quality and perfect for consumption, its level has gone down a lot due to the last three years of inadequate monsoons. The aquifer has actually dried up in the city area and water is now being extracted from the aquifers below, the water levels of which are also going down. In the Auromodèle area, however, due to the thickness of the formation, the water level goes down much more slowly than in the centre, and because of this active storage, it has great potential. The extraction capacity of the Cuddalore aquifer is therefore limited, and it largely depends on adequate rainfall to get recharged. Explains Gilles: "Thanks to the dedicated environment rehabilitation work of the last 35 years in Auroville, no heavy run-off has been observed for the last three years. This by itself is a great achievement. However, it has not been enough to significantly recharge the aquifers. The fact that this water has been recharged also doesn't mean that it can now be extracted further down. It is more complex than that."

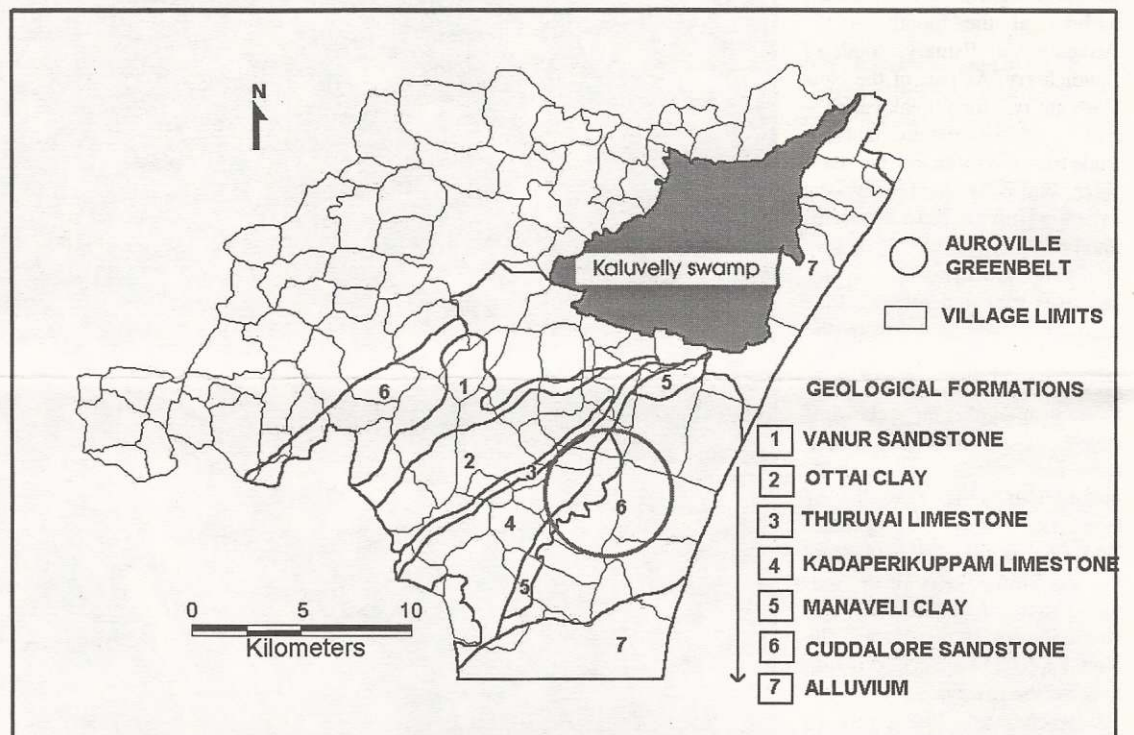
In terms of development and town planning of Auroville, Gilles feels that the availability of water in the area is not sufficiently taken into consideration. In the Auromodèle and Center field zone, the capacity of groundwater

recharge is very good. It is an important zone in terms of favorable infiltration in groundwater. That, however, and the fact that the Cuddalore Aquifer is close to the surface, make it particularly vulnerable to risks of direct and rapid pollution. This area is defined in the Auroville Master Plan as a future high-density zone which would mean that if planning is not done very carefully, the risks of pollution would be extremely high. "One of the main criteria, when planning a zone for development, is to study the impact on the environment. One has to plan how to prevent or control the potential risks," stresses Gilles. This notion, he feels, has not yet been given enough importance by town planners and developers. "Auroville's planners should adapt their plans or visions to the natural factors and the environmental realities in cooperation with the people. Ultimately, the social factor is the key to success on all levels."

Based on an interview by
Emmanuelle



Yearly rainfall in Auroville from 1968 to 2001



Surface geological formations in Auroville and the bio-region

Working in the bio-region

Two Auroville units rehabilitate water bodies in the surrounding area

Many centuries ago the area around Auroville was covered by an interconnected network of rainwater storage tanks (erys) and ponds (ooranis) which not only provided for some months drinking and irrigation water after the monsoon rains, but also recharged the groundwater table as well. The thousands of interconnected tanks guaranteed a decent crop, and sometimes even two crops a year. This changed with the advent of the diesel engine. Farmers could pump unlimited amounts of water at cheap cost from the first aquifer, up to a depth of 40 meters. When submersible electric pumps appeared on the market and the Government agreed to supply free electricity to farmers, the second aquifer started to be mercilessly tapped, leading to depletion of groundwater and in some coastal villages to intrusion of sea water into the ground water. The tanks and their connecting channels were forgotten, silted up and fell into ruins.

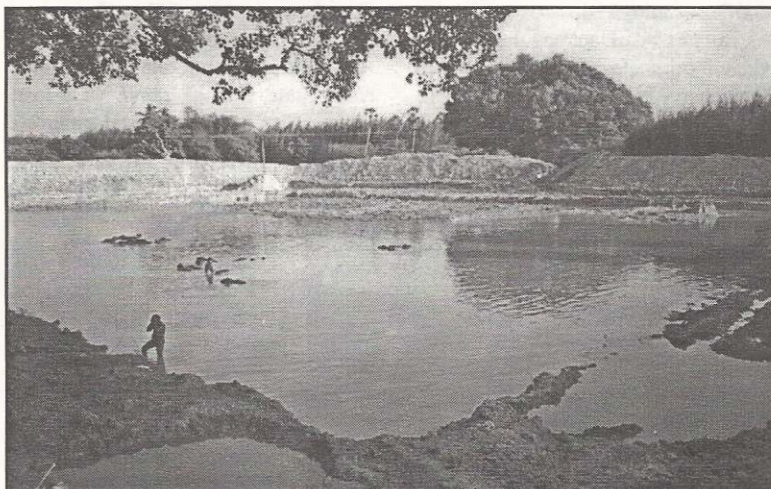
Realising that Auroville's water situation is intimately connected to

that of the surrounding area, Auroville's units Palmyra and Water Harvest have taken it upon themselves to clean and repair old tanks and dig

(ICEF) to rehabilitate the integrated tank management systems in the Kaluvelly Watershed in the Villupuram District of Tamil Nadu.

in a 30% contribution. Water Harvest has been equally active in the same area, rehabilitating water bodies with the help of two excavators donated by Tata. Both units have been active in creating village water-user associations to ensure the full-fledged involvement of the villagers, so that the tanks and waterways will be maintained once the work is done. So far the projects have been successful.

Another major project of Water Harvest has been the augmentation of ground water through artificial recharge in the Vanur area. This 1.35 crore project has been partly completed. Harvest is also involved in the Tank Rehabilitation Project Pondicherry, a project of the Government of Pondicherry in co-ordination with the European Union to rehabilitate all the tanks and supply canals of Pondicherry Territory. The wider objective of the project is for a long-term increase in agricultural income from irrigated crop production in Pondicherry region by restoring the full potential of the existing 84 irrigation tanks in the region. Carel



A kolam renovated by Water Harvest in the Kaluvelly watershed area

out the ancient water ways. In 1999 Palmyra was granted a Rs 9.6 crores (US \$ 2 million) five year project by the Indo Canada Environment Facility

Under this project Palmyra/ICEF contributes 70% of the total cost required for the tank rehabilitation work, while landholders in the command area put

Doing a V

continued from page 1

They have drilled some test wells in the until now they have not shared their data. At are in the process of asking them to allow us their wells.

"The next problem was to create a base maps that are publicly available are on 250,000, which are unsuitable for our. But maps on a scale 1: 50,000 or 1: 25,000. Just when we had managed to obtain these maps, with the invaluable help of the S the Auroville Foundation, we learned that an Bangalore (ISROE), which was doing similar national research level, had received official they were forbidden to use these maps for. We had to drop the idea, and there was no o than to use a Global Positioning System. (GI

"This sounded easy enough. We subcontracted work to the Pondicherry based organization (Foundation for Ecological Research Adv Learning) but they ran into unexpected difficulties achieved through Satellite Positioning, Auroville's close proximity to the Equator GPS satellites are in the Northern Hemisphere often than not the satellites were too close

Initiating water conservation systems

Two individuals create awareness about the need for water conservation to reverse the present water crisis

Manfred and Rolf, both from Germany, have been in Auroville since the early 1990's. Today they live in the 'Petite Ferme' community in the Auromodèle area. They are both very concerned about the environment, and more specifically about water over-exploitation and mismanagement.

On the individual level, they both do a



Manfred checking the water level in the water storage tank

lot to reduce their water consumption. One of their initiatives is rainwater harvesting. The rain-water is collected on the roofs of both their houses and then flows

down through pipes to an underground tank, which was specifically built for this purpose some five years ago. The underground tank, which is six metres in diameter, three metres deep and covered with a dome, has the capacity to hold 90,000 litres. When the monsoon is good and there are heavy rains, it can fill up in a week. The water is then extracted using a

solar powered pump and used for irrigation. It is usually enough to water the garden during two to three months in the year.

Explains Manfred: "Of course, the system of irrigation used is very important. At present we are still using a hosepipe for watering the garden, which, however carefully done, makes for water wastage. We are, however, thinking of switching to drip irrigation. With that system in place, the rain water we collect would be enough for the garden for a whole year."

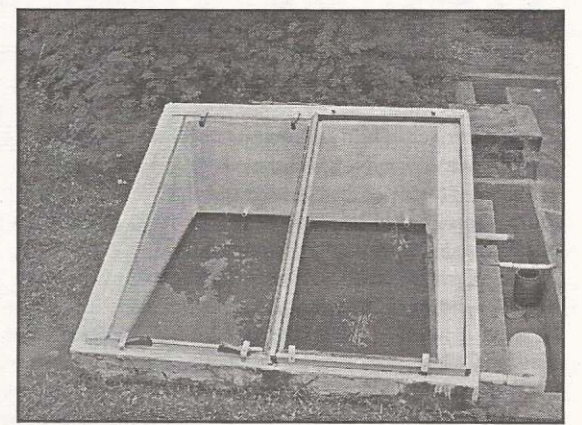
Rolf has recently taken up the maintenance of roads in the Auromodèle area. He explains: "When it rains, the water runs down the roads like a river. This not only makes driving dangerous, but the roads also become expensive to maintain and repair." In order to keep the roads free from water and to contribute to recharging the ground water he has started digging pits by the roads. The rainwater flows there and infiltrates into the soil, finally reaching the underground water table. Similarly, many plots and open fields in the area have been bunded, so that rainwater doesn't wash away but infiltrates into the aquifer.

Manfred has also done a lot in trying to create awareness about water and its mismanagement in the Auromodèle area. As the community has many houses with large, individual gardens, the water consumption is extremely high, and most of it is used for irrigation. "When I started working in this field," says Manfred, "the water consumption was as much as 5,500 litres per house per day. Those figures were unacceptable." To create awareness of the amounts of water consumed he tried to convince people to install individual water meters. He also tried to convince swimming pools owners to install effec-

tive filtering systems so that the water doesn't have to be changed so often.

Today, largely due to Manfred's efforts, the water consumption has been reduced by fifty percent. But the figures are still very high. "A great part of the community's water is used for garden irrigation, usually done by hosepipe, often under the sun. That makes for a lot of water loss through evaporation and run off, and only a very small part is absorbed by the soil. Many people employ gardeners, and they should train them and explain the situation to them, as well as think of alternative irrigation systems," he insists.

Manfred has also experimented with seawater desalination using solar energy. It is a simple system which works like a greenhouse. The saline water is kept in black basins surrounded by a small brick wall and covered by a sloping glass roof. With the heat of the sun the water evapo-



The solar water desalinator in Petite Ferme

rates, condenses on the inside of the glass roof and then drips down to a channel, which collects the distilled water. "As the energy of the sun is not very concentrated," explains Manfred, "the quantity of desalinated water per square meter amounts to only three to five litres per day, which would be enough for drinking water." At present, his system covers seven square meters.

However limited their reach, individual initiatives like these will help make the difference to reverse the present water crisis.

Emmanuelle

When water turns salty

Seawater intrusion in the aquifer threatens Auroville beach communities

The beach communities of Auroville are under threat. In mid-July, the dozen residents of the Repos community were greatly alarmed to find seawater had infiltrated their bore-well. The situation rapidly worsened. Soon, even the water from the hand pumps had turned salty. Other Auroville beach communities like Gokulam and Quiet and the beach villages Chinnamodeliarchavady, Perrya-modeliarchavady and Bommarpalayam too have witnessed seawater intrusion in some of their wells and hand pumps. It appeared that the entire coast from Pondicherry to Chennai is suffering from the same problem, a problem which has also affected parts of Kerala on the western coast.

Saline intrusion happens when the underground water level is lower than the sea level. This creates a vacuum and allows seawater to come in. Manfred, who has done a lot of research on the subject, explains,

"When the water level of a well is below sea level, then the pressure of the sea water opens small channels, through which the sea water enters. Once the connection has been made, the channels will never close again. The situation is irreversible; the well can not be used anymore."

The problem is the extremely low level of the underground water table. This is only in small part due to the near failure of the summer monsoon this year. The root cause is prolonged over exploitation of ground water, mainly because of free electricity for farming. Farmers, however, are not the only ones guilty of overexploiting the ground water. Individuals too, though to a lesser extent, contribute to the lowering of water levels. Auroville residents are no exception; Auroville's average consumption per capita per day being extremely high as compared to the average in India.

The residents of Repos, in order to remedy the situation, have tried to

solve the problem by deepening the bore well by some twenty-five feet. However, this failed, and the water in the well continues to be salty. "This leaves no other solution than seawater desalination," says Myriam, a Repos community member since many years. "There is already a desalination system in place in Repos, but that can only desalinate a hundred liters per day. The Auroville unit Aquadyn has proposed a 'Reverse Osmosis' device whereby sea water is pressurized through a micro-filter membrane in which the minerals are caught. The water coming out is then free of salinity. We would need a system that can filter five hundred liters per day, which would cost fifty thousand rupees (US \$ 1,000) plus operating charges. These are high as desalination takes a lot of electricity. We have approached the Auroville community for financial support."

Fortunately, after some unexpected but long-awaited pre-monsoon rains,

the water from one hand pump has turned sweet again, due to the run-off water from inland on its way to the ocean. Until today, this water is enough for the basic needs of the residents, drinking and washing, and, thanks to the rains, the coconut palm trees and garden plants are still alive. But nobody knows for

how long the water will remain sweet, and if it will continue to rain.

Emmanuelle



The hand pump of Repos gives salty water

Water Consumption Patterns in Auroville

"Although globally Aurovilians are very environmentally conscious, at the level of the 'environmental act' or the 'civic act', they are not performing very well," says Gilles, the coordinator of Water Harvest. The water consumption of Aurovilians is high, the greatest part of which goes into garden irrigation. The communities of Arati, Creativity, Invocation, Line of Force, Prarthna, Prayatna, Sailam and Surrender share a common water tank and we can monitor their consumption pattern as they have separate water flow meters. The average consumption pattern is 404 litres per capita per day, the maximum is 1033 l/c/d, the minimum 173 l/c/d. We estimate that 220l/c/d is used for domestic purposes. In comparison, the average water consumption pattern for domestic purposes in an Indian city accounts for 135 l/c/d and in a country like France for about 145 l/c/d."

Though Auroville at present only recycles 4% of its wastewater, more and more wastewater treatment plants are being put in place. "But you cannot recycle all your domestic water," says Gilles. "A lot of the water is lost in the process because of evapo-transpiration. For example, Invocation, Arati and Surrender share a wastewater treatment plant. But as there is about 40% loss in the process, only 60% of the domestic water use gets recycled and is used for garden irrigation. This means that someone who draws 1033 litres/day from the watertank uses 220 litres for domestic consumption, 813 litres for irrigation and an additional 132 litres for irrigation of recycled water! These high figures are unacceptable. Our water consumption pattern has to be drastically reduced," insists Gilles. We should also make a conscious choice as to which type of vegetation we develop," he adds. "We should choose the types that consume less water, have a good capacity of infiltration and that can survive droughts."

Another problem is the attitude of Aurovilians. Often conflicts arise because individuals or communities do not want to share wells. That means that new wells have to be dug constantly. "Water, as a natural resource, should not be managed at the individual level," stresses Gilles, "it should be publicly managed. Our attitude has to change. We have to spread awareness of the environment, but also, and most importantly, we have to become sensitised to the situation ourselves, and act accordingly."

Emmanuelle

Water Resource study.

area, but present we to monitor

map. The a scale 1: purpose. are classi- copies of ecretary of institute in work on a notice that their work. ther option (S) racted this on FERAL ocacy and lties. GPS but due to (and most ere), more o the hori-

zon. In consequences, half of the coordinates lacked sufficient accuracy and needed re-surveying. Then the GPS equipment broke down. What should have taken three months again took over a year.

"Nevertheless, what resulted is the most valuable result of the water study so far: a base map as an accurate reference. It was overlaid with a grid satellite image and shows not only road patterns, the true extent of the surrounding villages, Auroville settlements and even big trees, but also the land use patterns of the area such as mixed forests, sugar cane plantations, peanut fields and cashew topes which is very relevant for the project – and of course all the wells, referenced in x/y/z coordinates. When we superimpose the results of the Auroville land surveys on this map, there is a complete picture."

"Auroville's unit Water Harvest and Pondicherry and Tamil Nadu Government Departments provided us with meteorological data. Interestingly, some of the oldest data came from Auroville itself, recorded in the small meteorological station set up in Certitude in 1969 by Chamanlal Gupta. It operated for a number of years, measuring temperature, sun-intensity, relative humidity, wind speed and rainfall."

"In all, it took two years for data collection and the creation of a base map instead of six months as project-

ed. So we are way behind schedule. But with what is available today, we can go for the next step."

That next step has meanwhile been taken. It involves the Pondicherry Engineering College. Its Department of Civil Engineering is scrutinizing the collected data and has agreed to make the first "static model" of the hydro-geological situation in the area. This model will show the pre-monsoon, post-monsoon and dry season situation, and will allow to a certain extent the prediction of the water availability.

But the big challenge is to develop the "dynamic model" which could serve as the basis for making long-term assessments of water availability and could answer questions such as "what happens if the water draft is increased by say 500% and we get a succession of 2 dry years?" Developing dynamic models is state-of-the-art in the West where highly sophisticated programmers do computer simulation. "In India there is ISROE and there are Indian Institutes of Technology (IIT's), but it may be difficult to get experts with real experience," fears Jan. "Moreover, we need to get the expertise and training ourselves so that over the years the model can be improved and modified as per our needs and we can run our own types of scenarios. But that's for the future."

In conversation with Carel

Vanitha of New Creation: An Untold Story

New Creation School's mission to offer opportunities to under-privileged children bears fruit

Years ago, a little girl called Vanitha was admitted to New Creation School. As she comes from a family in the most impoverished section of her village, the girl's widowed mother despaired of being able to care for Vanitha properly and asked if she could be admitted to one of the New Creation student boarding houses. Time went by. Vanitha passed with great credit through the New Creation School, and later After School. Last week, a group of friends attended a function at Vellore's CMC Nursing College, one of the best medical colleges in South India, where Vanitha is now studying to be a midwife. As part of the day's entertainment, Vanitha performed a classical Indian dance, the training for which she had received during her years in Auroville. Before her show Vanitha informed us with pride that, on the basis of work completed so far, she is among the top students at her college.

Vanitha's success is heartening for those who work at Auroville's outreach schools. When even the most positive among them can be bogged down by meaningless difficulties compounded by daily skirmishes with problems of finance and other essentials, some of them are forced to ask themselves the question:

"What's the point, really?" At dark moments like these, a story like Vanitha's restores their faith in the manifesting an Auroville vision that continues to glimmer even after an unrewarding day's work. It also helps them to remind themselves that "this is what it is all about!"

Mike, a teacher from the UK currently looking after the New Creation school in the absence of Roy, the coordinator of New Creation School, believes with many others that the children they serve from poor Tamil villages are not in any way inferior in body, mind, or spirit to the most privileged students at an American or European university. The tragedy of so many young lives is that they do not receive the clear but gentle nurturing which will bring out their talents. Indeed, sometimes education can actually make life worse for a child. Its effect can be to convince a person that he is a failure just because he does not suit the particular tasks and ways of working prescribed, for no sensible reason, by a misguided school.

If there is a mission to New Creation School, Mike sees it as "the will to discover the real, unique person within each child and to develop this individual as nature – as God intended. Of course, this



Vanitha

does not mean that all our students will be rocket scientists, or even successful at colleges. We all are proud of Vanitha but rejoice as much over many other young people who have been through New Creation over the years. A quick "brainstorm" in the staff room of past New Creation students brought to mind Ashok,

who is currently studying at a very high level, Sathya, whose English is exceptional and who wishes to study English Literature at university level, Murugan, who is taking a Masters degree in computer studies and Valli, who won a scholarship to study in England after which she was offered a position in the USA, but she chose to return to Auroville.

These high-flyers are not the only successes of New Creation. Currently displayed in the dining area at school is a selection of paintings by Raja, a talented local artist. Earlier this year, Raja exhibited along with several other Aurovillian painters and his work was much commended. The fact that Raja is only 11 years old and studying in the VI standard at New Creation is not to suggest that Raja has learnt his artistic ability at school. The point to keep in mind is that his innate talents could find a space and the opportunity to manifest. The other day Mike discovered the morning exercise session in the central performance area being directed with great poise and authority by a tiny but confident person while the teacher-in-charge stood discreetly to one side. The little person was Tamilarisi from the Vth

standard, not more than a meter high but relaxed and in complete control of the entire school!

New Creation School is a special, possibly a unique place with its combination of Tamil, Aurovillian, and other influences. It continues to operate because of the goodwill and support – including financial support – of many in Auroville and outside. The school offers myriad opportunities to some very under-privileged children and also adults in search of better vocational training. The community is presently establishing four craft workshops: carpentry, metalwork, electronics, and tailoring. School children can study in these workshops during the day, while older people, whose interests are practical rather than academic, can be trained after their respective work days are over.

Vanitha was sad that she had to leave Auroville to train as a midwife but her firm resolve is to return and to work here. She is clearly someone with the potential to give her energies to the community as a whole. This is possible not only because of her wonderful talents, but also because of all that this community has been willing to give to her.

Abha Prakash

Diving in the Village

Scotsman Jamie finds a new passion in Auroville

It's a balmy Sunday afternoon as I hike down to the brown oval house by the East Coast Road to meet Jamie, the ex-diver. "Just down the lane by the massage centre, before the pizzeria", he guides me on the phone with a characteristic Scottish accent. I am filled with both curiosity and some trepidation – probably because he is a seaman... What's he doing in Auroville?

Jamie Beattie comes as a complete surprise. Dressed in a grey white madras print lungi (the Tamil style wraparound), lean, ruddy, tanned, a shock of shoulder-length blond hair, honey-green eyes; and he greets me in hindi! I fumble, caught off guard, and then switch into rusty hindi to answer back cautiously. Thankfully he returns to English.

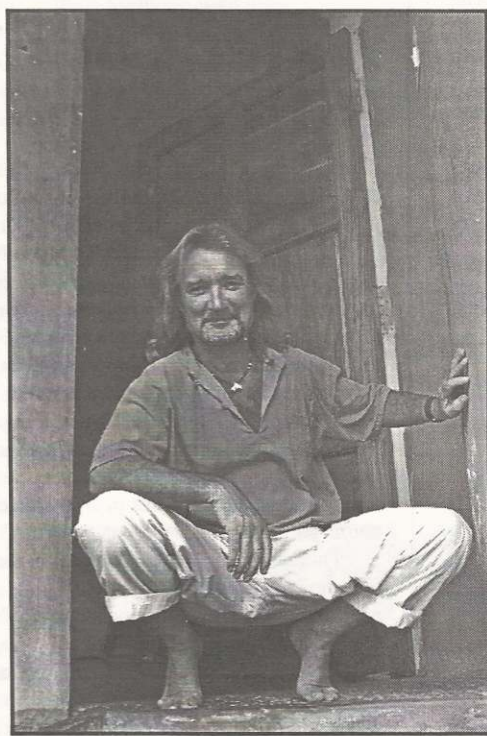
"You know, I was born in India – in Assam", he says. "Lived the first seven years of my life here. My mentor was Sitarum. He taught me everything... Kisindhoo, Mona, Bidu... they were my friends", he goes off into a reverie lost in the reminiscences of the Assam of his childhood. "My ayah was outrageous. I grew up on a diet of rice, dal, chapathi. Hamare saath hindi me baath karthe (they spoke hindi with me)." He breaks into a thick Indian accented English, speaking in staccato. "I-spoke-Eng-lish-like-this – Did-not-know-any-Eng-lish-until-I-was-sent-to-board-school-in-Bri-tain." Suddenly he bursts out, "Can you believe how it must have felt for a seven year old to be taken away from the world he knew to boarding school? How it would have felt to put up with stew!" The intensity of his emotions hits me like a tidal wave. We both let it pass...

"Got here to Auroville accidentally", he softly continues, "Landed here by complete mistake! I will never criticize it – I don't think I could... I think it works here... No where else it has worked – not even in America! In Auroville, there is a great amount of love!" he exclaims as if he has hit upon a supreme truth.

"I live 'outside' of Auroville", and as if to apologize for that, he declares, "I am Scottish; I am from the centre of Edinburgh – still own a property there.

I have been all around the world. I know Calcutta, Delhi, Bombay, Singapore, Sydney, Adelaide... But nothing comes close to Auroville. When I was 18, I lived in a Kibbutz. One place in Auroville comes very close to that – Aspiration! Some time ago, Joan and I were invited to stay there by this wonderful Russian." Joan, his partner, is a voluntary teacher at the New Creation School.

I let him continue in his stream-of-consciousness mode. He is a story-teller, and I can see that. I need to be patient.



Jamie

What did he do before he came here? "A diver for 20 years! Worked for oil rigs to inspect welds underwater. I was the best man they had. I have trained so many Indians too", he proudly declares, and quickly pulls out his log book from years past; it dates from 1985. "See..." It is a meticulous daily log unusually well preserved for its 17 years. There are entries of places I have only heard about – Bombay High, Yarmouth, the North Sea – I can see that this was his first love. "You have to respect the sea. You cannot mess with

it", he says gravely. "I gave it all up in 1995. Then I was taking care of adults with learning disabilities until I came here; people with autism, brain damage, Down's Syndrome."

Suddenly his face lights up, his eyes sparkle, and he gushes, "Priya, this story is not about me! No! This is about Venkat. Him and his buddy Baskaran – that's whom the story is about." The story has taken a turn, and his voice begins to rise, "Every single god or whoever preordains us to try and do our bare job... they got through to Venkat and Baskaran! They are such damn good people – they really are."

Finally Jamie reveals what holds him to Auroville. The Auroville Health Centre runs several outreach programs at the villages, one of which is a rehabilitation and physiotherapy service for adults and children with physical disabilities. Venkat is a physiotherapist attached to the Auroville Health Centre, and Baskaran assists him in this work. "They have carved up the Auroville villages between them, and they look after everyone that is referred to them."

I know there is no stopping Jamie now; this I can clearly see is his passion. "I have been involved with them for two years – we go to colonies where there are 'lower' caste people; we go into their homes and work with them. You've seen my log book," he suddenly challenges me, "I go down 600 feet over and over again.

But I do not have the courage that these two men have. You know they get slugged by the villagers, they get slugged by everybody... and they just take it. They are the people of this story! Please... please... please write about them," he pleads. I nod mutely moved by his emotions.

Jamie abruptly stand up, walks quickly to a far side table, and brings over a notebook and his reading glass. He pulls out a little white note from inside. I lean over and see a few names scribbled in – Pandurangan, Kumari, Mutharasu. "I want you to write about these people," he says, and solemnly reads out their names. They roll off his tongue easily.

He talks first about Pandurangan, a 44 year old man who used to work at the Matrimandir until he broke his spine while clearing a tree at work. He lost his ability to walk and therefore work too. His wife has been given a job at Matrimandir since then. The Auroville Health Centre provided Pandurangan with an external spinal frame. He has also been undergoing physiotherapy therapy with Venkat, the fruits of which have been recently realized. "Pandurangan has started to walk!" exclaims Jamie, and his excitement is palpable.

"Now Kumari and Mutharasu are another matter. They are sister and brother. They are 4 and 5 years old. Both have microcephaly (very small heads) – they both have stunted brain growth and cannot do anything without help. We think the culprit was pesticides! Their father worked in a field where they used a lot of it," he explains.

"I want to fight for these kids! I want to take this up with the pesticide people! I want to write to them. I want to tell them, 'Listen man, we think there is a good chance that this is a problem from your gear. How about some compensa-

tion, eh? How about some rice for this family?' And then they can put a great big advertisement saying that they, the pesticide people are good people; that they take care of their responsibilities." I witness his indulgent dream of a perfect world which I am lost in briefly myself... He continues, "And then I realize it's India. You can't screw anybody in India unless you go right to the top." His sigh leaves me feeling heavy...

His tone lightens again, "You know, the whole village was avoiding this family. Then we go in. Venkat tells me – 'Jamie, I am going to use you.' Sure, I say. 'I begin to work with the children myself. I give them baths; I handle them; I play with them. And guess what? Sure enough, the next week, we see a young woman helping the family!' I sense a quiet pride in his voice. "You know, sometimes it's good to have a vellakaran (white man) do this work!" he grins.

Our meeting is coming to an end, and my tape has just run out. I want to stay longer and hear more of his stories, his experiences, his joys, his sorrows in the work he is doing. This cocky and passionate Scotsman whose heart overflows with love and tenderness for India and now the people in the Auroville bio-region.

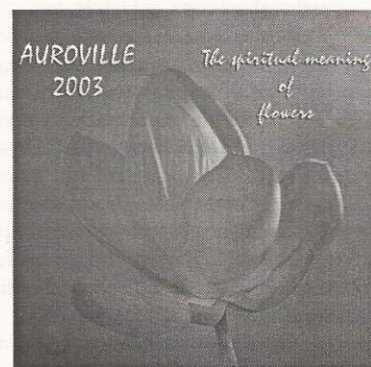
We bid goodbye for now. As I walk away with the western sun warm on my face, he shouts out to me, leaning over his balcony, his eyes twinkling, "Shukriya, behenji! (Thank you sister)" My spirit fills with a strange sense of lightness and joy.

Priya Sundaravalli

Auroville 2003 calendar by Ireno

The Auroville 2003 calendar by Ireno, showing photos of flowers with their spiritual significance as given by The Mother, can be ordered from Auroline, Sangha Auroville 605101, Tamil Nadu, India.

E-mail: ireno@auroville.org.in. The desktop calendar size is 19 x 21cm (7,50" x 8,25"), price in India Rs. 210 (sent by courier or mail), price abroad U.S \$ 5,50 sent by air-mail. It can be ordered through demand draft, cheque or postal money order.



Paper Fascination

The Auroville Press inspired an unusual exhibition. A review.

Paper is a magical thing. In the hills above Manali a shepherd boy stitches together the fine bark of a Himalayan tree to make school notebooks. In China and Japan paper is precious, treated with respect. Paper has a mystique that combines infinite utility with a throw away lightness and refinement. This rich experience of paper was on display at the Bharat Nivas gallery in Auroville, August through September: at an exceptional exhibition called Paper Folly, the result of an artist's workshop, organised by Auroville Press, the creators of a unique line of hand-made paper and imaginative products.

The exhibition covered two levels. On the ground floor, one encountered large, elegant sheets made from a variety of fibres: cotton, banana, casuarina needles and rosella. Big objects made from paper offered viewers a concentrated impact of the material: a hefty granite coloured pillow lying on the floor was, in fact, made from 'banana paper'. An over-size white bowl moulded on a dish antenna was another startling piece. On the next floor one was surprised by the outburst of multiple energies, the work of different artists and designers invited to participate in the paper workshop organised by Auroville Press.

What led to such splendid folly? In 1995, Auroville Press was going through a financially-trying time. Paper was essential for the ideas they wanted to develop: was there a



The Paper Folly Team: Aprita, Nele, Gowri, Deepa, Luisa, Shaleija, Hervé, Lalit with baby, Arzoo, Adil, Rakhee and Jason

Rakhee participated in this phase and even today, when she is busy with her own pottery, she maintains a close contact. "The basic thing we kept in mind was the principle of paper itself, taking care it doesn't become heavy, is easy to handle, keeps its natural quality. Then it got so much fun that even stuff we thought was very wild could actually be used for products."

Their enthusiasm proved so infectious that even the workers were inspired to bring material from the village and join the initial round of experimentation. "We never say this is possible or not possible, we say, 'We Try': that is our motto." More importantly for Luisa, the paper was finally crafted, made from things of life all around them, "I felt this paper belonged to Auroville, not only because of the materials but because of the spirit that went with it."

Both Herve and Luisa stress the help and kindness they have received from the Sri Aurobindo Ashram Handmade Paper Factory, in Pondicherry. "What they know they share and whenever we make a new paper we show it to them," says Herve, "they have come here a few times and are most encouraging."

A walk through the store-room reveals enchanting results. Paper of different grain and texture: fine to caress, embedded with leaves, engraved like stone; paper blonde as wheat, soft as felt, some like sheets of granite; some austere, some serene, some like a riot at a fair. All these translate into products.

"We do everything from posters to cards, letter-paper sets, portfolios, bags, artists' paper," Luisa pulls out a lovely folder in white. A natural fibre sweeps through it like a calligrapher's brush-stroke. "And we want to do everything else that will evolve." Since two years they have been exporting to Switzerland, Italy, England, Ireland and the U.S. Again, the difference is in the imaginative and elegant styling of their products. "For example," says Rakhee, "for the paper-bags for a client in the U.K. we decided to put leaves only at the bottom of the paper." This meant no extra cutting and the possibility of keeping at least one natural edge apparent. Their experiments have led to a paper that contains all design elements within itself, eliminating the elaborate cut, paste and print processes normally used which can make paper rigid or lose its charm.

"It was Rakhee's idea to do a workshop and the exhibition," said Luisa. "I was hesitant: Oh my god, how? Where's the time? But Rakhee pushed! Herve said yes immediately

so I followed!" Herve adds: "People always ask what we are doing. No one knew we were making paper, so this seemed the best way to share. There's a lot of beautiful stuff going on in Auroville you know, I hope other units will also show their work."

Organising the workshop cum exhibition was a huge amount of work. Rakhee's idea was not only to show the paper but combine ideas with other artists, designers and crafts people as well. "It was exhausting but it turned out very well." Herve says.

"People were really happy with the experience. They discovered the material. Someone like Adil, being a potter, was immediately at ease with the material. It was really worth it."

Any unusual experiments? I ask Herve.

"I once tried elephant dung. They use it in Sri Lanka."

"You did? And?"

"We got a sheet of paper that doesn't smell so bad. But Luisa keeps it far away."

Anu

SEMINARS

Bridge building

The International Young Architects annual design forum took place in Auroville this September.

They came to learn from each other and from this richly inspiring environment called Auroville, these young professional architects from far away: from Vietnam, Germany, USA, as well as from India and Europe. They came to learn, but it turned out that everybody, participants and organizers alike, became students during these two weeks. It was, indeed, a living example of an ideal Auroville scenario: a creative exchange and interaction between participants with very diverse back-

Aurovilians pertaining to the issue, as well as a workshop where participants experienced the 'Architecture of the Body'. And so there was an opening up of inner and outer spaces where people concentrated, shared, meditated together.

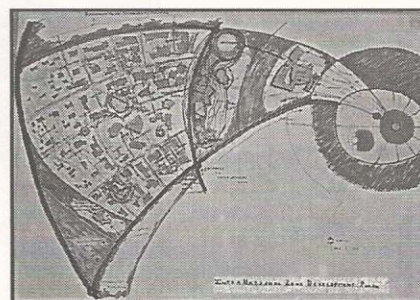
Surprisingly, six of the seven individual design proposals for the International Zone developed a common 'attitude', coming very close to merging into one single concept. Each of these designs included the following features:

- ◆ respect for the land and respect for the original vision of Auroville's town plan as a potentially powerful formation
- ◆ adopting Sri Aurobindo's "ideal of the free grouping of mankind" as a guiding principle for the positioning of national pavilions

Interesting variations were proposed in regard to integrating the diversity of pavilions. One idea was a transportation loop which would connect all the pavilions in an open landscaped park. Another was a flow of spaces covered by landscaped roofs where each 'pavilion' could find its proper place, all forming a peaceful valley open towards Matrimandir. Other approaches concentrated rather on intuitive methods for planning, on development processes and growth-patterns.

Hopefully an exercise like this could be seen as the first of many more to come, a living part of an international school of architecture.

Based on a personal report by Peter Anderschütz



One of the many sketches of the International Zone produced by the participants

grounds in an atmosphere of non-competitiveness and sharing.

The theme was 'Inner Architecture', the intention was to look for another dimension to architecture and urban and environmental design. Focusing upon Auroville's International Zone, the essential question became how to leave room, or create space, for the soul-aspect of nation-cultures to be expressed?

As background and preparation there were visits to Auroville communities and work places, informal lectures and exercises, interviews and presentations by 'core'

In brief

Remembering Sri Aurobindo

The article by Rhoda P. Le Cocq describing her experience of the last darshan of Sri Aurobindo and the Mother on 24 Nov 1950, published in AVToday of July 2000, inspired a group of Aurovilians to start hunting for stories by people who knew them. Thus originated the 'Memories of the Mother' series. When on 12.08.2002 some Aurovilians and friends from the Ashram gathered in preparation for August 15th, another series was set in motion: "Remembering Sri Aurobindo". The first session, was held in Savitri Bhavan on September 22nd with Shyamsundar, Kittu Reddy and Anuben (daughter of A.B.Purani) as speakers. The space was packed.

Speak Sanskrit Shibir

A five-day Speak Sanskrit camp organized by the Auroville language laboratory was held in the SAW-CHU building.



Ukiyo-E

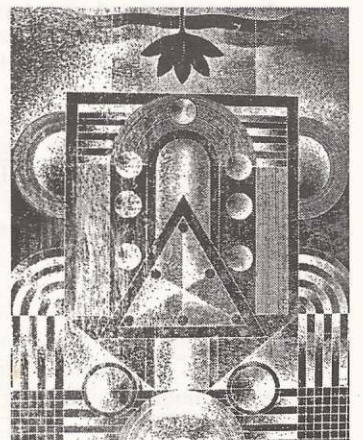
An exhibition of Japanese Woodblock prints, the last flowering of the traditional pictorial art before Japan entered the modern era, was held in Pitanga. These "pictures of the floating world" reflect the world of the townspeople of Edo (Tokyo), focusing on the popular entertainments of the day, landscapes, and portraits of well-known geishas and actors. Franz, who organized the exhibition, gave an introduction to the history of Japanese woodblock printing.

Tamil Women's Empowerment

Marijke, a newcomer from The Netherlands, gave an introduction on the Empowerment of Core Qualities – talents that belong to the core of the innate personality which may lay dormant until given opportunity to develop – to Tamil Aurovillian women.

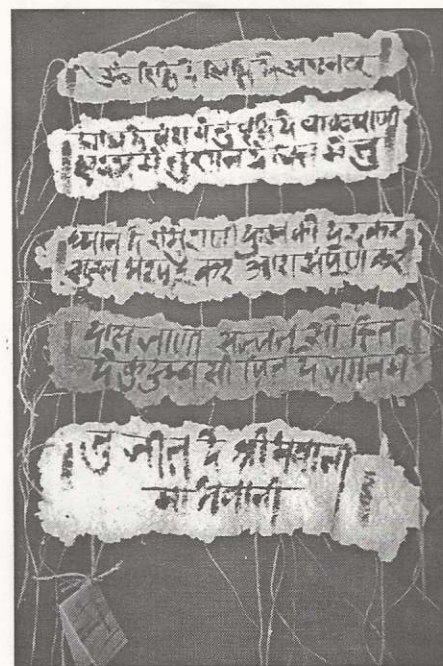
Art works in Crayon and Indian Ink

Two artists from Pondicherry, A. Soucoumarane and Ramasubramanien, held an exhibition of drawings and photographs in Pitanga.



Future School

The construction of Future School (the new high school) at Transition is nearing completion, but equipment and funds for the science laboratories and library are still lacking. If anyone can help please contact SAIIR@auroville.org.in



One of the exhibits

solution? One day Serge reflected, "We have to make paper," an idea which appealed to Alain instantly. Eventually, Herve, Luisa and Olivier took over the production and design side of the new hand-made paper section.

"In the beginning we knew nothing," Herve says simply, "so much nothing," he laughs, "that we didn't know what questions to ask. Then Alain went to Chennai and brought back photocopies of two books on paper and, one Sunday, we tried out our first paper sample with an idli mixer at Pour Tous." Luisa is more pragmatic. "In the beginning we had this ambition to produce handmade paper that would look like stuff that is generally made. Then," her eyes light up, "we began to experiment, and in a short time we had done so much that we were ourselves surprised and we began to get beautiful results."

Shakti

Sunaura joins a women's circle and talks with Amudha, Kantha and Kamala

Dressed in my light blue salwar kamiz, I made my way down various dirt paths trying to remember the exact route to Shivaya's house while anticipating the oncoming rain clouds that shadowed my way. It had been several years since I joined a group of women who met specifically to be with other women, to share their burdens, joys and learn from one another. In the early 1990s I had spent time doing my university fieldwork with the Tamil women living in the villages surrounding Auroville. The group I was now heading to, though, was unique in that they were all women whose lives had brought them into the circle of Auroville. Their perspective, I felt, differs from others and my curiosity to understand them was keen.

Once I had found my way and warmed myself with a cup of hot tea I settled into a circle with the

Sunday we needed water and my mother sent me to ask our new neighbor. The first words of English I spoke were 'I want water.' Then I started getting interested and was curious to know more. I am an observer who watches to learn."

Amudha spent her first six years in Pondicherry where her mother's family lived. Her father had land in the Auroville area and eventually the family moved to get out of the burgeoning city. She remembers with fondness learning to ride a bicycle. "I was the first female in the village to ride a bicycle. When my father came home at the end of his work day, my brother and I had to clean his cycle before it was locked up in the house. We would play with it and slowly I learned how to ride. The others in the village looked at me like I should not be riding, but I felt so proud."

women of the Tamil culture. When we get married we do not go out on our own to socialize. We have many obligations at home with our husbands, children and extended families. During the day many of us work and we may pass our friends on the way or see them at the work place, but it is often short and rushed." The women's group is a chance to get together, be free and share.

Although these women may not hop on their bike and speed off for a girl's night out, they have a few thoughts about their independence. "We are very lucky," said Kantha, "our husbands are good men and we can go where we want. They support us in work and at home." "Women's independence," explained Amudha further, "is becoming more common in the Tamil culture. You see many more couples these days who choose to live on their own after marriage instead of living

with their large extended families. You see many more work opportunities for women, and the men are more aware of how much the woman must do and so they participate more at home."

Part of the group's aim is to help each other find their individual strengths and the ability to assert them. Marijke, a woman sociologist who recently joined Auroville, had come to the meeting to discuss her work that

involves the 'empowerment of core qualities and career goals'. In turn we each shared our history of work and education and then talked about what our heart-felt desires are. Being a young woman who is unclear about 'my life's work' myself, I found this sharing very intriguing. There were some surprised looks as I told my story, which made me recognize again how much we still have to learn from each other.

"Each person has different capacities, ways of looking at life and expressing themselves," said Kamala. "If you learn about different characters you can find out more." Cultural differences in Auroville though,



Kamala at the free store

can challenge us all. For example, though the locals are used to Western wear by now, it can still shock them to see women in short shorts and string tank-tops. Some women in Auroville get frustrated with visitors who seem unaware of the implications of such dressing and leave behind an impression that the women living here have to deal with year round. What I hadn't realized was that the Tamil women of Auroville also feel personally embarrassed by such skin display. "I have lived in Auroville most of my life and have been in the US and France so I see the differences of cultures," said Amudha. "If someone comes to visit me from the village and we see a woman wearing small shorts that look like underwear I feel ashamed. If I am alone I don't mind but when friends come from the village, they see this and look at us like we are the same." Going a little deeper, we found a mutual curiosity for the

varying cultures of Auroville and what we can gain from our differences. "In Auroville," said Kamala, "one can take the best from each culture." There is hope that more women from different cultural backgrounds will join the group.

As the clouds began to rumble with the threat of rain, the sharing came to a close. During the next month the women's group will attend a workshop with Marijke on core qualities, and take a trip outside Auroville. There is also a dream to build a place for women to get together for workshops, classes and sharing.

The rain hit me fast and heavy on my drive home and, though soaked through, I felt light and happy with the energy I had received and been given in this circle of women.

Sunaura



Kantha in the Visitors Reception Centre

others. The atmosphere was very joyful and open. I recognized everyone though a few names slipped my mind. Soon, though, I not only learned names but life stories, personal perceptions and individual dreams.

Many in the group had been children when the first Auroville settlers came. I tried to imagine how it must have felt to one day look up and see a Westerner with strange habits and clothing building a keet-roofed hut in your neighborhood. Kantha, Amudha and Kamala, three women who have spent more of their life in Auroville than anywhere else, discussed this and other topics more extensively. "They seemed nice but I did not know who they were," said Kantha in reference to the strange foreigners who arrived in the late 60s. "My friends and I would play tricks on them, like putting thorns in the road to give their bikes punctures while hiding in the bushes", she said with the glee of children being naughty. Amudha told of her first verbal encounter with a foreigner, "My family had land next to Revelation. Each Sunday my mother would bring us children to the land to work. One

Kantha was born in a neighboring village, Kottakarai. One of her most treasured memories was the day she met Meenakshi. "One day I was washing my plate in the Center Kitchen and I saw Meenakshi. I went up to her and asked her name in English. Though she was not from the local area, she answered in perfect Tamil. I was so happy that I went home with her and stayed with her on and off over the years." Among the many projects and stories Meenakshi and Kantha shared was the beginning of the women's circles in the early 90's. "It was a chance for us women to get together and share our lives," said Kantha. After a year though, marriages, babies and work made the meetings difficult to attend and eventually they stopped altogether.

Kamala grew up in the local area and joined Auroville after marrying her Aurovilian husband, Raman. "It is a gift to live in Auroville," she says. "Not everyone gets this chance. There are many people who see the wonderful opportunity we have here." Kamala instigated the restart of the women's circles in the early months of this year. "It is different for



Amudha preparing doing the administration for Ganesh bakery

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