

Civil Society

THE ORGANIC LIFESTYLE

TRAVEL • ARCHITECTURE • FOOD • GREENERY • PRODUCTS



6th
Anniversary
**DOUBLE
ISSUE**

Eco-friendly is easy and affordable

CHANDRASHEKAR HARIHARAN

Do a U-turn, park some water

ANUPAM MISHRA

Let's not torture our trees

RAVI AGARWAL

The secrets of Van Vadi

BHARAT MANSATA

The old and new office

Sky gardens are cool

Everyone needs a daily dump

Navdanya grows, organically

Capt. Dhond's big dream

The Himalayan walk

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We believe that profitability and sustainability are complementary. Our efforts in this direction have been recognized by international agencies.

Jubilant has featured prominently in Standard & Poor's Environmental, Social and Governance Index and in International Finance Corporation's worldwide survey. Its sustainability report has been rated as A+ by Global Reporting Initiative.

We are constantly working to make the earth a cleaner, healthier place for us all.

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ANNUAL DOUBLE ISSUE

This September-October issue of *Civil Society* marks completion of six years of the magazine. The next issue will be in November.

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Civil Society

READ US. WE READ YOU.

Six and growing

SIX years is a fair amount of time for a magazine to be around. Apart from what it might tell you about our ability to hang in, it is also an indication of the market for our kind of straightforward journalism. If we come out from one month to the next it is because we have readers and they find value in what we publish.

There are corporations, NGOs, CEOs, activists, doctors, lawyers, schools, colleges and libraries across India who subscribe to *Civil Society*. We are especially heartened when individuals take us into their homes because ours is the kind of magazine they want to spend time with. We have a long shelf-life wherever we go. The popularity of our website has far exceeded our expectations considering the limited investments we have made in it.

So it feels pretty good to be six. This has been a very nice way to spend our time. For sure there are concerns about the journey ahead. Nurturing a media business these days isn't easy. Clearly, what the future holds no one can ever say for sure. But for now we invite you to join us in celebrating our success in proving that start-ups like ours in the media can be viable and influential.

In the past six years we have taken the lead in reporting on issues which came to be recognised as stories long after we had run with them. We like to believe that being small gives us the freedom to explore our world differently.

Whether it was the Delhi Metro's doubtful claims, SEZs, land reforms, right to information, green architecture, organic farming and food, affordable housing, health care costs, the plight of the homeless – *Civil Society* was ahead of others. We are proud of our record.

Our cover story for this special annual issue, *The Organic Lifestyle*, has been chosen in the belief that when it comes to protecting the environment, a huge responsibility rests with the rich. Not only do they consume more, but through the options they exercise they influence the quality of life that the rest of us experience.

We welcome the growing switch to ecologically sensitive options in architecture, construction, energy, food and travel. But our cover is less celebratory than you would imagine at first glance. We wonder whether the new search for balance is too little and too late. Can efforts to rescue the environment and create ecological well-being be left to consumers alone? Such is the degradation we see around us – and so much is the poverty – that we need high levels of activism among administrators and policy-makers to change the national attitude to the use of natural resources. Right now what we have is exploitation and plunder.



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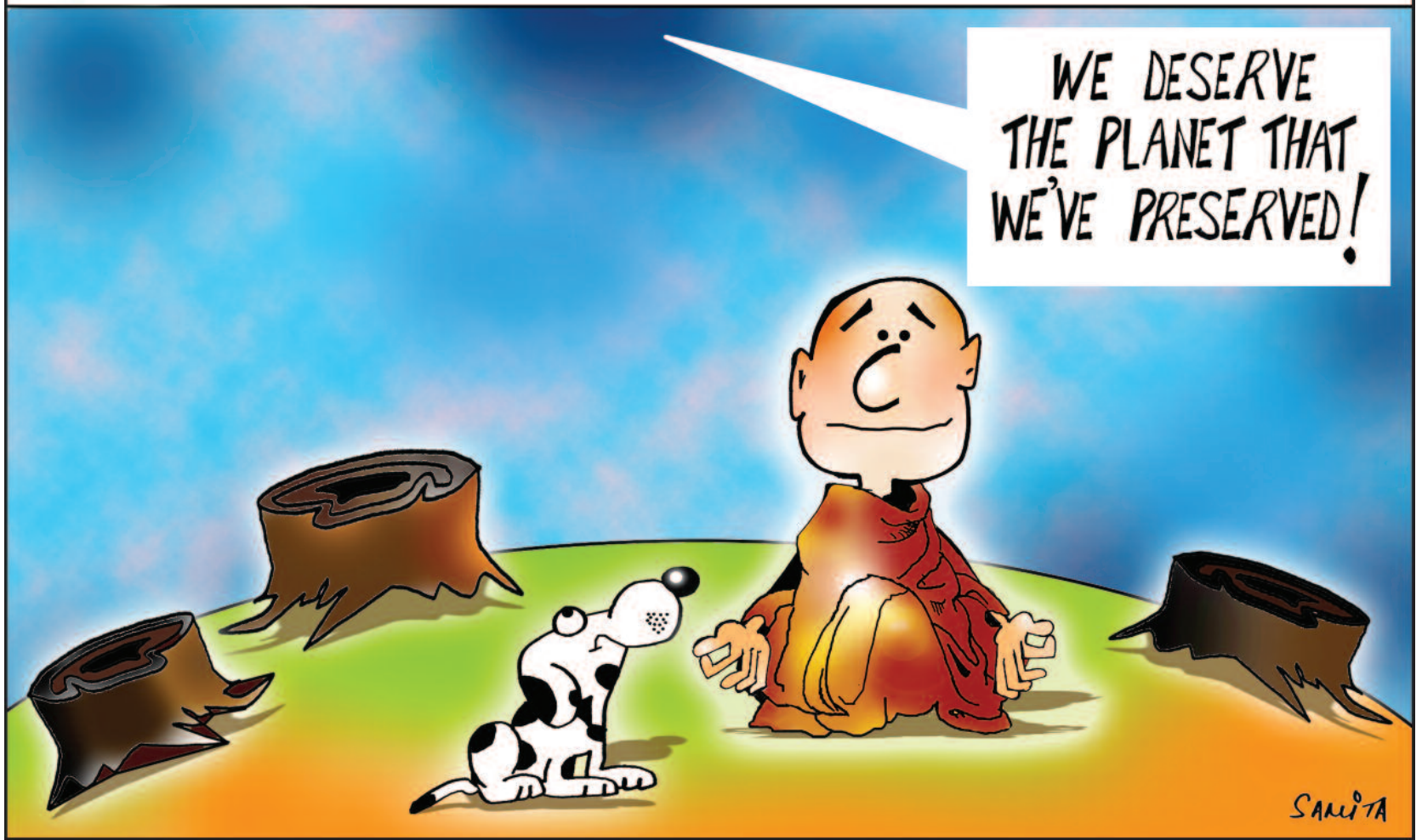
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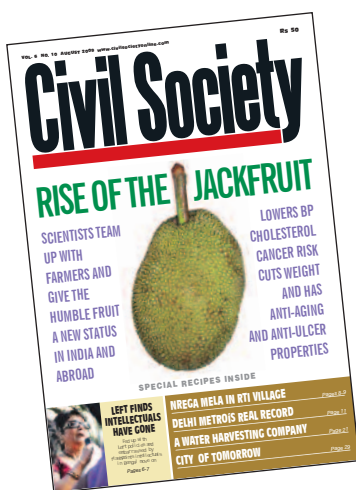
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IN THE LIGHT

by SAMITA RATHOR



LETTERS



Jackfruit

It is two months since we conducted the Jackfruit Mela on our anniversary. The memory still lingers in the minds of our customers. They want more of such Malnad speciality melas. We have sold the maximum number of jack-

fruit papads, jackfruit chips and jackfruit sandiges. We continue to sell. I order regularly from the Kadamba group, Sripad Hegde and Vandana Baliga.

Govind Kabadi
simplyorganics@rediffmail.com

Great story on the wonderful and most delicious jackfruit! I used to eat a full ripe jackfruit while going to school and college. I was reminded of those memorable and most joyful days.

BNR Rao
bnrrao@gmail.com

Good story. Information on value addition of jackfruit is very useful. It is time for agriculturists, who are suffering from the uncertainty of market prices for their products, to think of utilising value addition for jackfruit

Ganesh Bhat
ganeshbhat@yahoo.com

Going through your cover story on jackfruit was an eye opener for farmers and consumers. If we don't waste agricultural produce from har-

vesting to the table, we will have a lot to eat. Healthy people are the wealth of the nation.

Satish
ecobuyorsell@gmail.com

Nobody ever thought that the jackfruit would receive so much attention, especially this year. We should give due credit to Adike Patrike, a small, farmer's journal which created so much awareness amongst people by bringing out three to four special issues on this unnoticed fruit.

Prakash Bhat
prakashbhat0@gmail.com

I have around 10 trees on my farm. Most of the fruit went rotten last year. We had to sell big jackfruits full of flakes at Rs 2 to middlemen who apparently sold them in Bangalore at Rs 250. Thanks for giving me a lot of ideas.

Ambika Savitri
ambisavitri@gmail.com

My hearty congratulations to Dr Gowda and his eminent team of agricultural scientists. They should have been honoured by the state

and central government. This type of research and innovative methods will help to reconstruct the rural economy and be useful to the farmer who is left today with a broken heart and a broken cart.

After retiring from the IPS cadre I settled down in a rural area to do something useful for agriculture which has become more of a culture than a sustainable profession.

I ventured to create awareness on cultivation of medicinal and aromatic plants and did field research without a science background or any institutional assistance. Please visit my personal website gongidi.com and raghavagongidi.sulekha.com.

G Raghava Reddy

Tree sisters

I congratulate HPSS for really making efforts for community participation possible and effective. We need to make protection and raising of trees a mass movement.

Mohan Chandra Pargaian
mcpargaian@gmail.com

SBI

Everyone's going green

RITA & UMESH ANAND

SOME years ago, Navdanya's Slow Food Café at Hauz Khas in south Delhi was a novelty. A few committed souls would trek to it for freshly cooked vegetarian meals. There would be refreshing juices to wash down the food. In the right season you could get delicious mangoes from an orchard in the hills. It was all so new then that it was worth a story.

But look around today and the "organic" label is just about everywhere. There are innumerable eating places. You can get organically grown vegetables, wheat, rice, tea and so on delivered to your door.

When we covered the Annam Festival in Kerala earlier this year, we found that old-style cooking had many new loyalists across south India. A significant shift was taking place to traditional ways of making meals and eating them. So haunted are Keralites by hypertension and diabetes that they have no option but to hark back to the past.

Going organic is not just about food. It is a different orientation. More and more people want green housing, holiday destinations in the midst of nature, lead-free paint in their homes, water harvesting structures, natural remedies, battery-operated vehicles and much more.

It is a long list of new preferences that have transformed some homes and offices. Garbage is being broken down through vermi-composting. Plastics are being taken out of daily waste and recycled. Grey and black water is separated for recycling and reuse. Architects who wish to remain relevant are expected to be conservationist. They need to know how to incorporate special insulation into their designs to conserve energy.

Are we talking here of mere lifestyle oddities? Is this boutique behaviour? What do a few people with high visibility matter in a country as vastly poor as India?

The answer is that the numbers may be small but the trends are strong and come with advantages for everyone. First-movers in slow food and green construction have opened up bigger markets. The benefits are also not entirely urban. We've seen for instance how the Janhit Foundation took 100 farmers into organic agriculture in western Uttar Pradesh, linked them to consumers and saved them from a life of debt and despair.

So while consumers make demands and cities take the lead, the benefits go all down the chain. Changing the way we live is a serious business with many ramifications. But as is the case with most things new, the beginnings have to be small and more often than not elitist.

What has prompted the new thinking and the search for different standards? First of all we have been learning from the failures of the developed world. We can see what they have got wrong. The growing awareness about global warming, with celebrities and leading politicians taking it up, has certainly made people more eco-sensitive. The stark absence of water in our daily lives is undoubtedly another reason. We all know how short of water we are. There is no river left in India which is clean and horror stories abound about ground water levels.

There is a general sense of a decline in the quality of life. There is greater realisation that the decline results from destroying the environment. For instance, air pollution and the increase in respiratory disorders have been a shocker. Ditto for the spread of cancer – every other

family seems to have a patient or know of one.

In relation to food, the preference for organic products was essentially associated with the rich. But the middle-class has done much catching up. With awareness spreading and demand going up, the prices of organic products have fallen. In fact with the current rise in prices of fresh foodstuff, there is not much difference between what is charged for the organically-grown and the rest. So if you feel daunted by a Fab India store or its upmarket equivalents, just go to a government-run Khadi Gramodyog outlet. It is as good and offers great value for money.

Some organic preferences have always existed. Many rural households have traditionally set aside patches where they grow food for their own consumption without chemicals. They have done this for decades. So, they have gone organic much before it became fashionable to do so in cities.

In urban India, activism has played a big role in creating awareness. India's NGOs are rooted in the middle class and have succeeded in spreading their message of conservation. A whole new generation has been influenced. Campaigns to protect trees like those of Kalpavriksh in Pune and Toxics Link in Delhi have had a considerable impact. Public interest litigation by NGOs like the Centre for Science and Environment's (CSE) in Delhi has been very effective. To CSE goes the

credit of getting Delhi's buses powered by CNG.

These aren't small achievements. Youngsters who have grown up watching these changes take place now have a different order of preferences. In addition, they are taught in schools about the environment. However incomplete the courses might be they do lead to a new kind of thinking.

A growing number of professionals make it possible to exercise environmentally sensitive choices. Dieticians will tell you what to eat, architects and engineers how to build, travel agents where to go and doctors what medicines not to take.

There are companies which do only those businesses that they regard as good for the environment. Solar power, water harvesting, green construction, wind turbines, electric vehicles, traditional medical formulations, eco-tourism and so on are seen as honest opportunities.

Some of these initiatives owe their origins to the work that NGOs have done. Development Alternatives for instance has pioneered changes in the use of construction materials and promoted traditional architecture. Chandrashekar Hariharan, who founded BCIL, was influenced by Development Alternatives. He went on to use traditional engineering techniques to develop commercially viable green housing.

How Captain Nitin Dhond bought up land that would have gone to the mining industry in the Western Ghats and converted it into two breathtaking resorts, Wilderrest and Swapnagandha, is an example of the entrepreneurial spirit that wants to conserve. When Gautam Singh went on the story, none of us knew what he would find. It turned out to be a wonderful surprise.

All this may be just a beginning, but it is an important one nevertheless. The need to be conservationist and opt for an organic lifestyle it would seem is rapidly becoming a necessity.



NEW AGE BUILDINGS

Eco-friendly is easy and affordable too

CHANDRASHEKAR HARIHARAN

WE live in the environment age. Everything we do has to centre around how much we are using of which natural resource. Everything you touch around you – from the paper you use, to your table, your computer, your building, the food you eat... all come from Earth. Nature's resources are finite, but we do things as if these resources were inexhaustible.

It is time we began to live differently. But if you believe that governments and power and water utilities can bring about that change, you need to think again. The change has to begin with us. We have to be the change without governments telling us what to do. Without laws and regulations compelling us to change our ways.

The trick is to stop looking up to the government, but to look at ourselves for solutions that we can create for meeting our own needs as much as we can. That is a kind of return to production and consumption at the same place which defines this new age of prosumption. If you can be a prosumer and can persuade a few of your neighbours and colleagues to also become prosumers, you will have begun to make that big difference to your cities. It will make you the change that you want to see happening in the rest of the world.

By making our homes more sustainable we can help our cities be self-sufficient. And how can we help our cities while first helping ourselves? Here are a few simple things that you can adopt in your own home if you are really keen on being responsible.

SOLAR FIX: You can do this in two ways: visit www.gethotwater.com to check on a simple solution that one enterprise is offering in Bangalore today where the company serves as a utility that supplies you hot water at a subscriber cost of Rs 160 a month for 200 litres capacity. You pay no more than Rs 6,000 as a refundable deposit. If you want to go for the purchase of a solar heating system, it will cost you about Rs 30,000 to Rs 40,000, depending on what you buy, but that has its advantages too, for the system is your own and gets you back the money in about six or seven years, depending on power cost in your city. You use up about 120

units of power every month if you have two toilets at home with energy-guzzling geysers or heater rods.

I would recommend you disconnect the existing geyser at home since it costs you about Rs 400 a month. And if 500,000 houses in your city take to such solarised hot water systems, you save between 15 and 20 per cent of the city's power demand.

WASTE NOT: Can you stop dumping kitchen waste in the plastic bag that you tie to the gate outside your house or, worse, dump indiscriminately on the street corner? The trouble that it takes for the city is enormous – collect garbage from individual homes and cart it to either a scientific, non-soil-contaminating landfill, or to the edge of the city to dump just about anywhere on any land as long as there is no one complaining – you can see what it involves as logistics, apart from cost.

Though there has been a Supreme Court directive since 2006 that mandates every urban local body (read Municipal Corporation) to create scientific landfills that avoid contamination of soil with toxic wastes, there is nearly no such landfill anywhere in our 3,600 urban agglomerations / town/cities. You have to only reckon with about 1500 trucks that run every day in a city like Bangalore, or about 3,000 trucks in a city like Mumbai to

transport over 3,000-6,000 tonnes per day to places where such wet waste is dumped along with plastic bags, batteries and other such toxic waste, e-waste that cannot degrade for millions of years, as well as clinical waste which is hazardous to public health apart from contaminating soil.

So what is the option before us? End your dependence on the municipal truck and install a simple wet waste treatment system in your home. It costs no more than Rs 1,200. If you live in a high rise apartment, ensure that the residents' association creates a small area for treating such wet waste, collected from residents block-by-block. Either way, whether you are in an independent home or are an apartment dweller, the amount of compost that you will secure every month will be more than enough to serve as fertiliser for your garden plants.

**If all homes and apartments
treated waste water, we
would save anywhere from
30-40 per cent of fresh water
demand. In a city like
Bangalore that amounts to
250 million litres of water
that you don't need
any more every day!**



BCIL's housing colonies aspire to be self-sustaining and are innovative in their use of technology

Moreover, you avoid sending nearly 70 per cent of your waste at home every day to this network of trucks that clog the city's roads while wasting nearly 22 to 44 million litres of diesel every year depending on whether you are in Bangalore or Mumbai. That's 60,000 litres of diesel daily in a country that imports 80 per cent of its oil need.

If you are in an apartment that hosts more than 200 homes, look for a competent biogas digester which will digest such kitchen waste and produce up to 30 kg of gas for your cooking stoves either in the clubhouse or cafeteria in your apartment block.

By localising the solution for wet waste management you not only reduce the quantum of waste that the city corporation has to manage, you also avoid the shabby politics of contractor-friendly projects for waste management that governments are fond of promoting. What is more, your plants at home, and in the garden, receive healthy, organic fertiliser.

ENERGY BOOST: Incandescent bulbs and tubelights that light your spaces burn away much more as energy bills than you will want to afford. Consider replacing them with CFLs or new-gen LED lamps that offer you higher quality lighting at about 25 per cent the cost. LED lamps can bring down your energy bill by 90 per cent! So your objection is that these things cost more, and that you are not so sure if they will last long considering the heavier cost.

Today some lighting companies offer schemes for converting your house

to quality CFLs at just Rs 1,000 for a two-bedroom house. That is a one time cost which saves you about Rs 100 a month on your power bill. In just the first year of such use, you manage to recover your initial cost. Every year after that brings you a saving of Rs 1,000 to 1,200.

As a citizen this will appeal to you: the startling fact is that just the change of a mere three CFL bulbs in every one of the five lakh homes in any city will be saving enough energy to power all street lights for an entire year! People call this kind of saving of energy 'negawatts'. This strategic direction can be extended to many such appliances across the board, and beyond homes.

WATER WEALTH: For about Rs 15,000 in an apartment block of 100 flats, you can save up to 50 per cent of the total fresh water that you need. If you have known the nightmares of importing water tankers with no guarantee on the quality of water or its source, you'll take this decision without hesitation.

You have a variety of waste water treatment options that can be managed with as little as 60 to 100 square feet of land that you set aside in some corner of your apartment block in a way that the entire waste water treatment equipment is buried underground with just a meter or so of some of the equipment showing above the ground. The maintenance of such systems is pretty simple, the technologies are well-established, and there is a range

Continued on next page

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of vendors to pick from, who offer from the simple electro-mechanical treatment plant we have known for about 30 years to the more state-of-the-art and compact micro-bioreactors which give you high-quality clarified water that you can use for your flush tanks or your gardens.

The use of such treated water and driving it into the ground with gardening water also enables you to recharge your groundwater resource. Couple this with a strategy to create a few open wells of no more than one metre diameter and depth of about 15 metres with cement rings making for the sides of such an open well. In less than six months to a year, you can draw water from such an open well to meet your drinking water needs too. Remember your grandfather's house in the village which had an open well and had trees like the coconut or plantains or areca which expire anywhere from 60-80 litres in a day while also enabling recharge of your open well. The principle is much the same, with some contemporary understanding helping the solution along.

If all homes and apartments treated waste water, we would save anywhere from 30 to 40 per cent of fresh water demand. In a city like Bangalore that amounts to 250 million litres of water that you don't need anymore every day! In Mumbai where fresh water demand today is at about 4,000 million litres a day, the saving could be as much as 1,200 million litres of fresh water if every housing colony took to this practice. The impact on the city's infrastructure would be massively reduced by such localised waste water treatment. The organised water supply board infrastructure in Bangalore or Mumbai, or any city, meets only 25 per cent of the entire daily fresh water requirement. The rest of the water is drawn in nearly every Indian city from groundwater resources with open wells.

In the face of rapidly depleting levels of water in our cities, our governments are wrestling with water shortages with really no solutions in sight. Today, in cities like Ahmedabad or Rajkot, the ground water level is at nearly 1000 feet. Some parts of Bangalore, particularly to the east and the north, have had serious water challenges since the 1960s with water levels now depleted to 700-800 feet from about 250 feet in the 1980s. We seem to forget that, as with bank accounts, if you don't deposit, you can't withdraw.

The exponential saving that arise from such treatment of waste water will enable our cities to face the future with greater confidence on such vital services like water and energy.

TIGHTEN TAPS: All it takes is a cost of about Rs 2,000 for a two-bedroom house (with two toilets and a kitchen) to secure those simple aerators and flow-restrictors that can reduce up to a guaranteed minimum of 25,000 litres every year, year after year. In cost terms, the saving per home is only about Rs 400 a year, but a city of Bangalore's size groaning under water shortages, can save over 100 million litres.

Just one dripping tap for 12 hours can mean wastage of six litres of water. If there was just one dripping tap for even one house, it means two million litres lost every day to dripping taps. That totals up to one billion litres of water every year.

There is much more you can do right at home if you want to be part of this quick change in urban sustainability that we so desperately need. You can ensure, for example, that you don't leave your television on standby power simply because you are too lazy to get up and switch it off at the mains? It is always easier to switch off or on the television with your remote. Remember every time you leave it on standby power, you lose about 25 per cent power, hour upon hour. Even if 10 per cent of television sets in a city like Mumbai are left on such standby power, that will mean about 300 megawatts every year.

If you are sensitive enough to such energy consumption needs, you will talk to the caretaker at your office to see that every computer is shut down at the mains before closing hours, so they don't run on standby power. The terminal is a greater consumer of energy than the CPU unit. The saving from every computer at the office can spell up to 200 watts of power for every 12 hours of such standby use of energy for one computer. Your office energy bill will show a sharp drop the next month if you act on it, even if you don't count the massive easing of the burden of power shortages for your city.

It will also be useful to remember that a laptop consumes just 30 per cent power against the regular old PC which runs at about 150 watts and more. That can be substantial in any office. There is much more you can do with the air-conditioner that you use; some simple protocols for maintenance and cleaning of filters of every such air-conditioner, or at the chilling plant of a centralised AC system, can spell savings that will pleasantly surprise you.

HARVEST RAIN: As for water, it's so simple to realise that at about 1,000

mm of rainfall in a city like Bangalore, every acre of land receives about 3 million litres every year. If even 20 per cent of this water that falls from the sky is harnessed for use, cities like Bangalore with a 450 km land-spread, can harvest 400 billion litres every year. This is over one billion litres every day on a daily average—which is the current total consumption in a city like Bangalore. What this means is that at just 20 per cent capture of rainwater, you can stop using borewells and stop fretting about water from long-distance sources like our rivers. That is what will make for a water-positive city. This is not to forget the advantages that our old river basins gain, with the reduced drawing of water.

There is so much more you can do to go green in affordable and doable ways. This will ensure not only that you are self-sufficient but that you reduce your dependence on the government for these services. You will have managed to stage your own form of protest against inefficient administration and contractor-friendly projects that governments dole out for water supply, power generation, or for solid waste management.

These sustainable solutions require no rocket science. There is, of course, experience and knowledge that one needs to gain from people who are experts. Today there is a small but growing tribe of such experts who understand not only the physics of water, energy, waste and air management, but also the mechanics of technologies that offer solutions which make you self-sufficient at costs that are not forbidding.

Chandrashekar Hariharan is the CEO of Biodiversity Conservation India Ltd, a pioneer in green housing



At BCIL's T-Zed homes

BCIL

Photographs by LAKSHMAN ANAND



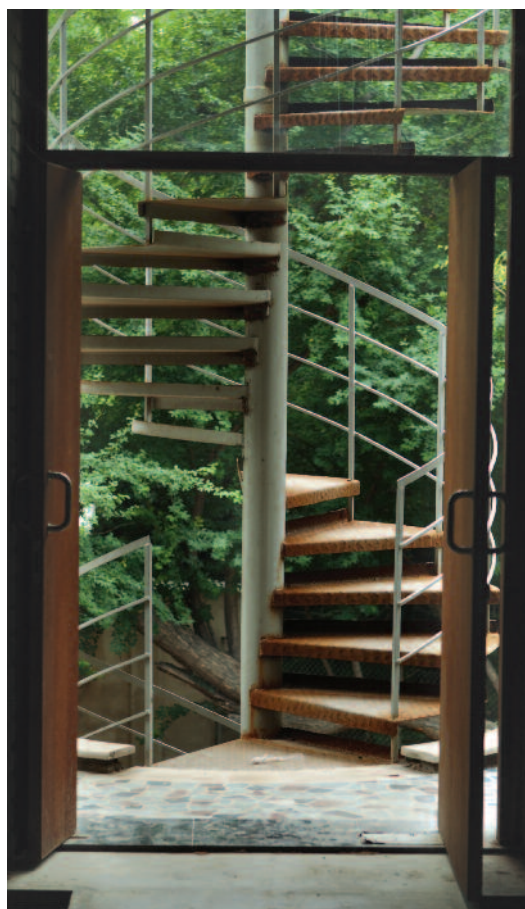
The Development Alternatives' new office building

The old and new office

Saibal Chatterjee
New Delhi

THE original headquarters of Development Alternatives (DA) was made of mud. It had an iconic status among early votaries of green buildings. After years of wear and tear, the old building started crumbling. So DA pulled it down and is constructing a new one, employing all its knowledge of green architecture.

The new building will surely be a landmark too. Over the years, Development Alternatives, a non-profit which promotes eco-friendly technology and jobs and skills for the poor, has built a reputation for being a flag-bearer of green architecture. In making its new office, DA and its architect Ashok Lall, have assiduously followed 10 mantras of green architecture:



- The building uses natural, recycled and renewable low-energy materials. Eighty per cent of materials for construction were sourced from within 500 kilometres of the site, while all labour was drawn from the local workforce. The focus was on minimising energy consumption in the construction process. The choice of structures, wall assemblies, finishes and mechanical systems was dictated by this need. First preference was given to recycled or rapidly renewable materials and second to natural, locally sourced materials that required little processing energy. Materials with high embodied energy – brick, cement and steel – were used sparingly and only when absolutely essential. Unpolished granite and sandstone, broken white tiles and expanded polystyrene from factory dumps and waste mirror glass, among other things, have been extensively used.

- The building is in complete harmony with its natural surroundings, dovetailing the environs into the architectural design. The structure has benefited from the experience that the DA gained in constructing and maintaining the original building. Non-stabilised compressed earth blocks have now given way to a stabilised form of mud, which has been used extensively.

- The new building does have some of the older

6th Annual Issue



The new building has some of the older design elements like a domed lobby, vaulted ceilings and central courtyard

design elements like a domed lobby, vaulted ceilings and central courtyard. Its seminar room is circular, sunken and covered with a prominent dome. But it also many new design ideas and technologies. With 4,500 square metres of usable area instead of 1,000 and six floors instead of one and half, it is four and a half times larger. There is optimum use of space, materials and energy. Traditional construction methods have been combined with modern technology while reining in the ecological footprint of the construction.

- Borrowing architectural motifs from traditional Indian palaces, havelis and mansions, this building has been constructed around a shaded courtyard. The sky is visible from this central space of the structure and below it are pools of water. The sound of rippling water suffuses the environment. A variety of utilitarian spaces are arranged around the courtyard – meeting rooms, offices, corridors, stairs and terraces. All these spaces are visually connected vertically and horizontally to other spaces created across the courtyard, blurring the lines that separate



the interiors from the exterior areas.

- Interaction with nature is central to the design of the building. No matter where you are in the building, you can sense the rhythm of the seasons and the change of light throughout the day. The building volume has been determined by the climate – shades have been used to ward off the heat of the sun in summer, to absorb it in the winter months, and capture the flow of the monsoon breeze. Each facade, especially the fenestration, is designed differently in keeping with the solar orientation and view.

- A cylindrical room, designed on the lines of a symbolic baoli (a subterranean stairwell that leads to a pool typically 10 to 15 metres below the ground), is one of the striking features of the new DA building. It is circular instead of longitudinal with loosely concentric steps descending towards a metaphorical pool of water at the centre. This room is lit solely from above by a symmetrical arrangement of 10 windows and an oculus, which is the entire domed roof itself,

woven from bamboo stalks.

- Nearly the entire interior and exterior walls are made of cement-stabilised compressed earth blocks or cement-stabilised compressed fly-ash lime-gypsum blocks. The few 115mm-thick interior walls are reinforced with steel wire laid in every fourth mortar course. Exterior masonry cavity walls are anchored with PVC ties. The earth yielded by the site after the demolition of the old building was recycled into compressed earth block using simple, low energy-consuming machinery. The fly-ash came from a local power plant.

- Before the construction of the new building began, the design of the building emerged through a "consultative and collaborative" process, during which the DA staff volunteered to accept a maximum indoor temperature of 28 degrees Celsius at 60 per cent relative humidity as against the industry norm of 24 degrees Celsius. This was aimed at downsizing the cooling system and reducing electricity consumption.

- The staff also agreed that circulation areas need not be cooled directly, rather by overspill. They accepted that restrooms, stairwells and service spaces could be cooled through natural ventilation and the cafeteria with an evaporative cooling

system. In accepting natural variations in indoor lighting, temperature and air flow, the DA team was acknowledging that, in the interest of sustainability, it wasn't necessary to blindly adopt international yardsticks of comfort.

- Through the means of a high degree of passive cooling, made possible by a mixture of building insulation, window shading, ventilation and low amount of glazing, the architects have drastically reduced the dependence on mechanical cooling of the interiors. A hybrid cooling system, using the best of air-conditioning chillers and water coolers, has been installed in the building. This system would use direct and indirect evaporative cooling in the hot and dry season, and refrigerant cooling when the humidity rises above a set comfort level. This system cuts down energy consumption by at least 30 per cent.



- Rainwater harvesting is an integral part of the building design. All rainwater that falls on the site is used to recharge the groundwater. All waste water is recycled, treated and used for irrigation and flushing toilets.

- High energy-intensive materials like aluminium have been completely shunned while glass has been used frugally. Instead of the large sheets of thick, strengthened plate glass that are de rigueur in conventional modern buildings, the curtain wall of the new DA world headquarters uses small panes of five millimetre glass, half, even a third, as thick as the usual structural glazing.

Most conventional office buildings make you sick. Studies show the air is noxious and there is no natural light. By building differently you get healthier employees and a healthier environment.



LAKSHMAN ANAND

Shahriyar M Choudhury in the Bamboo Store

Ode to bamboo

Abhinandita Mathur
New Delhi

*Bamboo is cool, bamboo is hot
Excellent qualities this grass has got
Saving trees, carbon footprint reduction
Cleaning the air and water conservation*

CAN rhyme and design lure customers? Yes, it can. The Bamboo Store located in N- block market, Greater Kailash, uses both to get its message across. This one-stop shop for bamboo products is dedicated to creating awareness about miracle grass.

Started by Shahriyar M Choudhury and Minhaaz Majumdar of Earth and Grass Workshop, the store was set up in January 2008 with support from the National Mission on Bamboo Applications, to promote bamboo as a viable eco-friendly alternative to wood and plastic.

The Bamboo Store has handcrafted traditional and contemporary bamboo products like lamps, basketry, artefacts, planters, candle-stands, eco-bathroom accessories, garden umbrellas.

The store also stocks readymade and made to order screens and blinds for windows. Beautifully displayed, the store's diverse collection highlights the strong and supple character of bamboo that lends itself to both traditional and modern products.

Also on offer are bamboo based building and con-

struction material which provide a much needed alternative to the ugly concrete stuff used to make floors, walls and roofs. Bamboo's utilization is ironically poor considering it is one of the oldest construction materials around. Structures like bridges have been made of bamboo.

Available at the Bamboo Store are structural components like bamboo mat-boards, bamboo poles and bamboo tiles for flooring, wall panelling as well as blinds for window treatments and corrugated bamboo roofing.

Bamboo Woven Veneer Board or Mat-boards can be considered a feasible alternative to plywood. Made from strips of bamboo woven into mats and glued together in layers under pressure, these mat boards are a durable option as they are treated with fire-retardant chemicals and are resistant to insect and fungal attack. They can be used for panelling walls, ceilings, doors, furniture, storage containers.

Minhaaz Majumdar points out that use of these mats promotes ecological living and supports hundreds of women in villages engaged in weaving the mats at home.

Estimates suggest that over 8,000 ha of natural forest could be saved from logging if one quarter of the country's plywood production is replaced by bamboo mat-board.

Technically defined as Bamboo Mat Corrugated Sheets, bamboo roofing is a viable low-cost alternative to harmful asbestos roofing. Besides being more durable than asbestos, bamboo has an aesthetic advantage.

The roofing is made of polymer soaked and coated bamboo mats assembled and pressed under specified temperature and pressure.

Products at The Bamboo Store come at a fair price. Bamboo Mat-board (depending on thickness) costs between Rs 44 to Rs 110. Treated Bamboo poles are priced Rs 100 upwards, Bamboo floor tiles are Rs 175 per sq ft plus Rs 25 for laying charges. Bamboo roofing is Rs 65 upward.

‘Energy efficiency is about traditional architecture’

Vidya Viswanathan
Gurgaon

KALPAKRIT is a young, green architecture and sustainable design firm based in Gurgaon. It offers energy efficiency and conservation solutions, lighting, day lighting analysis, water management and waste management solutions for buildings.

Kalpakrit is a member of the United States Green Building Council (USGBC) and the Indian Green Building Council (IGBC).

The consulting company was started by Neeraj Kapoor and his wife, Alpana Jain. The two were classmates at the TVB School of Habitat in New Delhi and worked with sensitive architects – Neeraj with Ashok Lall and Alpana with Piyush Prakash.

Alpana worked with the International Institute of Energy Conservation (IIEC). She helped draw up an Energy Conservation Building Code for India. Both then went to Arizona to do a Master's in building design – energy and climate responsive architecture. At that time Green Rating became the new buzzword and so they worked with two different firms on efficient energy buildings. Kalpakrit, which was started in 2007, is still a fledgling business but Neeraj and Alpana have managed to attract other professionals. They are doing some very interesting projects. *Civil Society* spoke to Neeraj.

How did you decide to get into this business and come back to India?

We studied and trained as architects at the TVB School of Habitat but the motivation to do this came from my childhood. My uncle is an energy efficiency professional and he helped me with a holiday homework on global warming when I was in Class 6. It was very illustrative. My interests were sown at that time. So this was natural progression. Alpana was moved by the amount of waste she saw here, and in the US where it was much worse. We returned since we wanted our daughter to grow up knowing the realities here.

How can you help people build their own energy consumption?

People usually have a good idea of what they want. They have a vision of their dream house. They know if they want granite or marble. Good light and less electricity is part of the dream but is less well spelt out as against what cladding or flooring they want. They have a good sense of space, colours and light but it translates into inap-

propriate material which does not add to performance.

How does someone approach your services?

You usually go to an architect. The client sometimes demands a green building. In one residential house that we did in Delhi, the architect enticed the client to invest in better insulation and daylight and then he had to bring us in. So we created a simple form of our service and billed them Rs 30,000. It took us a month. Usually we would have charged Rs 100,000 but we under-billed as part of our marketing efforts.

In this case we brought down the tonnage of air-conditioning from 11 tonnes to nine tonnes. That is Rs 50,000 in capital costs. They run their AC for five months instead of seven because of increased insulation.

So insulation is a large part of reduced energy needs...

Yes. A key part of heat gain is exterior load, the sun coming through the envelope. If a residence is not designed well, you pay through your nose. Many people think the electricity bill is a fixed cost but it can be brought down. Insulation and size of windows are two factors. Windows have a conflicting purpose – view and daylight. They get in heat. You have to be measured about the whole thing.

So our services could be for already existing homes or new homes that want to adhere to

“A key part of heat gain is exterior load, the sun coming through the envelope. If a residence is not designed well, you pay through your nose. Many people think the electricity bill is a fixed cost but it can be brought down. Insulation and size of windows are two factors.”



Neeraj Kapoor and Alpana Jain

green homes standards according to IGBC. In the case of windows, we do an analysis of daylight and energy consumption and the payback.

The material makes a lot of difference. The exterior finishes have to be white or light coloured. You should have cladding that reflects light. This is especially important for the roof. Metal windows get in more heat, for example, aluminum windows. If the window to wall ratio is high you may have to use double glazed window glasses. Otherwise, they will let in heat. Window frames made of wood let in the least heat. But now you also get window frames made of composite material.

Does this mean using expensive material?

No, it can be done inexpensively. Use broken china on the terraces. The heat gets reflected. You can also have pots in the roof section. That provides insulation on the roof.

In large buildings you can have sky terraces with native hardy plants. Also re-cycle water and use that water for these plants. This adds to insulation.

There are a lot of design solutions too. The spaces have to be taller with a ventilator. That stratifies air. The geometry of the space and the windows can make a lot of difference. Venturi



LAKSHMAN ANAND

LAKSHMAN ANAND

effect is one technique.

Isn't all this basic?

Yes, it is about bringing traditional architecture back. It is not about building whatever you feel like and sticking an air-conditioner in. We have been to spaces built by contemporaries where the space is very nice but there is not even a ceiling fan. It has beautiful visual connections but absolutely no performance. Thermal comfort is through inefficient artificial means. We recommend that the air conditioner be set at 28 degrees and then use a ceiling fan. That is comfortable. You get down temperature loads through wall insulation, shading windows, walls, capturing space, capturing wind and creating courtyards. Also, all your gadgets need to be rated for efficiency.

What are the other things one can do for insulation?

If you are building a farm house build houses that can breathe, with mud walls. Traditional buildings had thick walls. That provides insulation. The inside wall temperature should be 30 degrees centigrade.

Most houses are now built by builders...

The builders want to reap profits right now.

They invest very little time or money. But people need to be aware. It is affordable for a builder. He will think about it if people demand it. In fact, they will do anything if it marketable.

What about office buildings?

Tenants in office buildings don't care about electricity. They write it off as fixed costs. But if it is your building you can take care of net energy and make it carbon neutral. If it is a new building you begin at the drawing board. In an existing building the windows, window to wall ratio, internal load of heat, the number of people, equipments that give off heat all matter and have to be taken into account while simulating.

Are you working on any such large project from the drawing board right now?

We are building swank service apartments in New Friends Colony for people who are running a boutique hotel there. Their customers demanded a sustainable building and so the owner is driven by market needs. We are working with another architect there. They want to go for a Green Homes rating.

We usually start with site selection. If you have a choice then you take a polluted site and revive. But in this case, the site is a given. We are

working at preserving the topsoil, the bio-life in the topsoil. If you see the micro-climate in Delhi and just a little outside there would be a difference. If you have hard surface you create urban heat islands. We are helping the architects with choosing material, planting appropriate trees, creating pervious paving, rain water harvesting. Landscaping has to go side by side. Solid organic waste is going to be turned into manure here.

Can you give me an example of how you helped the architects here...

We are recommending flushes which use less water. We are designing a rain water harvesting system and a waste water management system. We know the vendors and the materials. We helped with the wall section. They had to have minimum insulation value and thermal resistance. So we chose autoclave aerated concrete blocks. Autoclave allows air pocket formation. It makes it very light and fluffy and is high on insulation. It is made of fly ash and is hence recycled material. When we recommend material like this, we also find vendors. The vendor has to be able to supply reliable quality and quantity.

When you are talking about energy is it energy consumption or also the energy that goes into the material that is being used while it was made...

Both. Bricks, for example, use good top soil from farms and a lot of energy goes into firing that. We can get machines from Development Alternatives or from Hydrafarm to create stabilized earth blocks. You can make bricks out of the earth you are excavating.

Actually we have to do a whole building energy simulation. There is an energy efficiency code for buildings that was drafted by the Bureau of Energy Efficiency under the Ministry of Power along with the International Institute of Energy Conservation. This project began in 2004 and was released in 2007.

How do you do a whole building energy simulation?

This can be done for new buildings and old buildings. We try to understand the energy consumption in the building for the whole year. We take the thermal input loads, heat gain through the envelope, lights, fans and map out the pattern of usage and the schedule of use. We can do a weekly schedule or even an hourly schedule and compare it with a baseline scenario.

Everything is linked. You decide to use incandescent lamps or high energy lights and this can increase your air-conditioning. A wrongly placed chandelier or high-energy spotlights can increase air-conditioning load. The placement of all equipment inside a building becomes important.

Do you also work on air quality?

Various finishes are important. You have to buy paint with low VOCs (volatile organic compounds). When you buy plywood there are adhesives in it. These would have organic compounds too.

ETERNAL ANSWERS

Do a U-turn now and park some water

ANUPAM MISHRA

THERE is nothing on Earth more organic than water. You can have a synthetic version of just about anything, even milk, but when it comes to water you need the real stuff. Nothing else will do. You can't get water from the private sector or the public sector. It can't be produced by an Ambani or an Amul. There is just one company that produces it and that is Nature Inc.

So, core to the organic lifestyle is an understanding of the importance of water and how it should be used as a sacred source of energy for all things living. If we can't get our equations with water worked out, if we can't understand where it comes from or how it can be saved, then we have to concede that we have placed ourselves on the edge of extinction.

Inherent in the search for an organic lifestyle is the understanding of how Nature works. This is not an understanding that comes from formal education. It flows from the core of a society's values – those instinctive, unexplained, unplanned, untaught sensibilities that communities nourish for the sake of their survival and the well-being of their future generations.

So, it is a big crisis for all of us when we get out of tune with water. It is a disconnect that finally results in a resource gap that divides people and destroys the social fabric – apart from the more obvious inconveniences that the absence of water may cause.

The organic lifestyle is nothing if it can't be inclusive. If some of us have mineral water and the rest of us only get access to contaminated water there is something wrong in the lifestyle we have chosen. It is necessary that there be a commitment to uniformity, an equalness. The symbol of all genuine aspirations to being organic should be bubbling streams and free-flowing rivers. It should be the community tap and step-well.

Since Independence, there have been several "water policies" in India. Every state has one and sometimes, if you succeed in getting out the files, there are revised policies as well. But that is the outcome of what bureaucrats and some engineers do. What we don't have is a societal understanding of our dependence on water. It used to exist and proof of that is to be seen in the traditional water structures that

have been built generations ago. But now things are different. Instead of those intricate and wonderfully designed structures, feats of ancient engineering that survive even today, we have the plastic water bottle. Instead of the earlier faith in conservation and cautious use, we have the contamination and excessive withdrawal of groundwater that is so difficult to replace.

There isn't an Indian city which doesn't steal water from somewhere and pass it off as its own. Take the case of Delhi, the Indian capital, which should have really set an example for others to follow but instead is exactly how a city should not be in terms of resource management. Delhi used to get its water from the Yamuna and the Ganga – now both have been reduced to drains. Then there was the water from the Bhagirathi, which comes out of the Tehri Dam. Now Delhi wants water from the Renuka in Himachal Pradesh.

Delhi wants water from everywhere and can't get enough. But what does it do with its own water? If we look around us, we can see it going waste. The government has large hoardings propagating water harvesting, but Delhi's groundwater levels continue to decline almost in step with the quality of our politicians.

Delhi's problem is that it needs water, lots of it, all the time, but its citi-

zenry have no place for water in their lives except for using it up. A society which pledges itself to an organic lifestyle, must first find a place for water in the way it lives. So by all means build a Khel Gaon and an Akshardham but also think of creating a Jal Gaon and Jal Dham.

We are obsessed with creating parking space and why not considering the number of cars that we have. Of course we need to park them. Parking goes up in multistoried lots. It also goes down in basements. But how about places where we can park some water and keep Nature's cycle alive.

In the heart of Connaught Place in Delhi you will find a beautiful step-well built perhaps 500 years ago. You could consider this to be a parking lot for water – all of five-storeys deep. So what do we see here? The people who lived in

We are obsessed with creating parking space and why not considering the number of cars. Of course we need to park them. Parking goes up. It also goes down in basements. But how about places where we can park some water.

LAKSHMAN ANAND



Agrasen ki Baoli, an ancient step-well at Connaught Place in the heart of Delhi. A parking lot for water?

Delhi 500 years ago had an interest in water that rivalled if not exceeded our present-day interest in cars. The result is that they had lots of water in those days. And we of course have lots of cars but no water.

The organic lifestyle depends on how you see the world, how you approach it. Delhi of the past was replete with water tanks like the one at Hauz Khas and Hauz-e-Shamsi. Canals criss-crossed Delhi and linked up with the Yamuna. There were rivers where we now have the India International Centre, the Prime Minister's house and Connaught Place.

It was a water culture that prevailed. Rainfall was conserved, water sources recharged and water reused. How different was that sensibility to our current one in which we consume and destroy and then go in search of distant sources that we can plunder.

The amazing thing about water is that Nature is forgiving of even the most conspicuous spenders. It is the globe's most precious resource and so Nature knows that it has to be generous in its judgments. If you cut down a forest, it may take another 100 years to grow it back. If top soil is destroyed replacing it may never be possible. But if you have been wasting water and want to make up for it Nature quite easily gives you a second chance.

It may interest an automobile obsessed public that U-turns are allowed. But it is you who has to realise that there is very little left that is worth

speeding towards and it is time to do that U-turn and park a little water for a change.

How difficult is this to do? Not very, in my view. In India we have Cherrapunjee, which is among the wettest places in the world. We also have Jaisalmer, which, being a desert, does not get much rain. There are many other places which do not experience extremes – they get an average rainfall. If we go back a bit in time we can understand that communities across India judged what they were accustomed to getting from nature and ordered their lives accordingly. Being able to read nature was a sign of their modernity, their evolution. Systems would vary depending on whether people were dealing with excess or scarcity. But there was always a script for survival and it suited local needs, geography and so on. At no point could a community be out of sync with its own realities and hope to get by.

In Jaisalmer, with just a few centimetres of rain, people manage to store water and have enough for their needs. They rely on the wisdom that was handed down to them over generations to create the water harvesting structures that they need and have a clear idea of how much they consume. Cities like Delhi, which always seem starved of water, need to learn from a Jaisalmer. There is much more rainfall here and no reason why it cannot be banked and used for the needs of the city as it was at one time.

Anupam Mishra is at the Gandhi Peace Foundation in Delhi

A little help with water harvesting

Civil Society News
New Delhi

BILLIONS of litres of water go waste in our cities each monsoon. If we were to save even a part of this runoff, the urban water shortage would seem less daunting. An independent house, an apartment block or even an entire neighbourhood can harvest rain water and put it back into the earth or store it in ponds and tanks for immediate use.

When rain is collected, a moisture cycle is set in motion. Aquifers begin to get replenished and the water table rises. Localities that are water secure have more green cover and a cleaner environment. They are perceived as having a future and tend to enjoy higher real estate values.

With rivers drying up, cities which can't meet their own water needs and refuse to be conservative in how they use water are in for a really tough time, especially in the northwest of India. Some rapidly expanding urban centres like Gurgaon have already pumped out so much groundwater that they can never hope to replenish it fully.

Nevertheless, water harvesting can ease the situation even if can't repair it fully. But how much water can we save through water harvesting and how should we go about it?

Onkar Nath Tiwari works for Green Systems, a company that specialises in installing water harvesting structures. We asked Tiwari to spell out water harvesting like he does with Green Systems clients. Here are some points to remember:

Community activity: Water harvesting works when it is undertaken collectively for the benefit of the community. Recharging and extraction are two sides of the same coin. Residents of a neighbourhood have to decide how much water they want to save and at what rate they should withdraw it.

The water harvested by a single house and put back into to the ground becomes part of a larger collection underground. It comes back through the tap.

Tanks and ponds: One way of harvesting water is to let it flow into tanks and ponds. This too recharges groundwater. But there limitations to what can be done with water saved like this. There is also the possibility of contamination over time.

Natural filters: Water that is put back into the earth goes through a process of filtration. This partly happens in the manmade recharge structure through which the water is directed. The rest of the filtration takes place as the water passes through layers of the soil on its way to an aquifer.

It is during this journey that the harvested water loses deposits and impurities.

Directly into a tubewell? It is not advisable to put harvested water directly into a functioning tubewell because deposits that have not been filtered out can clog the tubewell.

A bigger worry is pesticide and other chemical

About 80 per cent of the rain that falls on a rooftop can be used to recharge ground water. For parks, roads, pavements etc, 10 to 40 per cent will perhaps be available for recharge.

residues which could come off lawns and green areas. Putting harvested water directly into a tubewell without filtration means these contaminants enter an aquifer unchecked.

But a tubewell is needed: A tubewell that takes the harvested water to an aquifer is part of a recharge structure. But this is unlike the tubewell that you use to withdraw water. In fact you can't withdraw water from it. The harvested water goes through filters and through the one-way tubewell into the earth.

What does it cost? You need to discuss this. It is upward from Rs 4,000.

Long-term: Build a recharge structure to last 30 or 40 years. Make sure that it is constructed by specialists who take local conditions into account.

So, how should water harvesting structures be built? How can they help communities face situations of water scarcity? We have the example of a residential colony and an independent house in Gurgaon:

THE NEIGHBOURHOOD RECHARGE

The colony we are familiar with is South City 1, which is located close to National Highway 8 a few kilometres from the shopping malls of Gurgaon. Like most colonies in Gurgaon, it is mostly dependent on groundwater. It is supposed to get 70 per cent of its requirement from a canal source, but in reality the situation is just the reverse. In fact, the canal water hardly ever reaches the colony.

If South City 1 continues to draw on groundwater, it is likely to touch a depth at which it will only get saline water in coming years. On the other hand if it harvests rain water it can save the situation. The annual average rainfall in Gurgaon based on the past 20 years is 710 mm. The average for the past two years is 650 mm.

South City 1 currently harvests just about 25 per cent of the rain that it receives. It has been trying to improve its record. If it were to harvest all the rainfall that it receives in a year it could put some 370 million litres of water back into the ground. This actually means that South City 1 would be replenishing as much as it uses when it is completely occupied.

The area of South City 1 is 301.43 acres. Of this, 144 acres is for residential purposes and 167 for parks, lawns, roads etc. If you convert the acres into square metres, this is what you get: 1,220,188 sq metres. Now one square metre receives at the minimum 500 litres of rain water in a year. So, South City 1 gets 610 million litres of water.

On an average 80 per cent of all the rain that falls on a rooftop can be used to recharge ground water. Elsewhere in the colony (parks, roads, pavements etc) between 10 and 40 per cent will perhaps be available for recharge. The amount of water that goes into recharge is called the run-off coefficient. The formula for water saved is catchment area x runoff coefficient x annual average rainfall.

So the potential for harvesting rain water in South City1 based on the different surfaces is something like this:

Area name	Area in sq m	Water harvesting potential in litres
Rooftop	582,624	330,930,432
Lawns, roads and other areas	635,222	451,00,762
Total:	1217846	376,031,194

To achieve this, South City 1 will have to increase the 15 community structures it currently has to 90 and all its 900 proposed dwelling units would have to be built. Right now just 60 per cent of the dwelling units have been built.

AN INDEPENDENT HOUSE

Independent houses with water harvesting structures have a huge potential for replenishing ground water. A house in Gurgaon with a flat terrace of 100 sq m should be able to put back 56,800 litres in a year.

Once again this is based on the calculation that Gurgaon gets 710 mm of rain annually. The quantity of water available for recharge annually from a 100 sq m terrace would be:

100 sq.m x .710m x 0.8 = 56.8 cum. or 56,800 litres

A recharge structure is prepared based on the average hourly rainfall for two years. If we take an average of 30mm an hour and a 100 sq m terrace, the rechargeable water available will be:

100 Sqm X .80 Runoff co-efficient X .030 mm of rain in one hour. So, the total rechargeable water available in an hour will be 2.4 metre cube or 2,400 litres.

Nature-friendly festivals

Abhinandita Mathur
New Delhi

IN 2006, Manisha Gutman was leading an education campaign on Safe Festivals for the Kalpavriksh Environment Action Group in Pune. Like other environmentalists, Manisha was concerned. Every year millions of idols are immersed into rivers adding to pollution.

"After spending several years creating awareness about the need to celebrate festivals in an eco-friendly manner, it became clear that alternatives which were available and accessible to the public were needed," she explains.

To fulfil this need, Manisha formed Ecoexist.

The organisation designs, produces and markets eco-sensitive products through socially sensitive means. Slowly, Ecoexist grew and so did its team. Manisha was soon joined by Lolita Gupta, an educationist, and Abida Khan who has expertise in fabric.

"In Pune, the rivers Mula and Mutha are suffering from inadequate flow and sewage effluents. During the Ganesh Chaturthi festival, immersion aggravates the issue. We decided to address this problem first," explained Manisha.

That's how an eco-friendly idol of Lord Ganesh was born.

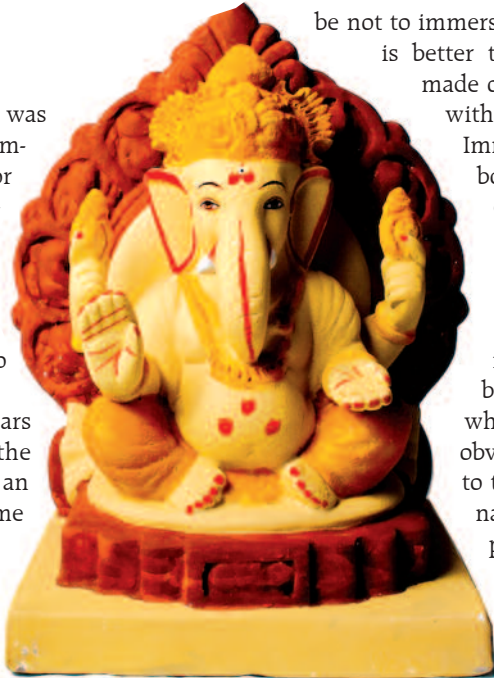
Ecoexist replaced idols made of substances like plaster of Paris and toxic chemical paints with non polluting material. The alternative offered by Ecoexist is made with natural clay and uses natural colours.

Their Ganesh idols come in a variety of 18 designs. Sourced from Pen in Maharashtra and Sirsi village in Karnataka, the idols are either sculpted by hand or moulded with clay. Pigments to paint the idols are completely natural, using earth or vegetable dyes.

In addition to the idols Ecoexist has also developed religious decorative accessories which can replace those made of thermocole and plastic. "Our decorations use recycled cloth and are made by self-help groups. We use fabric and paper and the images can be reused again and again for several years," explains Manisha.

The size of the idols is limited to a maximum of 18 inches. "We believe that size is also a factor that impacts the environment," says Manisha. The idols are between eight to 18 inches and cost between Rs 350 to Rs 1,500.

Manisha confesses that the real solution would



be not to immerse any idols in the water. It is better to have a permanent idol made of metal or stone that stays with the family for generations. Immersion can be done symbolically by sprinkling a few drops of water on the idol.

"That is still a distant dream," she admits "Until everyone is convinced and agreeable to doing this, we realise that there needs to be an interim alternative which is biodegradable. The obvious solution was to revert to the older tradition of using natural clay. This allows people to immerse the idol in a bucket of water at home and continue the Visarjan tradition."

Interestingly, Ecoexist

open to the message of environmental conservation."

The response Ecoexist has been receiving indicates they have struck a chord. "We start taking bookings almost six weeks ahead of Ganesh Chaturthi and end up being sold out days before the festival begins! We have had repeat customers coming back to us every year. This year the response from Mumbai has been overwhelming and it is reassuring to think that our products are relevant and needed in the market," says Manisha.

Yet, Ecoexist is in no rush to expand its business.

Do they plan to venture into other eco-friendly idols? Manisha expresses concern about the non-renewable nature of natural clay. It is mined and needs to be used carefully, she explains. "Before we introduce new products, we seek to learn more about how best to produce them. We plan to create a mix of substances that use minimal natural clay with other renewable natural fibres. This would make the idols biodegradable and durable. We plan to explore the methods used for making Durga Puja idols in Kolkata and introduce similar techniques in Maharashtra," she says.

Another project Ecoexist is working on is 'nirmalya'. A lot of flowers are immersed along with the idols. Such offerings result in tonnes of waste

"After spending several years creating awareness about the need to celebrate festivals in an eco-friendly manner, it became clear that alternatives which were available and accessible to the public were needed," Manisha explains. To fulfil this need, she formed Ecoexist.



doesn't advertise. It uses its website to reach out to buyers. Information about each product is available and you can book orders online.

They try to educate and create awareness about environmental issues through workshops and camps.

"We are dealing with a sensitive matter here," admits Manisha. "The politics around the subject and the sensitivity of the sentiments involved is a challenge. It is essential for communication to be personal, respectful. Then most believers are

accumulating. Some of it is biodegradable and some is not. Ecoexist collects these offerings. It has trained the women prisoners of Yerawada Jail to process discarded flowers into natural colours that can be used during the festival of Holi.

"Eventually we would like to be able to convince people that Nature is sacred in herself, and that originally all our festivals were a way of offering gratitude to Nature. If we can bring back this awareness to our society, Ecoexist will have achieved its goal," says Manisha.

GREEN COVER

Let's not torture our trees

RAVI AGARWAL

BY some estimates, more trees have been chopped off in the past decade than probably in India's recent history. Along newly broadened national highways, new roads, new constructions, trees have been brought down without a thought. In Delhi alone it is estimated that over 200,000 trees have probably been hacked for various projects leading to the Commonwealth Games, 2010.

The same destruction is taking place in cities all over the country. In Pune, Bangalore, Chennai, Lucknow, trees are being cut. Many of these trees are old, even ancient and are part of our heritage. Recently, while travelling in the US, a native Punjabi cab driver bemoaned after learning where I came from: "They have cut trees everywhere. Delhi is not the same anymore."

In Delhi the skyline has changed in visible ways. Roads which were green and shady are now bereft of tree cover. As the city becomes a criss-cross of roads and metro rail tracks, transport corridors have taken precedence. 'Efficiency' has become the sole driver of this change. No thought is given to keeping the city's character intact.

At the same time, the State has been acting in a non-transparent manner. There is little information about the number of trees that are to be cut or the places from where they will be cut. More often than not, this is only discovered once it happens. Public protests about tree cutting have been dealt with subterfuge, instead of openness and concern.

When the tree campaign, Trees for Delhi, was at its peak and the media was glaring down at the government, trees were simply cut in the dead of the night. The government formed a Tree Authority advisory body and included NGOs. But promises to provide public information, street marking of trees, etc have not been kept. It now appears that the public campaign was dealt with as a government public relations exercise.

Claims of re-planting and compensatory afforestation in suburban city forests have been made, but without addressing the core issues raised by the campaign, namely keeping in-city and neighborhood trees intact. New

colonies have been markedly bereft of tree cover. Those who spoke about saving trees were branded 'eco-terrorists,' 'romantic', 'anti-development.'

The issues being raised are relevant both to the 'tree' and to what the city of the future is meant to be. City trees provide a livable landscape. You have to see a tree-less city like Dubai to know what this means. Trees change skylines, provide a habitat of birds, bird calls, nests and insects, and a constant realisation that life has other dimensions.

While investments in city infrastructure are being done arguably to ease the lot of its 'poor', (even as they are moved out of the city) yet it is these citizens who have lost the most. The poor have even closer everyday links with trees. Trees provide shade, a place to set up a little food stall or a bicycle repair shack. Only engineers and planners who want to reduce all of life's values to a concrete 'functionality' cannot see this. In fact, the tree should be as much a part of the city development debate, as stadiums, highways, or market complexes are.

Is it that we are unable to value anything which does not generate 'revenue'?

Trees help percolate groundwater, make soil stable, lower temperatures and influence micro-climates. However, it is equally relevant to think of trees as adding another critical quality dimension to our lives.

Most trees have disappeared to accommodate more cars on the road.

With no end in sight to the unbridled increase in cars, roads are now extending from house front to house front. Most widened roads have no place for pedestrians or for cyclists, leave alone trees. The Trees for Delhi campaign discovered that the path between houses was legally a 'right of way' and that city planners had full right to do what they wanted in that area. It is clear that trees are not even thought of when road widening plans are made, and they are treated only as an inconvenience.

In many cases, it is possible to change road orientations to save trees, but this is not done. Once such plans have been made, clearance for tree cutting is a mere formality, even though cities like Delhi have a Tree Preservation Act. It is not possible for the Tree Officer, who is the Conservator of Forests, to reverse matters at this late stage when plans have been approved

In Delhi the skyline has changed in visible ways. Roads which were green and shady are now bereft of tree cover. As the city becomes a criss-cross of roads and metro rail tracks, transport corridors have taken precedence.

RAVI AGARWAL



A tree chopped down in Delhi

and budgets sanctioned. In the case of the Commonwealth Games, trees have also been brutally chopped off on construction projects. Even the Reserved Delhi Ridge Forest has been a victim of the Metro line. At Siri Fort, another protected forest where the DDA is constructing a badminton stadium, local residents protested. Even the Supreme Court appointed committee (2009) stated... "this site is not an appropriate location for such a project. It is far from any Metro Station, and furthermore it has involved the savage cutting down of a humongous number of trees, in what can only be described as a wilful and heartless manner."

Surprisingly, in many cases, residents themselves have been insensitive to trees. Each winter, there is a clamour to 'prune' colony trees. So branches are lopped off by hired contractors who gain by selling the wood. It is not uncommon to see beautiful large trees standing precariously unbalanced, their branches cut on one side, rather than scientifically pruned. Despite the presence of a large population of such trees, proper equipment such as lifts and long shears are not available with the municipalities to prune the trees as required.

The problem of tree tiling has been highlighted for a long time, mainly through the efforts of environmentalists. Kalpavriksh in Delhi has even gone to Court to obtain orders against this menace which intensifies just before the end of the financial year in March. Contracts are handed out to

'tile' pavements, even though in many places natural grass and soil is preferable. Tiling chokes the tree. Then the tree is subjected to lopsided pruning. It becomes unstable and often falls when the wind speed is high. Despite alternatives like porous tiles and despite court strictures of leaving adequate space around the tree trunk, tiling continues unchecked.

Citizens have been protesting in many places. In Bangalore, the Environmental Support Group (ESG) along with others have started a campaign against thoughtless road widening and the taking over of public spaces for infrastructure projects without any public consultation. In Pune, environmental groups like Kalpavriksh and citizens have been trying to stop tree cutting clearances by initiating transparent procedures. The battle is uphill. Trees need to be considered part of the city's planning exercise, otherwise it often becomes too late to save them.

For me, personally, the mango tree in the backyard of our government bungalow was my afternoon retreat after school. Later, this led me to the forest, taking children for walks, and guided my entry into environmental work through the Save the Delhi Ridge Campaign. The mango tree was an inspiring imprint, an image I visited and revisited, a bond of imagination which exists to this day. My tree is surely 'functional,' but in very different and important ways.

Ravi Agarwal is Director, Toxics Link, New Delhi

Grow a herbal pharmacy

Shreyasi Singh
New Delhi

MORE than 7,500 plant species are used across the country to treat an array of ailments. Bangalore-based Foundation for Revitalisation of Local Health Traditions (FRLHT), a non-profit, is working to sustain and revitalise this rich medical heritage.

To help city dwellers forge a bond with healing plants, FRLHT launched the Amruth Home Garden programme in Bangalore in February 2005, aimed at promoting self-reliance in primary health care.

Through the programme, urban homes are introduced to carefully selected healing plants which can meet a family's primary health care needs. Around 20 minor ailments like cold, cough, indigestion, child care and relief from stress can be treated. Ease of use, safety, efficacy and the ornamental appeal of the plant have also been taken into account.



The 21 plant species selected under the programme have been formed into three different packages – A Basic Package of seven species for Rs 150, an Advanced Package of 14 species for Rs 225 and a Complete Package of 21 species for Rs 300 keeping in mind space availability in different households.

"Having a home herbal garden means you can have a 24x7 green pharmacy right at your doorstep. Plus, the garden offers an aesthetic ambience with flowers, fruits and green foliage. Gardening is also healthy and therapeutic," explains Govindaswamy Hariramamurthi, a senior programme officer with FRLHT.

Begin planning your herbal garden by choosing the primary health conditions for which you want medicinal raw materials in ready supply. In fact, FRLHT gives one free health check-up by expert vaidyas at its clinic in Bangalore to all sub-

scribers of the Amruth Home Garden programme. Second, evaluate the space you have for the herbal garden. It is also important to factor in your region's climatic conditions. The aloe vera plant does very well even in extremely dry and hot conditions but will not grow at all in extremely cold or wet regions.

Herbal plants require care similar to most other plants. Watering is critical, and Hariramamurthi says waste water from kitchen and bathrooms should be channelised. Periodic weeding, pest control and manuring should be done to enhance growth.

Third, judiciously choose medicinal plant species required to meet your family's specific primary health care needs. Other than the basic, advance and complete packages, FRLHT has designed seven special grow packages – Cough and Cold, Metabolism Plus, Stress Reliever, Revitaliser, Child Care, Skin Care and Hair Care.

WONDER PLANTS

Botanical name	Kannada name	Habit	Where to grow the plant	Part of the plant used	Uses
Aloe vera	Lolesara	Herb	Pot/Rockery	Leaf pulp	Cuts, wounds and burns, eye problem, scanty urination, stomach ache, menstrual disorders, liver tonic, hair care
Adhatoda vasica	Adusoge	Shrub	Pot/Hedge	Leaves & roots	Cough, respiratory problems, fever, bleeding disorders
Hibiscus rosa-sinensis	Dasavala	Shrub	Hedge/Single	Flowers	Menstrual disorders, hair care, scanty urination
Ocimum sanctum	Tulasi	Herb	Pot/Hedge, In group /single plant	Leaves	Cough and respiratory problems, eye problems, fever
Bacopa monnieri	Neeru brahmi	Herb	Shallow elongated pot, Semi aquatic shady locations	Leafy shoots	Memory enhancer, hair care
Piper longum	Hippali	Climber	Pot/Shady locations	Fruiting spikes	Cough and respiratory problems, headache, hoarse throat, indigestion, stomach ache
Tinospora cordifolia	Amruthballi	Climber	Pot/Fence, Needs support to climb	Stem	Fever, general immunity, acidity, liver tonic diabetes

Each package has ten plants of four species and costs a nominal Rs 150. All of them come with a User's Guide.

FRLHT packages include many multi-purpose medicinal plant species like the Shoe Flower Plant (*Hibiscus Rosa Sinensis*). The medicinal species of this plant has red and white five-petaled flowers which look aesthetic. Its flowers are used for relief from irregular menstrual bleeding and exhaustion-induced fever. The leaves grind into an effective herbal shampoo. And, the flowers are also used for offerings in worship.

Some medicinal plants offer seasonal, edible fruit. For example, pomegranate (*Punica Granatum*) fruit rind is a highly effective medicinal ingredient for diarrhoea management. Its fruit is nutritious and known to boost blood circulation. The common guava plant (*Psidium Guajava*) gives tasty, juicy fruit, and its tender leaves can be boiled and used for gargle in case of severe toothache and chronic diarrhoea.

In the last four years, FRLHT has helped set up more than 7,000 urban home gardens in Bangalore. It says the cold and cough package is most popular for children and the cosmetic plants packages is a hit with women.

"When we first started in 1993, people were not very receptive to medicinal plants. But we have worked to educate them. Now, medicinal plants have become aspirational. Those who have set up herbal gardens at home feel proud of the knowledge they have gained. They advise neighbours and friends and help them treat common ailments naturally and effectively," adds Ganesh Babu, a research officer at FRLHT.

Babu says that plans are in place to take its urban programme to other areas. FRLHT is confident its previous experience with promoting rural home gardens will come in handy. With women self-help groups and local NGO partners, FRLHT has established over 150,000 rural herbal gardens across Karnataka, Andhra Pradesh, Chhattisgarh, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and Tamil Nadu.

FRLHT also works with institutions like schools, hotels, corporate headquarters and government offices to plan, design and execute landscaped, herbal gardens.

It has three packages for institutions similar to the ones for homes – Basic Package (250 plants for Rs 2,500), Advanced Package (310 plants for Rs 3,000), and Complete Package (350 plants for Rs 3,500). Ganesh Babu, says institutional gardens are best customised, and generally emerge from detailed interaction to suit a site's land area, aesthetics, climactic conditions and needs.

FRLHT has provided consulting services and plant supplies to more than 150 institutions.

"These gardens are an important showcase of our efforts. Employees, visitors and guests that visit these gardens get inspired to plant similar gardens at home. Institutional herbal gardens spread the message and effectively display the multiple benefits of medicinal plants," says Babu.

Address: FRLHT, 74/2, Jarakabande Kaval, Attur,
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Phone: 080-28568000, 28565760, 28564897

Sky gardens are cool

Shreyasi Singh
New Delhi

With most people living in small apartments, it becomes hard to find space for a garden. BCIL, India's biggest green building company, has shown that low rise apartments can have a sky garden.

Organic sky gardens are vegetated terraces covered with plants. Compost, including grass clippings, kitchen scraps, and dried leaves are deployed to nurture such gardens.

These gardens use sustainable materials like coir pith, mulch and compost for laying the plant bed. Senior BCIL architect Anuradha Desikar Eswar says sky gardens are essential in greening the concrete jungles that our cities have become.

Sky gardens are simple to set up. Architects advise the following steps to get started.

- Verify to see if your terrace can take the load of a garden. A general rule-of-thumb is to ensure that the concrete portion of your roof slab has a thickness of above five inches. This will enable you to lay organic matter of around four to nine inches depth to grow plants.
- Ensure your terrace has a clean, smooth slope with a gradient of 1.5 to 2 inches minimum towards the outlet. This is essential to avoid water stagnation. If you have a larger terrace of over 400 square feet, you need to put in place a network of drains for every 100 sq ft on an average. If pipes are placed as drains, do remember that they need to be accessible for maintenance and should not be covered by soil.
- It is critical to waterproof the surface and ensure it is done well. Mistakes might lead to seepage in rooms below the sky garden. Follow this with the laying of a drain bed to drain water away from soil and floor. A simple method is to lay baby jelly two to three inches thick and cover it with a filter cloth. This stops soil from draining down into the filter bed.
- A lightweight soil mix of 60 per cent composted coir, 30 per cent red soil, 5 per cent manure and 5 per cent sand is ideal. Many people also use perlite, a readymade mix especially formulated for terrace gardens. But, BCIL says the homemade mix is as effective, and cheaper.
- Do factor in the availability of sunlight which is critical to your garden's growth. Sky gardens work very well in double height floors and on top of

buildings.

A typical organic sky garden can cost between Rs 150 to Rs 200 per sq ft depending on your choice of plants, the height of planting media and labour wages.

With the basics in place, says Anuradha, get creative with what you would like your garden to be. You can have pebbled pathways, bird baths and planters placed aesthetically at different heights. Let your garden design dictate the choice of plants - fragrant flowers like jasmine or temple tree, kitchen

vegetables like spinach or brinjals, and herbs like parsley, sage, rosemary and thyme are popular choices.

"Visit your local nursery and read up on the internet to learn more about companion plants to optimise your sky garden. Companion plants are those which when planted next to each other enhance the quality and growth of both. For example, planting tulsi near a tomato plant can yield tasty and juicy tomatoes," adds Anuradha.

A lawn can also be planted. Sturdier grass like Bermuda which requires

less watering should be used instead of exotic varieties such as Mexican grass. Lawns are often over-irrigated, and lead to wastage of water because people don't understand them. When a grass is brown due to lack of water, it is not dying but hibernating till the monsoon season brings it water naturally.

A green patch can be achieved even in extreme poverty of space. The trick is to think vertically! Vertical gardens, popular internationally, treat walls to make them suitable for plantation.

In the most basic vertical garden, walls are generally covered with creepers. But, the concept can be extended. A trellis, metal or bamboo framework can support carefully planned containers tucked inside shelves to give a growing, green wall. More and more, architects are greening a building's vertical elements to keep the interiors cooler efficiently and beautifully.

Apart from the aesthetic benefits, organic sky gardens have other tangible advantages. Roof life can be doubled with a green roof. The multiple layers of coir and compost protect structural elements from natural damage. Sky gardens moderate the apartment's micro-climate. First, they increase the thermal mass of the roof and enable the area directly below to remain considerably cooler. Sky gardens lower air temperatures and reduce particulate load in the air because they turn dust into valuable soil. They also absorb ambient noise.



BCIL

Everyone needs a daily dump

Subir Roy
Bangalore

THE office of Daily Dump is located on a quiet, leafy side street of Bangalore which must be one of the most pleasing in town. Along the wall, next to the entrance is lined up what looks like earthenware vessels piled one on top of another, each set forming a brightly painted post box-like pillar and the sets coming in different sizes.

But Daily Dump is not an ethnic artifacts outlet working out of a comfortable suburban home. As mainline business stories go, it is hard to beat. In its three years of existence its turnover has risen from Rs 2 lakh to Rs 4 lakh to touch Rs 12 lakh in 2008-09. And it is projected to treble again (as it did last year) in the current year to reach Rs 36 lakh.

While sustaining this exponential growth, it is able to meet its costs and research expenses. Last year it even made some money though Poonam Bir Kasturi, the innovative spirit behind the business, is not yet taking a salary. What is exciting to her is that the business already has eight clones (those who have adopted its model) across the country in Delhi, Goa, Mumbai, Chennai, Bangalore, Hyderabad, Channapatna and Bhiwani, with Kolkata and Pune on the way, and the drawings that are the key to the business have been sent to 58 countries.

In this attempt to spread the idea across the country and the planet, Kasturi is not seeking to earn revenue through her intellectual property. All she is asking for is an acknowledgement which will enable others to access the concept through a "creative commons licence". She has chosen this route because she is keen to develop a "replicable business model" which will promote sustainability. But "sustainability implies equity", hence the decision to make the know-how easily accessible and affordable.

The business is startlingly simple and at its heart is the creation of a container that manages and optimises decomposition of garbage in a non-tedious way. It lets you compost your home biodegradable waste like vegetable peelings right at home in the simplest possible way and at the end of two months you can have a little supply of



Poonam Bir Kasturi, below, and her products



PICTURES BY: PATTABI RAMAN



ready to use compost which Daily Dump will be happy to buy off you. "The aim is to enable every house to manage its organic waste onsite," says Kasturi.

A family of five produces half a kilo to 1.5 kilo of biodegradable waste per day. The stacked set of three vessels form a khamba (pillar) costing Rs 700 and a "leave it" pot costing Rs 500 (total capital expenditure Rs 1,200) where you deposit half done compost and literally leave it to stew in its own juice. "It is a process of aerobic decomposition, nature's way of breaking down organic things," explains Kasturi.

It goes like this. Separate the day's organic waste and put it in the top chamber of the khamba and add dry leaves or sawdust or shredded newspapers equal to at least half the volume of the waste to supply carbon. When you repeat the process next day you will find the previous day's input has shrunk 20 per cent from loss of water. Stir this concoction once in three days. (Also available is a stirrer.) Once a week add a mixture which is made up of chilli powder, baking soda, an accelerator (microbial culture) and neem and stir up the whole thing. This mixture has also to be bought and the running cost comes to Rs 75-100 per month.

When the first container is full put it in the second place in the stack and when it is time to re-jig

again put the second container in the third position. By then you will find that the stuff has become black. Continue with this process as the day's supply of waste keeps coming in. When you need to empty the first pot transfer its content (half composted waste) into the 'leave it' pot. A normal family of five can create in a month 3 kg of ready to use compost which is both pest resistant and increases yields. You have to leave the whole paraphernalia on a balcony or out in the open for it not to stink but the process does attract maggot and ants. "This is a problem," admits Kasturi.

The pots are made by local potters which can be done anywhere. The key doers in the process are local networks of crafts people. This is why the model is so easy to replicate and in Bangalore now there are 4,000 users of the process. Kasturi sees its success so far in being able to create a buy-in through word of mouth by addressing the cultural aspect of waste management. Carefully outlining what is new, Kasturi says, "when people see our success they say, why didn't it happen before." The key was, "I spent a lot of time on communicating on waste."

On the broader issue of knowledge creation, she observes that "there is a lot of reinventing the wheel as firms compete in the same space devising their own way (jealously guarding their know-how) of making the same thing. Instead knowledge should be shared." How we spend our time is completely skewed. The plus point is that today "we have cracked manufacturing." It is easy to get a prototype done for an idea involving a huge amount of precision work fairly easily. "But we have not cracked issues like equal distribution of opportunity and wealth."

The whole problem is "people measure things in terms of 'our life'. But I have to be ecologically

concerned because the earth's ecology does not belong to me." To progress in this world knowledge has to be shared. A clone with freely accessible knowledge is like a custodian, son (with a sense of responsibility) not a franchisee, who is like a stepson." The challenge is "how best to generate wealth." The holistic idea encompasses "production, consumption and ecology."

You don't have such a life view in a vacuum. Kasturi traces it back to her father, Raghuvir Bir Singh, an IIT graduate from the first batch who went on to head the designing wing of HMT which in earlier days was at the forefront of machine tools and watches. Kasturi recalls how ideas about integrated relationships and sharing of knowledge which is intrinsic to India's old culture floated around her house when she was young.

The other great influence in her life was her iconic teacher at the National Institute of Design, Mohan Bhandari. Earlier in life she set up a marketing unit for crafts. Then, as one of the founders of Srishti School of Art, Design and Technology in Bangalore, she taught there for 12 years. But then the bug got her, she wanted to do things and prove her ideas – "I am a hands on person." She considers it a blessing that she has had a lot of "bizarre" experiences in life – "was in the midst of the Kutch earthquake". And in Daily Dump "I am trying to figure out all I want to do." What she knows is the "market does not drive her business, ideas do."

There is a long unfinished agenda. Daily Dump, in a sense, is preaching to the converted. It does not address non-eco-sensitive people. And you also have to work towards community composting. So she is working with solid waste contractors of municipalities. It is a continuing story.

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GLORIOUS FOOD

The many secrets of Van Vadi

BHARAT MANSATA

TWO decades ago a few hundred people from all over India converged in Bordi, a sleepy, seaside town in northern Maharashtra to attend a national gathering on 'Natural Farming and Natural Living'. There were busloads of us who then descended on Dehri, a nearby village, to visit the magnificent orchard-farm of Bhaskar Save, acclaimed as the 'Gandhi of Natural Farming'. We came back deeply inspired and highly motivated.

Several of us decided to get into the 'ecological act' ourselves. We launched a hunt for land that continued for four years, until we finally zeroed in on the place of our dreams – in the foothills of the Sahyadris, about 100 km from Mumbai. Around 20 of us pooled our money to buy 64 acres. We called it 'Vision Acres', and later adopted a local name, 'Van Vadi', meaning forest settlement or forest-farm.

Our first guiding principle was earth-care. At least half the land should remain under tree cover, agro-chemicals must be prohibited, water usage, conservative, extensive mono-cultures must be shunned, and biodiversity aided through integration of various edible and locally useful species.

Our second principle was "fair dealings with people and respect for local culture". The third guideline was "quality of life and local self-reliance should have priority over monetary profit".

Over the past 15 years, Van Vadi has regenerated into a lovely forest – lush, dense, tall and very rich in biodiversity. Groundwater recharge has greatly increased benefiting several downstream villages whose hand-pumps used to run dry in peak summer but now yield water round the year.

While we were focused on fruits and vegetables, the adivasis showed us how we could also grow on our gentler slopes a variety of local millets, sesame and rice. Over the years, several farming clearances, almost four acres, were carved out.

We listed with tribal knowledge over 115 traditionally useful species growing on our land, including 35 wild food species that yield some edible part (leaf, fruit, flower, stem, root), usually at a certain time of the year.

Food apart, we learnt that the land had 40 recognised medicinal plant

species and 20 timber species, including four 'first-grade timbers'. And then there are plants that yield natural dyes, soaps, oils (edible and non-edible), gums and resins, botanical pesticides, leaf plates. Several species have multiple uses, including fodder, firewood, fibre.

Moreover, the entire forest functions like an enormous sponge to soak and store huge quantities of increasingly precious fresh water, while all the dense vegetative growth serves as a 'sink' for absorbing carbon dioxide – the best antidote to global warming!

FOOD AND FOREST: We have grown many vegetables, particularly indigenous varieties, whose seeds we save from our previous crop. We have harvested okra or bhindi, bottle-gourd, cucumber, ridged-gourd, sponge-gourd, ash-gourd, bitter-gourd, brinjal, pumpkin, tomato, musk melon, jackbean, cluster beans, cowpea, radish and several leafy greens. Initially, we grew vegetables only in the monsoon. But later, we also inter-planted in our new orchard plot near our open well, where watering is easier.

In our region, several millets are grown, usually organically for self-consumption, by adivasis living in hilly terrain.

The most popular is nagli (ragi) or finger-millet. It is highly nourishing, easily digestible, and makes delicious thin flat bread. Vari (common millet or proso millet) is favoured by local elders, who consume it on days where they fast for religious reasons. Kangu, or fox-tail millet, makes a delectable kheer, cooked with milk and jaggery.

We grow all three kinds, inter-cropping them with black or white sesame and various vegeta-

bles, particularly cluster beans and cowpea, both leguminous species that fix atmospheric nitrogen in the soil. Marigold, planted on the edges, inhibits the reproduction of insect pests.

Finger-millet is quite adaptable to the vagaries of the monsoon, including deficient or excessive rain. But sowing early before the monsoon intensifies is critical. After 'transplanting' the seedlings by laying them flat on the field, even one good shower is often enough for them to establish their roots. Within two weeks, the young ragi plants stand erect on their own!

Most other indigenous millets like pearl- millet or bajra and sorghum or

While we were focused on fruits and vegetables, the adivasis showed us how we could also grow on our gentler slopes a variety of local millets, sesame and rice.



A view of Van Vadi: The entire forest functions like an enormous sponge to soak and store huge quantities of increasingly precious fresh water

jowar are less susceptible to deficient rainfall, thus providing more secure yield. Ironically, the high nutritional value of finger-millet is recognised outside India. In Europe, it is in high demand as a food for babies and convalescents, as it is also easier to digest. It thus fetches a higher price than even basmati rice!

Similarly, amaranth or ramdana though originally native to South America, grows well all over India, and provides high food value. Indeed, it has been called the most nutritious grain in the world. India has a number of varieties adapted to diverse conditions.

FROM FARM TO PLATE: But small surpluses of varied items are not convenient for mass marketing and therefore not encouraged by wholesalers. This, along with the spread of industrial agriculture, has caused a sharp decline in crop diversity on most farms. With organic farming, too, mono-cropping – though easier for marketing – faces serious pitfalls. Nutrient deficiencies show up in the soil and insect damage progressively increases.

To overcome the problem of small quantities of many items, particularly perishables, greater adaptation is needed in organic collection systems. Marketing becomes viable if more neighbouring farmers turn organic. Small surpluses pooled from each farm then add up to a significant quantity for city markets. For selling locally, small quantities are no issue, though the price is lower. But for minimizing energy consumption and the carbon footprint, reducing 'food miles' to within a 100 km radius is required.

How can a concerned urban citizen, trapped unwittingly in the role of ecological parasite, minimise the harm he or she unwittingly causes? With rapid urbanisation, already half the world's population lives in cities that occupy two per cent of the earth's surface, but consume 75 per cent of its

resources. The urban per capita resource consumption is thus thrice that of rural areas.

One ecologically sane option is to establish organic farm-city links or grower-consumer cooperatives. At a basic level, this may provide organic food to city dwellers. At another level, it may double as a programme of 'community supported organic agriculture', preferably aimed at a whole cluster of holdings to minimise chemical run-off from neighbouring fields.

In contrast to the anonymous, impersonal market, a cooperative of consumers and farmers brings them face to face. They can then understand each others needs and difficulties and tackle such problems together. While farmers can visit the city to attend meetings twice a year, consumers too need to visit the farms and families of those who supply them with food.

The demand for organic food has increased and several organic outlets have sprung up in cities. Though well-stocked with less perishable foods like cereals and grains, a regular supply of diverse fresh fruits and veggies remains a challenge, which may be partly overcome by farming within the city.

If this seems a fanciful thought, consider that urban agriculture in Cuba yielded three million tones of organic food – mainly vegetables and fruit – in 2006, while also composting much of the city's organic waste.

Fair pricing needs to strike a balance between affordability to consumers, and viability to farmers. Since farms that newly convert to organic methods experience an initial fall in yield until the health of the soil regenerates, the farmer may need a higher price to compensate.

Gradually, the productivity of the organic farm improves as the soil regenerates, while costs decline. If more farmers turn organic, prices would then stabilise and food would become more affordable for consumers.

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Navdanya grows, organically

Shreyasi Singh
New Delhi

It is Saturday evening and business is brisk at Navdanya's organic store in Hauz Khas market. Regular shoppers know what they want and tick things off their grocery list deftly. Those who come here occasionally are surprised at the store's expanding inventory.

"I am so happy that they now stock organic pickles and squashes. I had given up eating pickle since the oil in the pickles produced by big food giants tastes horrible. With something like pickle, you need to think a hundred times before you pick up an unlabelled, uncertified product," says a middle-aged homemaker who came to the store after more than a year.

Over the last two decades, since it first began retailing its direct-from-the-farm produce, Navdanya has acquired a formidable reputation as an organic, bio diverse brand.

Founded by one of India's best known environmentalists, Dr Vandana Shiva, Navdanya began in 1987 as a programme of the Research Foundation for Science, Technology and Ecology to safeguard India's agricultural traditions. It has pioneered organic agriculture by working with local farming communities across several states.

Navdanya now has 400,000 farmer members and its retail network – two stores in Delhi and one each in Mumbai and Dehradun – have given farmers a viable market. Navdanya has established what Shiva says is critical – a direct relationship between the producer and the consumer, and a full-farm and full-kitchen cycle.

Navdanya prides itself on being the only producer-led network that sells what it grows. "When you grow for yourself, you grow for taste. When you grow for the market, you grow for mass. We are committed to not just organic food but to preserving our country's biodiversity, the richness and range of our food. Navdanya produces bhata dal and naurangi dal. It's almost impossible to find these varieties anymore. Many of our customers come here for our dals. You can't eat imported dal. How can the Americans know what dal tastes like," asks Dr Shiva.

Navdanya's first farm was in Uttarakhand and their initial products were crops like ragi and amaranth, traditional produce which city-based kitchens had long forgotten about. Navdanya stores now stock an entire Indian kitchen – 14



Vandana Shiva

LAKSHMAN ANAND

varieties of dals, 30 varieties of rice, a range of spices, breakfast cereals, snacks, pickles, squashes, chutneys and even toiletries.

Customers would request them for various products. Navdanya would then go to farmers and help them grow what the consumer was asking for. The range of foods now available on their shelves has helped increase footfalls.

"In the last five years, our customers have doubled. We sell twice as much and we are constantly adding products. We have even added organic vegetables. Navdanya members call in to book orders and the vegetables are home delivered once a week. We are soon going to offer organic milk and eggs too. We have recently set up an organic gaushala which makes organic curd," Dr Shiva adds.

"I am glad Navdanya has become a one-stop shop. Earlier, it would be difficult to come all the way just to pick up wheat and rice. But now I come once a month and do my grocery shopping. That's not tough. The variety has ensured my family and I eat truly healthy," says Shilpi Saxena,

a regular shopper who travels nearly 15 km from her home in Noida, a Delhi suburb, to refill her kitchen supplies here.

Navdanya now breaks even and has a roadmap for growth. Dr Shiva admits staying viable has been a challenge. Work is on to open stores in Noida and Gurgaon over the next few months. Another store is likely to come up at Dilli Haat in Pitampura.

Navdanya is also exploring the franchisee model. Already, they stock products in a store in Bangalore and a few outlets in Delhi on commission basis. Soon, franchisee partners will be sought for other cities.

The ambitious blueprint indicates robust consumer demand. "Yes, the last five years have seen increased awareness. What's also happened is that there is an even bigger assault on the food available to us. There has been a disappearance of valuable food. Because food prices have hit the roof, our grocery shops are laden with spurious, adulterated food. We are seeing a food crisis. You can't even afford food, let alone aspire to good quality food," Dr Shiva says.

The hike in prices of food has resulted in a reverse cost advantage. Organic produce has always been accused of being niche, elitist, and expensive. Ironically that gap has narrowed. Navdanya points out several of its products these days cost less than brands available in regular stores. For example, a kilogram of organic arhar dal is priced at Rs 105 at Navdanya. The same quantity of arhar dal, produced by using chemicals, costs as much as Rs 110 in a suburban Delhi supermarket.

Another complaint with organic food stocks has been infestation. Dr Shiva says consumers should worry when there are no weevils, a common pest. "Let weevils and other pests be indicators, canaries of your food. Their presence should comfort you. They are a sign that the food is life-giving. To preserve your stocks, use lots of neem in the containers. Lightly rub castor oil on your pulses to elongate their shelf life."

In 2005 Navdanya tied up with Slow Food, an Italian non-profit committed to defending agricultural biodiversity and gastronomic traditions, to run India's first fully organic restaurant, the Slow Food Organic Cafe, in Hauz Khas. Navdanya offers two memberships, the Annual Navdanya and Slow Food Membership at Rs 1,000, and the Lifetime Navdanya Membership at a fee of Rs 10,000.



LAKSHMAN ANAND

Ishi Khosla set up Whole Foods with her husband Gagan in 2001

How the tide turned for Whole Foods

Shreyasi Singh
New Delhi

It's rare to look forward to a hospital visit, but 32-year-old Anisha Bajaj certainly does. A human resource consultant, Anisha's office is close to Max Hospital at Saket in Delhi. She often drops in, not for a health check-up, but to buy food from the Whole Foods Cafe on the hospital's ground floor.

"I love the café's flattened baked crackers that come in so many interesting flavours – cheese, onion, tomato and parsley. Even their apple cake is very good. Of course, no food can be fat free. But eating at Whole Foods does mitigate the guilt and damage of eating junk food," Anisha says.

Founded by well-known clinical nutritionist Ishi Khosla and her husband Gagan, Whole Foods, one of Delhi's first health food stores, started in 2001 to help people eat well. Now, the outlet in New Friends Colony, its first and only, is a reliable destination for organic products. It stocks organic grocery, cold pressed oils, organic spices, organic breakfast cereals, speciality flour and mixes, and gluten free products.

Whole Foods' recent foray into cafes that serve healthy food and beverages, largely made with

organic ingredients, has been rewarding. It now has successful cafes at the Escorts corporate headquarters, the TV Today Network office in addition to the one at Max Hospital.

"Our salads, breads, baked and roasted snacks and gluten free bakery products have been positively received. Work is in progress to launch three more cafes before the end of this year," says Ishi.

Whole Foods, with a philosophy rooted in the healing power of food, also operates food services and cafeterias at two branches of the G D Goenka School at Dwarka, and in Vasant Kunj.

These successes belie the bumpy beginnings.

"When Whole Foods began in 2001 with healthy food options, and a full section of organic grains and oil, 90 per cent of people who walked into our store had not even heard of the word organic. Housewives thought we were expensive and we failed to educate them. After two years of struggle, we were forced to take our organic produce off the shelves. It just did not make sense to fill shelves with stocks that were not moving," recalls Ishi.

Customers who did come looking for organic foods, mostly expatriates and foreigners, were put off by the products not being certified by a

recognised agency or producer network. The products were bought in good faith.

Today, the Whole Foods store gets over 500 customers a week, and its organic grains, oils and flour mixes are best-selling products. The products are certified by leading bodies in India and abroad like INDOCERT (India based certification body), Sustainable Organic Certification Agency (SOCA) Organic (an internationally accredited certification agency) and IFOAM (the worldwide umbrella organisation for the organic movement), apart from others.

The growing awareness, especially in metropolitan cities, Ishi says, surprises her. This has led her retail business to grow over a 100 per cent in the last one year without any advertising.

"The pesticides in cola controversy, sometime in 2003, first established the connect between food and chemicals in the consumers' mind. The relationship between poison, pesticide and food took seed. Suddenly, almost overnight, people began walking into the store. Orders started coming in. There has been a complete turnaround. Now, people come in and say they hope everything in the store is organic," Ishi says.

Whole Foods is in expansion mode to meet this consumer demand. It has tied up with some big grocery stores in Delhi to market its packaged products. It is re-investing every penny made from the business to strengthen and develop its infrastructure. Profits are expected in the near future, once the capital outlay on infrastructure is done with.

Work is in place to set up a home delivery service for customers within the national capital region. Trade enquiries for franchisees are also welcome. Whole Foods inventory is set to expand too with the addition of a large range of organic products, especially in the condiment section.

It is confident its products can sell briskly in large numbers at multiple outlets. And, they are focussed on getting the supply end prepared for higher volume production.

"That is a worry area, our back end. Farmer cooperatives are erratic and at times cannot cope with the demand. It's not that our farmers don't know how to grow organic. In fact, that is what comes to them naturally. India in terms of acreage under cultivation and yield is the fourth or fifth top organic-growing countries. But our best food is shipped abroad. Only a tiny amount stays home. That needs to change," says Ishi.

As a clinical nutritionist who has advised thousands on weight management, Ishi is perfectly positioned to help consumers effectively 'green' their diets.

"Eat local, eat seasonal, eat diverse. Be conscious of your food miles, the distance a food travels to reach your plate. Don't get hooked on to exotic ingredients. To begin with, switch to organic teas because tea leaves are heavily sprayed with pesticides. Definitely, grow something your kitchen needs like dhaniya (coriander), tulsi (basil), pudina (mint). Each household should produce something. It is easy to convert kitchen waste into manure or compost. Make an effort," advises Ishi.

LAKSHMAN ANAND



Why Stevia is

Civil Society News
New Delhi

SO, you have a sugar problem and need a substitute that you can rely on several times in a day all round the year. Chances are you worry about getting off sugar and becoming dependent on some chemical substitute.

Allow us to introduce you to stevia, the only completely natural alternative to sugar which is currently struggling to compete for consumer attention against big brands that use aspartame, a chemical substitute.

Stevia is a plant whose extract is much sweeter than sugar. It has been popular in Japan for a long time. But it hasn't captured other markets because it has to be grown in sufficient quantities. Also, approval of stevia by the Food and Drug Administration in the US has taken a long while to come.

The FDA gave stevia the status of being 'generally recognised as safe' (GRAS) in January 2009. "We have started prescribing stevia to the patients after it got GRAS approval from the FDA," says Dr Anoop Misra, Director and Head, Department of Diabetes, Fortis Hospitals. Dr Misra also heads the Diabetes Foundation of India, an advocacy group committed to preventive care in diabetes.

Stevia has been getting rave reviews. It is said to have zero calories and zero carbohydrates. Studies indicate it reduces cavities, aids in digestion, reduces blood glucose levels in Type 2 diabetes

More at Dubdengreen

Civil Society News
New Delhi

THE Dubdengreen Organic Store has been steadily going mainstream in the six years since it was set up. It doesn't help for the business to be located at Shahpur Jat in South Delhi amid chic boutiques and jewellery shops.

Organic food isn't any longer just what the swish-set want. It would be far more advantageous if the store was in a regular market where people go to pick up provisions for the home, says Jayashree Eashwar, who founded Dubdengreen together with her husband, Ganesh.

Initially, the customers were almost all expats. But that is changing rapidly. "We expected a 60:40 ratio of expats to Indians but more and more Indians are taking to organic products," says Ganesh. People buy organic products for their babies, or if they are ailing from cancer. Many clients have started buying all their provisions from the Eashwars.

The store now stocks all provisions - 12 varieties of rice, including South Indian ponnirice, lentils, spices. It has hand rolled tea, organic clothing, chemical-free easy to make soups and health products like flax seed oil. It has its own brand - Dubdengreen and Organic Bounty - and other brands like 24 Letter Mantra and Organic India.

Their company, Dubden Healthy Living's objective is to provide all products to a person keen to live an organic lifestyle. Most customers are from Delhi. But the Eashwars do dispatch products to other areas. Hotels like The Taj source products for their niche customers who notify them in advance.

"We help customers understand food," says Ganesh.

You can even place orders online at www.dubden.com. Organic vegetables can be supplied twice a week and organic milk every day. Orders can be taken on phone also within certain specified areas of Delhi and for regular customers, Dubden takes the trouble to call and remind. All their vegetables and provisions are wrapped in paper. Plastics and non biodegradable packing is avoided.

Prices at Dubden are reasonable when compared to branded products. All products are tried out by the Eashwars at home before being placed for sale in the store. "We know that the organic hand-rolled tea in our store tastes good. We sourced several samples and tried each one," says Jayashree. "At breakfast, we discuss lunch and at lunch we discuss dinner. I believe you are what you eat."

"Everything we label organic is certified organic. If it is not certified we label it 'traditionally organic'. If we know that the product is healthy and has no chemicals but is not certified organic we label it 'natural'," explains Ganesh.

Ganesh spent many years in advertising. Jayashree used to be an editor with a publishing house. Twenty-one years ago, when the Eashwars were in high profile jobs, they bought a piece of barren, rocky land outside Bangalore.

The soil was studied. Rain-fed crops and leguminous crops were planted. Trees native to Bangalore were raised. "We now have 10 acres which we bought little by little with our savings," says Jayashree. Many years were spent restoring the earth with Jayashree planting each and every plant and tree. The Eashwars spent weekends on the farm with their children.

WHERE TO BUY

Delhi

Navdanya Organic Shop
D-26 Hauz Khas, Near Hauz Khas market
New Delhi-110016,
Ph: 26532124

Stall no 18 Dilli Haat
Opp INA market,
New Delhi
Phone: 011-6534306

Dubdengreen
4A, Shahpur Jat, New Delhi
Phone: 011 30905310
Mob: 9810131343

Whole Foods
47 Community Centre,
New Friends Colony
New Delhi
Phone: 011- 26820148

Tribes India
9 Mahadev Road, New

Delhi-10001
Phone: 011 23731214,
23316192

Inhere
206 Gupta Arcade
Plot no 5
Mayur Vihar
Phase 1
New Delhi-110091
Phone: 01122713469

Kolkata Tribes India
Swabhumi
The Heritage Plaza
Eastern Metropolitan
Bypass
89C, Moulana Abdul
Kalam Azad Sarani
Kolkata-708054
Phone: 033-23207292

IMG Organic Farms
20B Dhan Devi Khana
Road
Kolkata-700054
Phone: 23648458
SEVA

the natural choice

and has antiseptic and antimicrobial properties.

Stevia is now available in India under the brand names of Gwiser, Steviocal and Dr Shugar.

"We currently sell eight to ten thousand packets of Gwiser every month across medicine stores in Delhi. And, we are aiming at 200,000 to

300,000 packets a month," says Devesh Bhardwaj, co-owner of Gwiser Biotech India. "It's an uphill task because the sugar lobby is so strong and the artificial sweetener brands have deep pockets. But, our product enjoys immense customer loyalty. There are no side-effects. Each of our cus-

LAKSHMAN ANAND



Devesh Bhardwaj's Gwiser has a growing number of users

tomers has stayed with us and the brand is growing through word-of-mouth referrals."

Gwiser uses the best stevia extract which it imports from Japan. A box of 100 sachets, each containing 400 milligrams of powdered stevia extract, costs Rs 149.

Gwiser is working with the medical community to spread the word on stevia and its many benefits. The response has been slow, but encouraging.

Nutritionists at the Diabetes Foundation India, however, root for stevia's many benefits. Research, they say, also shows stevia is extremely heat stable in a variety of everyday cooking and baking situations, a limitation with aspartame.

Much of the concern regarding substitutes for sugar centres on the use of chemicals like aspartame and the lack of consumer awareness.

Senior medical practitioners say guidelines for advertisement and product disclaimers need to be urgently issued. "The local market is flooded with sweets/products containing artificial sweeteners claiming to be safe for diabetics and weight conscious individuals, but no nutritional labelling is done to make consumers aware of the content of products," explains Dr Misra.

Aspartame is perfectly safe if used within the acceptable daily intake (ADI) of 50 milligrams per kg of body weight. But with it being used across a range of food products and cold drinks it is anybody's guess how much an individual actually consumes.

In very high doses aspartame has been associated with systemic lupus, multiple sclerosis, vision problems, headache, fatigue, Alzheimer's disease and neurotoxin effects such as brain damage.

"Adequate information on artificial sweeteners is available only to a limited number of people," says Dr Misra.

3C Milan Apartments
52/3 Vidyayatan Sarani
Kolkata-700035
Phone: 033-25785590,
25776365

Chennai

Eco-nut
First Floor, E-34
Second Avenue
Besant Nagar
Chennai
Phone: 044- 24919592

Enfield Agrobases
No 3 First Cross Road
Kasturba Nagar, Adyar
Chennai-600020
Phone: 044-24420605,
24424766

Naturally Auroville
30 Khader Nawaz Khan
Road
Opp Taj Coromandel
Chennai-600008
Phone: 044-28330699

Sunday Shandy
New 177 Luz Church
Road

Chennai-600004
Phone: 044-24991203

Mumbai

Navdanya
The Organic Food Shop
Shop no 10
Mayfair Housing
Society
Oberoi Raviraj Complex
Off Andheri Link Road
Andheri
West Mumbai-400053
Phone: 9324288418,
9920418027

Spinach
Ground Floor
Madhwa Bldg
Bandra Kurla Complex
Bandra (E)
Mumbai-400051
Phone: 022-30621120

Aarogyam
Farmers Initiative for
Organic Foods
301, Pallavi CHS
Tata Colony
Navghar Road
Mulund (E)
Mumbai-400081

Phone: 022-20590513,
9969022192

Conscious Food

F-39, Dhanraj Mahal
Chhatrapatti Shivaji
Maharaj Road
Apollo Bunder
Mumbai-400039
Phone: 022-39435965,
39453444

Bangalore

Green Fundas
92, 5th Main, 5th Cross
Kodihalli Extension
HAL 2nd Stage
Bangalore-560008
Phone: Amin
9886290013

Era Organic
No 348 Dollars Colony
RMV Club Double Road
RMV Second Stage
Bangalore-560094
Phone: Jayaram 080-
41606004

Sahaja Samrudha
Nandana, No 7

2nd Cross, 7th Main
Sulthanpalya
Bangalore-560032
Phone: 080-23650744

24 Letter Mantra

Shop no 3
Amenity Block
Adarsh Palm
Meadows
Ramagundana Halli
Whitefield
Bangalore
Phone: 080 25395206

Namdhari Fresh

Bidadi
Bangalore-562109
Contact: Uday Singh
Mob: 9845471271,
9845471272

Hyderabad

Deccan Development Society
101 Kishan Residency
St. No. 5, Opp Pantaloon
Showroom, Begumpet
Hyderabad
Phone: 040-27764577,
27764744

24 Letter Mantra

Road no 12
Near Ministers
Quarters
Banjara Hills
Hyderabad
Phone: 040-
23300202/303/404

Wassan

Centre for Sustainable
Agriculture
12-13-445, St. No. 1,
Tarnaka
Secunderabad
Phone: 040-64544099

Timbaktu Organic
Village Chennethapalli
District Ananthapur-
515101
Phone: 08559-240551,
240339

Pune

NIN Health Shop
National Institute of
Naturopathy
Bapu Bhawan
Tadivala Road
Pune- 411001
Phone: 020-26059682

Green Grocers

Stall No 164/165
28/2 Koregaon Park
Pune-411001
Phone: 020-26119654

Nature's Bounty

Liberty 2, Shop No 6
North Main Road
Koregaon Park
Pune-411001
Phone: 020-26114267

Samridh Krishi Pariwar

21 Ground Floor
Sagar Plaza
Nasik Phata
Kasarwadi
Pune-411034
Contact: Eknath Karale
Mob: 9850501277

24 Letter Mantra

Shop No 1&2
Hill View Apartments
Opp Aditi Mini Mall
Baner Road
Pune-020-64002456

Find the complete list in Anjali
Pathak's book 'Annam Brahma:
Organic Food in India'

GREEN CURES

Hope for the obese

Dr G G GANGADHARAN

IN Ayurveda 'Asta Nindita Purusha' means eight despised or undesirable physiques. Obesity is one among them. Increase of adipose tissues gives rise to obesity. Here vata, pitta and kapha all are imbalanced. Obesity is the result of metabolic disturbances.

In obesity, body weight is beyond the limitation of skeletal and physical requirements. There is excessive accumulation of body fat.

The commonest causes for obesity are dietary and drinking habits, smoking, endocrine, psychogenic and environmental factors, constitutional, drugs, sedentary lifestyle and heredity.

Of these dietary habits like overeating play a very important role. Foods having sweet taste and properties like heavy, cold, over nutritious and unctuous exacerbate obesity. Oily food, bakery items and junk food play a major role in obesity. Obesity is most common at middle age but it can occur at any stage of life. Women are more prone to obesity than men.

Increased size of waist, thighs, and buttocks, sagging breasts (in women), general debility, excessive sweating, foul smell, increased thirst and hunger, laziness and increased sleep are the features of obesity.

Obese people are prone to diseases like high blood pressure, diabetes, arthritis, gout, liver and gall bladder disorders and coronary thrombosis.

To avoid these complications one should follow three simple methods.

- Avoid the causes of weight gain



- Control eating habits
- Regular exercise

Ayurveda emphasizes a holistic solution that allows people to loose excess weight, while improving their overall health.

DIET FOR THE OBESE

- Increase usage of fresh and seasonal fruits.
- Take fresh fibrous greens and vegetables.
- Cook with spices like cayenne (red chilli pepper), turmeric, black pepper, ginger, cinnamon and rock salt.
- Consume food which has pungent, bitter, astringent, taste.
- Use vegetable oil in place of butter.
- Drink warm water frequently.
- Mix one teaspoon of fresh honey with lemon

juice in a glass of lukewarm water and take several times a day at regular intervals.

- Powders of Guduci (*Tinospora cordifolia*), Triphala or Musta (*Cyperus rotundus*) one teaspoon each should be taken mixed with honey.
- Takrarishta is advisable (available in stores) – 30 ml after food.
- Triphala churna at bedtime- 1 tablespoon with honey.
- Take well churned fat removed buttermilk.
- Avoid sweet and salty items.
- Avoid meat products.
- Avoid drinking water immediately after meals.
- Avoid refined sugars and carbonated drinks.
- Avoid milk products like cheese, butter, curd etc.
- Avoid bakery and other processed foods.
- Avoid eating late at night.
- Avoid sleeping right after eating and at day time.

Taking care of diet alone will not serve the purpose. An obese person should change his lifestyle too. Lifestyle modifications have to include:

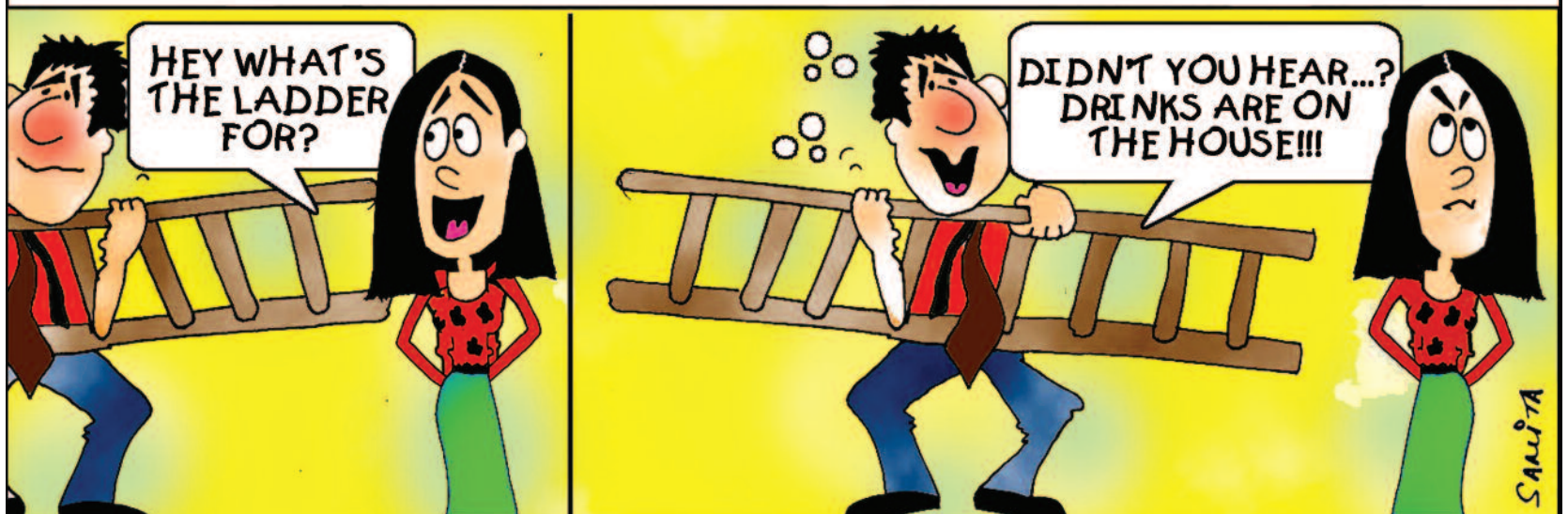
- Regular exercise is a must to maintain healthy body.
- Brisk walking for 20 minutes is the best exercise to start with, maybe followed by running and cycling.
- Swimming is helpful to a great extent.
- Yoga.
- Fasting once a week is considered highly beneficial in the treatment of obesity.
- Stress needs to be reduced, as stress is often the cause of bad eating habits.
- Avoid day sleep.

By following the above mentioned dietary and lifestyle changes one can reduce weight. Panchakarma will help in reducing weight as well as improve your health to a greater level. For this, consult a good physician in your area.

E-mail: vaidya.ganga@frrlht.org
Dr GG is a senior physician with FRLHT, Bangalore.

Samita's World

by Samita Rathor





Potential.

The thought excites us. We look for it everywhere. We see it in everyone around us.

We see dreams becoming a reality. We see success stories waiting to be told. We see the limitless *human* potential, waiting to be unleashed.

Our mission is to help people realize their potential through the innovative software we build for PCs, devices and the internet. We help over a billion people on this planet connect, share and innovate every day. And we have just begun....

Our endeavor is to help provide every Indian with an opportunity to realize their *unlimited potential* through our innovative software.

To know about our efforts to help unleash India's *unlimited potential*, visit www.microsoft.com/india/unlimitedpotential/



ECO-TRAVELLER

Capt. Dhond's big dream comes true

GAUTAM SINGH

YOU know you're setting out for something different when you arrive in Panjim and ask for directions to a certain forest resort in the hills and not the nearest bar on the beach. So, leaving behind the assured promise of conventional wisdom, you begin your journey further and further away from the sea, on narrow roads past small towns, towards distant hills.

Half an hour later by taxi, the road takes off into the hills and it is suddenly quiet, cool and very green. The road is good, the thick forest on either side forms a tunnel through which I occasionally glimpse parts of the Sahyadri range, one of 34 forest ecosystems designated a global biodiversity hotspot. It is in its monsoon shade of dark green.

In a time that seems shorter than it was, I'm at the Swapnagandha and Wildernest resorts just off the main Goa-Belgaum highway. Surrounded by thick forest all the while up to this point, I get an idea of where I am only when I open the door to my cottage. Across the room and through the window that takes up most of the wall I see a densely-forested valley and on the opposite side, a waterfall. This is the Swapnagandha valley. It's drizzling and clouds float across, and I know I could sit here for hours, like watching the waves from a beach.

Swapnagandha consists of eight valley-facing cottages. The rooms are spacious and have a verandah with a wooden floor. There is, of course, no AC, TV, fridge or the ubiquitous plastic bottle of packaged water. Instead there is fresh water in a copper jug. Both Swapnagandha and Wildernest, source their water from a perennial well clean enough not to require treatment. The water is delicious and I had lots of it.

The bathrooms, with terracotta tiles like the rooms, are neat, clean and large. They have running hot water, showers and a WC. A large window with a mesh faces the valley so that you never get cut off from the view. Again, no plas-

tic here. The buckets are copper and for a mug there is the traditional Indian copper lota. The fittings are anodized and blend well with the general earthy and woody look that has been given to the rooms.

The rooms are comfortable and CFL-lit. There seems to have been an effort to keep them simple, bare and lacking in anything superfluous. And it works well because it encourages you to step outside and experience what this resort has to offer.

Lunch is served in a large wooden-roofed hall open from all sides to views of the Anjunem dam and the valley. The food is served on brass thalis from earthen pots. It is a mix of vegetable and meat dishes drawn from traditional Goan and Maharashtrian recipes. Vegetables and groceries, I am told, are sourced from Belgaum while the chicken, mutton and fish is from Goa.

"It tastes fresh and unusual," says Mahesh Sardesai, a stock-broker from Panjim here for the weekend with his family. His wife, Shilpa, an architect, compliments the construction for "maintaining the natural look by using good materials."

Wildernest, which was built in 2004, earlier than Swapnagandha, is about a kilometre away, but set deeper in the jungle. A jeep transports one over a narrow, rough path. There are eighteen cottages here, with views of the valley (opt for this, if you have a choice) and the forest, built in a way that they seem a part of the jungle that surrounds them.

Captain Nitin Dhond, owner of this resort, tells me that no trees were cut while building the cottages and it looks that way too when I visit one of the toilets adjoining the dining hall which is open-roofed and built around a tree (see picture). The cottages lie off the paths connecting various facilities, and one leads me to the infinity pool. The view is, again, breathtaking.

Sushma Gaokar, one of the guides, also shows me the discreetly located open-air shower,



"My first objective was to stop this land from getting destroyed. Later I figured that we should make this self-sustaining by having a resort so that people can get close to nature," says Capt. Dhond.

Photographs by GAUTAM SINGH



The infinity pool. The view is breathtaking



Lush hills and cascading waterfalls

which I had missed, and I notice then the fittings set in a wooden sculpture. A short walk through another jungle covered pathway takes me to the open-air massage center. The table is a slab of wood and behind a wooden screen is the bathtub, at the head of which sits sagely an elephant-headed wood sculpture bearing the faucets. Very interesting.

"No massage in the monsoons," Sushma informs me and then motions for silence as we hear a bird call. "That's an Iora," she says. And its time for

a trek to a hill that looms over the resort. Namdeo Vithalgaonkar, our wildlife guide, leads us through the forest up a track, stopping periodically to show us campfire sites, and guava-looking fruit that are toxic. "That's the Karvi," he points to a dried-up clump of shrubs. "It bears blue flowers once in seven years," he adds and I remember seeing hill-sides covered with them on a trek near Lonavla last year. After an easy climb for around 20 minutes, we stop to admire a panoramic view of the valley from atop a cloud-covered hill.

We return at dusk for tea in the dining hall whose glass windows overlook the valley. The souvenir shop is closed for the season, but it does sell forest honey, which I get a taste of at the bar in a lemon-honey drink that is refreshing. The bar, appropriately named Cloud 9, is well stocked with reasonably priced liquor. A 60ml shot of Black Label costs Rs 325 and an Old Monk just Rs 50. The thought of a whisky and charming valley view tempt me enough to wish I hadn't quit.

And to think that this might have been some ugly, dusty open-cast mine. Wilderndest and Swapnagandha are part of a 450-acre property, owned by Captain Dhond (he's in the Merchant Navy) that extends into Karnataka, Goa and Maharashtra in the Sahyadris.

"It all began some three decades ago when our ancestral lands in Belgaum were acquired for mining," Capt. Dhond tells me, "and I bought

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The rooms look out on the valley

Continued from previous page

some 15 acres here in the 90's out of sentimentality and the need to own a piece of land and build my own house." Later he discovered that the lands, agricultural and privately owned, were being bought over for mining.

"I spoke to the owners and showed them what mining had done to our lands. Slowly I convinced them not to sell to the miners and bought over the lands and reforested those which had been logged. Now it is completely forested and deemed forest land."

All this explains the attention to detail in each aspect of Wildernest and Swapnagandha. "The cottages in Swapnagandha have been named after the villages displaced by the Anjunem dam," he informs me. Apparently, during summer, when the water recedes in the dam, the area where the villages once stood lies exposed. "We take the guests to visit that area and see how it once was," he says.

The cottages in Wildernest have been named after medicinal plants. "We've preserved a gene pool of the Amruta tree which is used in the production of drugs for treating cancer," I am told. On the property a Nature Conservation Facility has also been established (see website) which promotes research in biodiversity studies and

medicinal plants, amongst other pursuits.

Some of the activities are bird-watching trips (the best time would be November to March), trips to the waterfall (till March), visits to an organic farm located at Chorla Village and coracle boating. Some of the vegetable supplies come from organic farms, like the one at Chorla village, and from Capt. Dhond's farm at Thirthkunde in Belgaum.

"My first objective was to stop this land from getting destroyed. Later I figured that we should try and make this self-sustaining by making a resort so that people can get close to nature," he says.

Plastic is a strict no-no, and whatever the guests bring along is collected after being discarded and sent to Belgaum to be recycled. The used-water is sent to soak pits and recycled for watering plants while the sewage goes into a septic tank. But the power, and there is 24-hours of continuous supply, comes from diesel generators. "We're trying to build a bio-gas plant to supply the generators. We haven't opted for solar power as there's hardly any sun for six months of the year, but the Nature Conservation Facility will be totally served by wind energy," Dhond informs me.

The lamps along the paths are made from



Open-roofed toilets built around a tree



Taking a swim in the infinity pool



Bathroom fittings set in a wooden sculpture

bamboo and their pools of light illuminate the densely covered paths. "Some of the paths are unlit, the luminescent fungi on the tree bark helps us there."

Even the wood used in construction has an interesting ancestry. "A lot of Australian acacia (*Acacia auriculiformis*) has been planted by the forest departments, and this being an exotic species, has caused havoc in natural habitats. We used this wood and acquired all that we needed for our construction from the government or from private owners as we didn't want any native species to be harmed," he explains.

"All our employees come from the surrounding areas. They've been trained by naturalists to identify birds, animal tracks and even handle snakes. And we have some venomous ones too," he states. Three species of viper (Russell's, Saw-scaled and the Bamboo-pit) and the spectacled cobra are common, Namdeo had told me while on our trek. And of course, there are the larger beasts too. It is not unusual to bump into the Gaur or Indian Bison – I did see the hoof-marks while trekking.

"Panthers are sighted and we share the pool close to the waterfall in the dry months with a tiger," says Dhond.

"The tariffs are a bit on the high side,"

Sardesai says, "but it is worth it. The experience is energising." At Rs 3,800 for a night-stay in a room with a forest view and Rs 4,800 for the valley-view rooms, and that too in the domestic season, I would tend to agree. The rates jump to Rs 6,000 and Rs 7,000 in the international tourist season, which is from November to March.

All meals and taxes are included and so are the activities at the resort. The pick-up and drop from Panjim/Mapusa /Thivim/Dabolim are complimentary for a two-night stay onwards. Next time you visit Goa, head for the hills, and believe me, you won't be missing the wood for the trees.

FACT FILE

www.wildernest-goa.com
www.swapnagandha.com

Included in Alastair Sawday's "100 Green Places to Stay"

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Open all the year round

Amid a choir of crickets

Rina Mukherji
Chilapata (West Bengal)

I visited the Chilapata Jungle Camp during the monsoon. It rained heavily the very first evening and the night was cool. I opened the windows to let in the fragrant air. The choral orchestra of a hundred crickets burst into my room. Their ear-splitting chirping forced me to look out. The stunning spectacle of a vast landscape bathed in moonlight greeted me. The lunar luminescence was no match for the myriad halogen lamps we see in the city.

Situated on the banks of the Torsa, Chilapata, in the eastern Dooars, is lesser known than the Jaldapara reserve forest. It is considered a forest corridor between the Jaldapara and Buxa Tiger Reserves. Chilapata and Jaldapara are separated by the Torsa and hence clubbed together as one contiguous forest for census figures.

Chilapata Jungle Camp is another world. There is no electricity here, so bulbs, powered by solar energy, light up only at twilight. There are no fans since they are too big a load for the solar panels.

The food served is simple and unusual. It comprises wild tubers, colocasia (arvi), turai, kundru, flowers and greens. Fish is netted from three serpentine rivers, Banya, Burovaasla and Kalajin, which flow within and around the jungle. Even the rice served is the prized scented kalaninni, which is unheard of elsewhere.

Daylight breaks early. By 7:30 am, it is blazing hot and terribly humid. Locals tell me global warming and climate change have taken their toll on the pleasantly mild climate of the Dooars. But the peace and quiet of Chilapata remains.

It is rare to hear any sound through the day as you watch Rawa and Oraon peasants working in paddy fields skirting the borders of the camp. The silence is broken occasionally by the noise of a lone motorcycle racing along an uneven path separating the forest and the villages. At twilight you can hear farm labourers sing a little folk song on their way back home.

Chilapata Jungle Camp follows the precepts of ecotourism in letter and spirit.



Chilapata Camp cottage

It came into being on the advice of the present District Forest Officer (DFO) of Jalpaiguri, Kalyan Das. He inspired Ganesh Kumar Sah to set up the cottages.

Since the camp works in close association with the forest department and forest protection committees set up in nine villages in and around the forest, no tourists are allowed during the breeding season which is from mid-June to mid-September. Members of families represented in the committee work as eco-guides or run safaris in the forest for tourists and earn a living. The Jungle Camp has four concrete cottages on stilts and two bamboo cottages.

Sah sold off all his assets to set up Sibji Green

India. The foundation stone was laid by Jogesh Chandra Barman, West Bengal's minister of SC/ST in 2006, and the resort started operating a year later. Six months later, Sah came into contact with Raj Basu, one of the co-founders of Help Tourism, and became their local partner.

In the best traditions of Help Tourism, Chilapata trained local boys as eco-guides with the help of the Forest Department. There are others who operate safari trips by renting out their vehicles for Rs 600 per trip. Two eco-guides accompany the tourist on each trip and earn Rs 150 each. The boys are all members of forest protection committees, knowledgeable and eco-sensitive. Trained by German expert Klaus Schaette, they know what is

to be burnt and what recycled. They understand local flora and fauna and can rattle off biological names to tourists.

Involving locals has vastly improved forest protection. Say Ritesh Majhi and Tinku Karjee, who are eco-guides, "We can ensure that no one is flouting rules and smoking cigarettes or drinking alcohol." Neither is loud music permitted. "Many people come here for merry-making. Drinking beer and alcohol is followed by throwing of cans or bottles into the rivers that flow through the forest. When elephants, rhinos or Gaur (Indian bison) step in to



An elephant family



Inside a bamboo cottage at the Jungle Camp



A bamboo cottage

drink water, the glass and cans can cut through their skin and cause gangrene, killing the animals for want of immediate attention," says Pele Rawa, a tribal youth who conducts safaris in his jeep.

Smokers light their cigarettes and throw away burning match-sticks or cigarette stubs into the thick foliage. This can cause forest fires that might last for days, killing many animals.

Ever since forest protection committees have been put in charge, there have been no cases of

poaching. "The last case of poaching was reported in 1996," says Debendranath Roy, Range Officer.

The Rawa tribals, who form the majority forest community here, have a mere five to six bighas of forest-leased land to grow crops on. The crops their land yields have to be shared with the animals who raid their fields for food.

That leaves them with hardly anything to live on. Now under a social forestry scheme the Rawas and others tribal communities like the

Munda and Oraon are being given saplings of mango, jackfruit and lemon to grow and harvest. The Rawas, who have a tradition of weaving their own cloth, are being helped with yarn and encouraged to sell mekhlans and shawls through outlets set up by the forest department.

Thanks to better maintenance, Chilapata has become the naturalist's paradise. In 2007, Dr Kaushik Deuti discovered the Chilapata Rain Pool frog on the Mendabari beat of the Chilapata forest. Two males and three females of the species are being kept in a specially designed water body in the jungle camp for breeding under the aegis of the Doors Amphibia Network.

On the flip side, the Chilapata forest corridor is fighting a tough battle against an ill-conceived teak monoculture plantation. Teak does not allow any undergrowth and brings down groundwater levels. As a result, there is no vegetation which animals could feed on. Naturally elephant raids have

In the best traditions of Help Tourism, Chilapata trains local boys as eco-guides with the help of the Forest Department. There are others who operate safari trips by renting out their vehicles for Rs 600 per trip.

become common. Elephants attack paddy fields, uproot banana plants and fruit trees for food.

"The Gaur target the mustard crop, while ripe bananas and paddy are an invitation to the elephant herds," explains Sachin Rawa, an elderly resident of Banyar Basti, on the outskirts of Chilapata, who belongs to the indigenous Rawa tribal community.

"It was a miscalculation on our part. We did not realise what would happen," admits a forest official. The forest department is now planting the chipti, purundi, khassiya and dadda species of grasses which form the staple diet of elephants. Fast-growing trees like bamboo, khair, harituki, amlaki (amla) and behera that monkeys love to gorge on, are also being planted. This has reduced raids on Rawa, Oraon and Munda villages, although elephants continue to descend on paddy fields when the harvest season approaches.

Overall, though, the trend is positive. The numbers of leopards and rhinoceros have increased. Other animals like the deer and hog are over 600 now. The elephant population is between 25 to 150. There are over 250 heads of Gaur. Visit Chilapata to experience the alternative lifestyle.

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Karnataka's wild and wondrous jungles

Susheela Nair
Bangalore

TAKE a break from the monotony and cacophony of city life and head for the wilds. Jungle Lodges and Resorts Ltd (JLR), an enterprise of the state government of Karnataka, offers eco-travellers from around the world a chance to discover the hidden beauties of nature. JLR has a variety of holiday resorts with adventurous activities for tourists. All its resorts are comfortable and equipped with facilities.

You can set out in an open jeep, or ride on an elephant or be in a coracle. Also on offer are scuba diving, river-rafting, angling and trekking. "Those who come to JLR as visitors often leave as nature conservationists. We believe in converting our guests into ambassadors of conservation," says ND Tiwari, managing director, JLR.

The genesis of Karnataka's eco-tourism venture can be traced to 1978 when R Gundu Rao, then the Minister for Tourism, stayed at the Tiger Tops Jungle Lodge in the Chitvan National Park in Nepal. He was so impressed by Chitvan's professionalism that he decided to begin a similar project in Karnataka.

JLR was set up in 1980 as a joint venture between Tiger Tops in Nepal and the state of Karnataka with the objective of developing wildlife tourism while respecting the environment. JLR is now owned and managed exclusively by the Karnataka Government after Tiger Tops pulled out in 1987.

The company's first enterprise was the Kabini River Lodge in Karapur village on the outskirts of the Rajiv Gandhi National Park. Kabini is a historical site. Years ago, the Maharaja of Mysore decided to have an exclusive hunting lodge deep within the dense jungles of the Kakkanakote range of the Nagerhole National Park. To entertain British viceroys, the royals launched Khedda, a game in which wild elephants were trapped and tamed. Herding elephants along the river Kabini into the Khedda enclosure was a fascinating sight for the royals and the British. But Khedda is now a faint memory. The cruel game was stopped in the 1960s.

Today, Kabini River Lodge is the favourite watering hole of jet-setters, royals, heads of state, film stars like Goldie Hawn, writers like Vikram Seth, corporate bigwigs like Vijay Mallya, photographers, conservationists and Indian cricketers like Rahul Dravid, Anil Kumble, Sunil Joshi and Javagal Srinath. They come to break routine at this wildlife resort.

JLR is now the leading chain of resorts in wildlife,

eco-tourism and adventure tourism in India. It has 13 high class resorts, including the Bannerghatta Nature Camp, Kabini River Lodge and the Cauvery Fishing & Nature Camps at Bhimeshwari, Galibore and Doddamakkali, where avid anglers wait in anticipation to catch a glimpse of the mahseer, the prized fish of the Cauvery river.

At BR Hills Wildlife Adventure Resort, the focus is on wildlife, ethnic and tribal tourism, birding, bonfire, cave exploration, coracle rides, canyoning, canoe trips to uninhabited islands, camping on the shores of a reservoir, trekking, wildlife safaris, white-water rafting and visits to tribal hamlets are part of the wilderness experience at Kali Wilderness.

The camp at Dandeli, Bandipur Safari Lodge, organises wildlife safaris, bird-watching and trekking trails. Devbagh Beach Resort in Karwar is a dream destination for water sports buffs. JLR's latest addition is the River Tern Lodge situated amidst the Western Ghats, a perfect blend of scenic beauty and wildlife. At the Dubare Elephant Camp in Kodagu, JLR's novel idea is to provide tourists "an intimate experience with elephants".

JLR's philosophy is 'quality and not quantity'. The company believes in low impact tourism. It takes guests in small numbers to the forests.



Elephants congregate on the banks of the river



White water rafting on the rapids in Sitanadhi

Photographs by SUSHEELA NAIR



safaris, they are accompanied by trained naturalists who educate them on wildlife, trees, medicinal plants, biodiversity, and the ethnicity of the local populace," explains ND Tiwari. "The guide makes you notice little things like the pug marks of an animal, the scat of a tiger, may be a bear, or even help you decipher spider webs on a bamboo thicket. All these factors foster a better understanding of nature and a wish to conserve the environment. As we take guests deep into the forests in eight to ten jeeps, throughout the year, it amounts to patrolling the forests and informing the forest department of poachers." On one occasion, guests shot a trapped tiger on video camera and this film helped the forest department bust a gang of 30 to 40 poachers.

Behind JLR's success is a 94-year-old Indian-born European, Colonel John Wakefield. Associated with Kabini for more than two decades, Wakefield is 'a living encyclopaedia on wildlife and conservation'. Popularly called 'Papa', he is the driving force behind the Kabini camp. Wakefield conceptualised and implemented the resort in Kabini. He also selected the sites for tourist accommodation and facilities way back in the early eighties.

Thanks to his dedication and foresight, the Jungle Lodges and Resorts organisation has bloomed over the years. He has been the Resident Director at Kabini since 1986. For the last two and a half decades, this hunter turned conservationist has put all his energies into promoting environment friendly tourism or what he describes as 'controlled tourism' with sensitivity for fragile ecosystems and a healthy respect for regulations. In 2002, he was conferred Karnataka's highest honour, Rajayotsava Award, for his contribution to the promotion of ecotourism in Karnataka.

JLR offers ecotourism consultancy services to state governments like Jammu and Kashmir, Maharashtra, Orissa and private property owners. Another feather in its cap is the establishment of Nature Interpretation and Conservation Education Centres at Kabini, Bhadra, Dubare and Dandeli.

At the Bannerghatta Nature Interpretation and Education Centre, training programmes are organised for naturalists and forest department officials. Children are taken on a jungle safari to the Nagerhole National Park in the off season. The company has won several accolades and awards, including the National Eco-Tourism Award in 1997-98. Tatler's Travel Guide rated its resort in Kabini as one of the top five wildlife resorts in the world.

The company plans to add additional resorts to its existing chain of properties.

Forthcoming projects include opening of resorts at the Jog Falls and at Hampi, which is close to the Daroji Wildlife Sanctuary. In Pilikula Nisargadha near Mangalore, the focus will be on village life.

Another interesting programme JLR has been planning is a night safari in Bannerghatta in 2011 on the lines of Singapore's famous night safari. For nature enthusiasts and hardcore trekkers, jungle treks will be organised along the untrodden paths of the Western Ghats. The highlight of the trek will be the experience of camping in tents in the wilderness.

posh facilities, but a promise of respite and rejuvenation for stressed out city dwellers. In keeping with changing times, JLR has adopted innovative marketing techniques to promote its resorts. It has sought the services of white-water rafting experts and co-opted specialists for outdoor activities.

The company is sensitive to the livelihood needs of villagers. Over 90 per cent of employees at JLR's resorts are locals. They help immensely in looking after the land and in preventing poaching. In some resorts, forest dwellers, including the Jenu and Kadu Kuruba tribes, have been trained and employed.

At one time locals would use dynamite to catch the majestic mahseer fish at the Cauvery Fishing Camp. Now the camp employs rehabilitated poachers as gillies (guides). They show foreign tourists how to catch these 100-plus pound fish and release them back into the river. Gillies help anglers with their knowledge of the waters and are experienced fishermen themselves. Thanks to JLR's 'catch-and-release' policy, the size of the mahseer has grown over the years from 32 pounds to 106 pounds. Now other states are emulating JLR's strategy of local involvement.

JLR's sensitivity to the environment rubs off on its guests. "When urban tourists are taken on



Kabini River Lodge

Large groups are discouraged. None of the resorts cater to more than 50 guests. There is no room service though coffee and tea are available. There is no TV, no air-conditioning, no a la carte menu.

Notices are put up in the bathrooms to educate guests on water conservation. Guests are advised not to play any music, wear bright coloured clothes or smoke, as this disturbs wildlife and man's communion with nature. JLR's USP is not

RAKESH AGRAWAL



Trekkers set out across the valley

The Himalayan walk

Rakesh Agrawal
Dehradun

RICHA Joshi, 36, a software developer, couldn't believe her eyes. A crimson sky greeted her as she stepped out of the old stone and mud house she had slept in. The rays of the rising sun were spreading their glory across the snow-capped peaks of the Himalayas. A verdant carpet of grass thick with flowers rolled out before her.

Joshi was at Salana, a tiny village in the midst of a pristine forest in Chamoli district, Uttarakhand. She had left behind the hustle and bustle of Pune, the grind of work and the madding crowds for a few days of bliss in the lap of nature.

This morning Joshi started on a 14 km trek with other trekkers, all from cantankerous cities. There were men and women, young and old and they were heading for Kalpeshwar Mahadev, one of five famous Shiva shrines or Panchkedars in Uttarakhand. Joshi walked through villages like Salana. She saw cascading waterfalls and listened to the lilt of birds. The trek took her through dense oak and rhododendron forests.



"At 12,000 feet, we were on the roof of the world."

Salana is the starting point of this trek. Joshi was thankful to her friends in Delhi for advising her to take a break and experience this trek which is organised by Jandesh, an NGO based in Salana.

"I feel great being here. My batteries are now fully recharged. Total *paisa vasool* (value for money)," exclaimed Joshi.

The few trekkers who braved the challenging heights of the Panchkedar trek described the walk as a rare experience. "At 12,000 feet, we were really on the roof of the world, dwarfed by towering Himalayan peaks at Bansinarayan, a small plateau beyond the tree line which has an imposing Vishnu temple built in Katuri style. We were going to Madyamaheshwar, the second of the five kedars," recalls Rajendra Rawat, who did this trek last year.

If Joshi, Rawat and hundreds of city folk have got value for money, so have many villagers who now earn a regular and dignified livelihood. Kamala Devi, a village woman, led this group of nature lovers from Pune. "I'm not just a trained guide, but also a margdarshak (vanguard) for these city people who come here to unwind," said Devi.

Jandesh started the Jandesh Trekking Club in 2001 to, "protect the region's ecology and environment and promote its heritage and culture by introducing nature lovers and trekkers to the heavenly beauty of this region and enabling village youth to earn a living," said Laxman Singh Negi, secretary, Jandesh.

Right from its inception, the club organised treks, mostly in summer to several picturesque



spots, including the world famous Valley of Flowers. City people, mostly from Delhi, but also from Pune and Mumbai, arrived in droves. They have gone back cheerful and invigorated without burning a hole in their pockets.

The trekking season is restricted to six months a year in summer and autumn. Villagers who want to work as guides and porters must become members of the club. Beginning with just three members, the club now has 37. All members are trained in how to conserve the nature and culture of the region, the NGO's values and principles, rules and duties of porters and how to behave with trekkers. The club ensures that non-biodegradable waste like polythene bags are not littered. The club believes trekkers should carry just memories and leave behind only footprints.

"We're also trained on how to get permission to visit the Nanda Devi National Park, take eco-fees from them and insure the trekkers," says Bansi Narayan Bisht, a porter who is from Kalgoth village. The officials of Nanda Devi National Park assist them.

The club members have a self-help group in Devgram village in Urgam Valley. They deposit Rs 20 every month and help members if they are in dire circumstances. The SHG has Rs 30,000 in its kitty. During the off-season, the club tries to find alternative jobs for its members. In 2009, club members got jobs under NREGA.

The Jandesh Trekking Club offers three types of treks classified as, easy, moderate and difficult.

City folk have got value for money and villagers now earn a regular and dignified livelihood. Kamala Devi, a village woman, led nature lovers from Pune. "I'm not just a trained guide, but also a margdarshak (vanguard) for these city people," she says.

The duration of the trek varies from three days to 14 days. Easy, short duration treks are for those who just want to unwind and don't have much time or energy for a longer stroll. For Rs 500 a day, the easy trekker will be taken to Kalpeshwar, Banshinarayan or Flulanarayan, which are at a distance of 12 to 15 km.

A longer trek of five to seven days costs Rs 1,000 a day. Trekkers get to sample local foods like mandua (ragi) bread, chaulai bhaat, gahat or bhat daal. All trekkers are provided guides and porters. Those opting for medium and high altitude treks

must carry their own tents, since they will have to stay outside villages, in high altitude meadows or in the valley. Those who choose easy, short duration treks can stay in a rest house.

The club also operates a tougher, longer duration trek of seven to 14 days, which takes the tourist to high Himalayan regions. This trek costs Rs. 2,000 a day. Trekkers are also insured.

The club has arranged comfortable staying facilities at Van Panchayat rest houses in Salana and at Pathik Lodge and Devdarshni Lodge in Devgram village. These villages are on the way to Kalpeshwar Mahadev, on the easy, 14 km long trek.

Ordinary tourists who just want to visit Kalpeshwar Mahadev can also use the lodges and rest houses. The cost is only Rs 100 per

person. Breakfast costs Rs 20, a meal Rs 30 and tea is for Rs 6. Independent trekkers can hire the club's guides and porters for Rs 200 or Rs 300. For higher Himalayan regions, porters charge Rs 350 plus food and guides Rs 400 and food.

The club has entered into a partnership with the All India Hotel Association, Delhi. In 2007, it organised a trekking expedition for 150 persons from the association in five groups. They walked from Salana to Panar and Sagar, visiting Rudranath, a Shiva shrine.

"More than 30 villagers earned their livelihood from these treks, working as guides and porters," claims Negi. In 2008, 30 trekkers from the association came here. This year, people from Pune arrived to trek from Badrinath to Satopanth in the high Himalayan region. From June 8 to 21 this year, 23 tourists from the association came to trek. The Jandesh Trekking Club arranged porters and guides.

A key aim of the club is conservation and promotion of the unique culture of Uttarakhand. After a tough day when trekkers reach their staying point, they are entertained with folk songs and dances. Jandesh has also set up a museum for nature lovers in Salana village. It has wood masks depicting folk-art and culture, along with 1000 slides, photographs, books in Hindi and English, posters and magazines. Slide shows are also arranged on request.

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The endless natural shower

Susheela Nair
Bangalore

TAKING a detour from the humid, dusty town of Dharmapuri in Tamil Nadu, we begin to soak in pastoral charm as we zip past endless sugarcane fields, a sprinkling of tiny hamlets and green shrub forests. We stop en route on the outskirts of rural settlements to click pictures of brightly coloured village security-guard deities, often referred to as Aiyans. Some of the mammoth moustache-sporting statues look formidable. As our vehicle heads towards the Toppur hills, 12 km from Pennagaram village, thickets of thorny vegetation loom into view and the air reverberates with the distant sound of rushing water becoming louder as one reaches lower and lower.

The falls and the majestic, meandering Cauvery



Photographs by SUSHEELA NAIR

Women enjoy a shower of water at the falls

river form the centrespread of Hogenakkal. With her origins in Karnataka, the Cauvery is said to have come running down to hide in Tamil Nadu. She was hiding, it is said, because she was thickly clothed by the green splendour of the dense forests of yore. Currently, the spectacle is strung together by the rugged beauty of hewn rocks and the endless stretches of both turbulent and quiet waters.

Unlike other falls, these are not located in one

spot but constitute a labyrinth of high, narrow canyons through which the river snakes down. At this scenic spot, one can see the varying moods of the Cauvery. A strange transformation comes over the usually sedate river. It is placid at one moment gliding over its boulder-strewn bed. The next moment, as if possessed by a demonic force, the river explodes into a frenzied downpour and plunges down a 22-metre precipice, seething with passionate fury and boundless energy to the



A labyrinth of high, narrow canyons

chasm below. The result is the Hogenakkal Falls. Hogenakkal literally translates as 'smoking rocks' in local parlance, a name it derives from the pall of mist and spray of water that shrouds and envelops the chasm as the Cauvery waters hurtle over the rock-face. At first glance, the rocks appear to be spewing fumes into the air.

The falls have names and legends too. The bigger fall is the Brahmakundam. The other is the Gnathirtham where a railing has been put up for the safety of the bathers who throng here. Just beyond the falls is the rugged forest with the river widening and flowing through it and little fishing hamlets. We venture to the left of the bathing ghats and walk across the Hanging Bridge, a short suspension bridge leading to the scrubby forest. From atop the bridge, the view of the falls is awesome.

Hogenakkal is also known for its curative powers. The river hurtles down from the dry deciduous mountains. By the time it descends the less imposing frontages downstream, it has absorbed on its journey several mineral salts that give a miraculous healing touch to millions of bathers who come here. Bathing in the Yagakundam is penitential cleansing particularly on the auspicious new moon days of the Tamil months of Tai and Adi during the Tula festival and on the solar and lunar eclipses. But the most important ritual falls on the 18th day of Adi when large crowds of pilgrims gather to bathe in the sacred stream. The 'aadiperukku' day is marked by colour and gaiety.

When we reach the spa-hamlet, we see a small market complex of stalls scattered on the slopes of the valley, gazing down at the water-woods on the other side of the road. The coracles look like

black mushrooms, propped against trees or upturned on the banks of the river. These unique coracles that are locally known as 'parisals' are circular boats made of bamboo frame with their under-surface covered with tarpaulin. Used for ferrying people across the river, they give one a lifetime's experience in those rough waters. A coracle ride to the lower reaches of the river is an exhilarating experience with the boatmen manoeuvring through the weathered rocks lining the sides. With just a single oar on hand, the boatmen handle these coracles with amazing dexterity. When the boatman twirls the coracle, we scream our lungs out.

The long, slippery flight of steps leading to the Bathing Falls are flanked by stalls selling soaps, shampoo sachets, soft drinks, swimming shorts and special fried fish. We see some women enjoying a dip in the river while others are busy laundering their clothes. There are dhobis with makeshift tables and irons. Other vendors offer everything from tea and snacks to handicrafts. Freshly-caught river fish is fried on huge tawas and sold to the accompaniment of popular Tamil songs blaring loudly from transistors. People who come to be kneaded at Hogenakkal are given a gingelly oil massage before an adventurous shower by maliskarans or traditional masseurs who do roaring business here. The demand for a massage is high for the religious. It is a prelude to a dip in the holy river.

Hogenakkal also has a deer park and a crocodile farm. Hogenakkal, with its craggy, forbidding rock face and thundering waterfalls, has over the years provided the backdrop to many fight sequences, rape scenes and romantic interludes in sundry

commercial movies. The famous climax scene of Bobby in which Dimple Kapadia and Rishi Kapoor took a plunge from the cliff top was shot here. Even the legendary MGR bashed up many villains here. The famous song sequence 'Chinna china aasai (choti si asha)' in Roja was filmed here. But what makes this tourist paradise unique is that while politicians bicker over the Cauvery issue, it is being promoted by the tourism departments of three neighbouring states – Andhra Pradesh, Karnataka and Tamil Nadu.

FACT FILE

Andhra Pradesh Tourism Development Corporation organises a two-day trip to Hogenakkal Falls and Koundinya Wildlife Sanctuary near Nanniyal combined with a pleasant stay at Haritha Lake View Resort at Kuppam (080-4113 6373).

Karnataka State Tourism Development Corporation organises a one-day trip to the falls and Krishnagiri Dam (080-22275869, 41329211).

Tamil Nadu Tourism Development Corporation organises trips from Chennai to Hogenakkal. The only accommodation available is in the TTDC Guest House in Hogenakkal (080-22286181).



Cauvery gliding over sedately over a boulder strewn bed

Have a farm holiday

Rina Mukherji
Jhargram

As a tourist destination, Green Ffort offers an authentic farm-to-plate experience. Spread across 450 acres at Dighisole village, in Jhargram, West Bengal, close to the railway station, Green Ffort grew out of an organic horticulture venture by a private company called the MPS Resorts and Hotels.

After setting up a largish organic farm on semi-arid land in 1994, MPS decided to throw open its fields and orchards to tourists. But it's not exactly offering thatched huts with cows mooing at your window. No way. It has built a cluster of cottages with rooms of various sizes and dimensions to suit your pocket.

The place has its charms. You can see cows, goats and buffaloes. You can bump along mud tracks on a cow-cart or a gaily decorated cycle-rickshaw. Lunch is available on a machan-type tree house from where you get a bird's eye view of fruit-laden trees.

The cottages are comfortable and equipped with modern facilities. In the eight years it has been around, Green Ffort has built a reputation for being an idyllic weekend getaway for the well-heeled. It has ISO certification. Even services here have been certified.

Accommodation ranges from dormitories at Rs 700 per bed, to deluxe rooms, to super deluxe rooms and deluxe lakeside cottages at Rs 5,000 per day. A range of cuisines are on offer – north Indian, south Indian and Bengali. The restaurant is modern. The food lives up to its image. The eggs, meat, poultry, fruits and vegetables are all sourced from the farm and are fresh and tasty.

Equipped with a gymnasium, swimming pool, barbecue, boating and angling facilities, a tree-house and park, Green Ffort provides green luxury. Tobacco and alcohol are strictly prohibited.

The first company the MPS Group set up here was Green Developers Limited (GDL) which started functioning as an organic horticultural project. GDL used farmyard manure, humus and vermicompost under the watchful eye of qualified horticulturists and seed technologists. It built over 40 tanks to harvest rainwater and grow a variety of fruits and vegetables.

A year later it introduced poultry and goats. Fisheries followed. Since GDL had already ventured into poultry and fish-feed, the needs of such operations were taken care of. With ample water bodies dug up for irrigating farms, a huge crop of fish was easily managed.

In 2001, the animal husbandry got a boost



RINA MUKHERJI

The cottages are comfortable and equipped with modern facilities



Saplings are nurtured and grafted

when the company acquired 500 cows and 30 buffaloes for a dairy farm. It was then that the company ventured into tourism and set up a modern resort on its premises.

Subsequently rice and wheat cultivation began. Horse gram is also cultivated.

MPS produces an array of jams, jellies, pickles, squashes, syrups, aamsatta processed from its organic fruit, vegetables and grain. Tinned rossogollas and gulab jamuns, sonpapdi and ghee are made out of the milk from its dairy. The feed for its cows and buffaloes comes from the straw on its own farms. Similarly, the goats thrive on grazing lands within its premises. Rice, wheat, gram flour and sattu are hygienically packed for the overseas and domestic market. Since hardly anything is outsourced, quality is rigidly controlled, thus ensuring that the best reaches the customer.

Although there is no community involvement in running the resort, the venture has provided good job opportunities to local tribals in Midnapore district. Many employees are daily wagers who work in shifts from 5 am to 5 pm at rates on par with what they would earn outside as farm labour.

The difference is that MPS provides steady employment all through the year – a big plus point in a region covered with red laterite soil and scarce water where the land yields just one crop a year.

Take Sanjay Nudi who works in the poultry unit. With six bighas and a family of five, the Nudi family is better off with Sanjay and Shrikanta, his brother, employed on permanent wages plus meals on the premises. The third brother manages the land but would gladly opt for a job.

Then we meet Basudeb Mahato, a high school graduate from Balarampur. For 12 years he worked at an ice-cream factory in Jhargram for just Rs 900 per month. He now earns Rs 75 per day working at the poultry unit. With 11 siblings and a 14 member family living on two and a half acres, he says the job is a godsend.

Women are also employed. Mamata Dhera and Sandhya Mahato have been working in the horticultural section since four years. As daily-wagers, they nurture saplings for grafting. The three-shift schedule suits the women. Mamata works from sunrise till mid-morning. She then spends time with her one-year-old child, attends to her housework, entrusts her baby to her mother-in-law, and returns to work later in the afternoon. She earns Rs 65 a day.

Since most operations are automated, it is not difficult to train locals say seed technologist Rabi Mahato and horticulturist Biswajit Bera. "The initial work is done by us. Then the supervisors take over. Once they have seen us work, tribals pick up fast. Being enthusiastic, they often come up with interesting suggestions most of which we end up implementing." As for the dairy, Ahirs from Uttar Pradesh and Bihar look after the herds. Supervisory operations are handled by dairy and poultry experts.

Plans are afoot to expand operations, and get into meat and fish-processing. The resort plans to set up spas and introduce herbal and natural therapies. A bird-sanctuary is on the anvil.

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PRODUCTS FROM INDUSTRIAL WASTE



SELF Help, Recycling, Altering and Manufacturing Group (SHRAM) was started by Piyusha Abbhi, a young MBA. She got together a group of young women from village Batamandi in Himachal Pradesh and helped them bring out their latent talents and skills.

The idea behind starting the group was to recycle local industrial waste and generate an income for the women so that they could become financially independent. The women's group makes use of recycled material and natural fibres like palm leaves and grass to make eco-friendly products. The girls were inspired to make these products after seeing similar work being done by an NGO in Delhi working with spastic children. The group specialises in making different kinds of bags like sling bags and shopping bags. They also make attractive coasters, water proof satchels, raincoats, moodas, kits and crochet products.

For trade enquiries contact:
SHRAM, Self Help-Recycling, Altering and Manufacturing Group, Village Batamandi, Paonta Sahib Himachal Pradesh
Phone: 09318911011 Email: piyusha4@gmail.com



CONGO-SHONGO

CONGO-SHONGO, an online retail initiative is being launched by iCONGO (Indian Confederation of NGOs) in partnership with KANKEI, an Internet marketing and BPO operation. A network of shops in malls and other urban markets will also be set up.

The retail website and shops will market and sell products made by NGOs. They will showcase merchandise produced by marginalized artisans, crafts people, the differently abled, positive people and communities. The idea is to create progressive market supply chains through a Business 2 Consumer (B2C) and Business 2 Business (B2B) model.

CONGO-SHONGO will tap into markets in the US, Europe and India. It will link NGOs to companies keen to buy wholesale products for gifting. It will bring the producer face to face with the consumer.

The products to be stocked include greeting cards, traditional toys, curios, jewellery, fashion accessories, books, music videos and CDs, art, home décor items designer ware and so on.

The slogan of CONGO-SHONGO is, 'Where Quality is a Cause.' All products will be carefully screened to ensure they meet set standards.

Contact: jeroninio@icongo.in, www.shopsongos.com

SHOP WITH DEVOTION

ARPANA Trust's brand new shop, Devotion, is at E-22 Defence Colony in New Delhi. For quite some years, Arpana had been selling products under the Devotion brand name at various locations. Now everything has been brought under one roof at an easily accessible spot.

The shop has all of Devotion's neat and attractive products. You can buy pretty hand embroidered bedspreads, baby frocks, towels, nightwear, table mats, table cloths, napkins, kurtis and much more. The shop has a new range of gift items as well



as religious publications and CDs. The products are made by rural women in Haryana. The Arpana Trust has organised them and helped them learn handicraft skills and earn an income.

Address: E-22 GF. Defence Colony, New Delhi, Phone: 24331136

Shop timings: 10:30 am to 7:30 pm
Neeta Tandon. Phone: 9871284847

Email: devotion@arpana.org

Website: www.arpana.org



A WOMEN'S INITIATIVE FROM KASHMIR

AFAAF is inspired by the idea of 'Think Global, Act Local'. With ideas and inputs from such initiatives, near and far, we aspire to make pure quality products in the Kashmir valley. In the summer of 2007, a group of students from the Women's Polytechnic, Bemina, Srinager, travelled to Ranikhet, Uttarakhand. There they were hosted by Umang, a women's self-help group and by the Uttarakhand Sewa Nidhi in Almora. Inspired by their experiences on the trip,

Benish, Saima and Tasleema with Jyoti, set up a small unit to make jams and preserves. Starting in April 2008 with strawberry, then cherry, apricot, plum, pear, peach and quince and ending in November with apple, the jams are made with fresh seasonal fruits. The addition of almonds, walnuts and raisins make the jams unique.

Afaaf hopes to branch out into dried organic foods and traditional pickle recipes.

For enquiries please e-mail: afaafpure@gmail.com



GIFT WITH A MESSAGE

CHILD Rights & You (CRY) presents a range of attractive products designed and inspired by the creativity of children. The CRY shop in Mumbai is a space where you can interact not just as a buyer but as a supporter, a partner in the child rights movement. Each product is a tribute to the incredible courage and determination of children who surmount the deep inequalities of their lives.

CRY believes strongly that we should see children not merely as objects of sympathy but as citizens with the same rights we consider our due. CRY works with grassroots groups to address the root causes that keep little children hungry, illiterate, exploited and abused.

To buy CRY's lovely products please contact:
Shop Number 189/A,
Anand Estate,
Sane Guruji Marg,
Mahalaxmi,
Mumbai 400011
Phone: 022 23096845

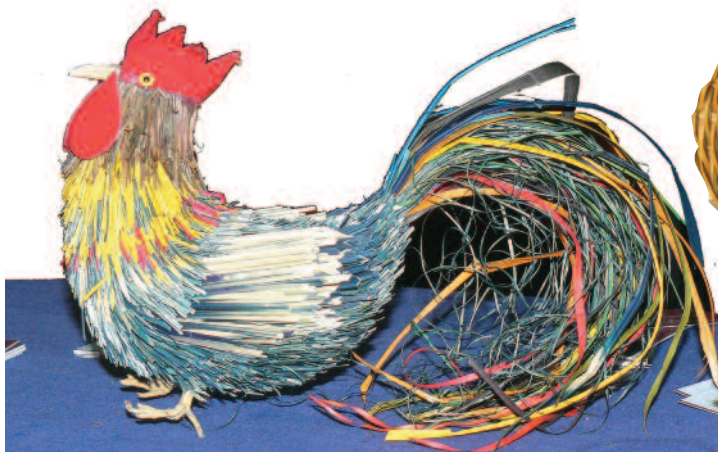


GRASSY CRAFTS

VETIVER leaves have been used in handicrafts since hundreds of years in Thailand and Africa. However, the fine handicraft industry was started in Thailand as an initiative of the Queen of Thailand.

Paetai Kuyanate is a master craftsperson of vetiver leaf in Thailand. Paetai has trained more than 500 women from China, Equador, Venezuela and India. Handbags, sun hats, shopping bags, flower baskets, lamp shades, pillow and mattress covers are some products made from vetiver leaves.

Vetiver Network and Royal Projects Development Board, Thailand, have trained two Indian women, Zehra Tyabji, a graphic designer and Rashmi Ranade, a product designer from Women Weavers. "We will develop a range of utility items home items like runners, coasters, table mats and room screens from vetiver," say Zohra and Rashmi. At their Gudi Mudi project in Maheshwar, Madhya Pradesh, they have trained over 30 women in the use of dried vetiver leaf in hand woven tablemats. The project is successful and the women have learned well. They are currently looking for buyers.



Contact: Sally Holker, Women Weavers:
women.weavers@gmail.com
Zehra Tyabji : tyabjis@yahoo.com
Rashmi Ranade: designatwork@vsnl.net

BUY A BIRDHOUSE



In urban areas pollution and deforestation has taken a heavy toll on bird population. To connect people with birds, the Nature Foundation has designed all-wood bird houses priced at Rs 450 which can be easily put up in balconies, terraces and gardens at homes. In their pilot phase before the current, final design was arrived at, the Nature Foundation distributed over 100 bird houses to see how birds respond. Feedback has been good. The NGO is working on a campaign aimed at schools now. "We want to get 200 Delhi schools on board. We have created an entire nature kit with the bird houses. The kit will have a CD Rom with a short film on birds, photographs and information sets to help educate students. We are successful if children begin to understand and love birds," says Raakesh Khatri, co-founder, Nature Foundation.

Contact: Nature Foundation,
B-23, 2nd Floor, Sector 65, NOIDA-201309
Phone: 0120-4210988, 09312626909, Website: www.nfindia.org

SOUP OF THE SEASON

THE Foundation for Revitalisation of Local Health Traditions (FRLHT), an NGO, has been working since 1991 to revitalise India's medical heritage and make it accessible to people. FRLHT conserves medicinal plants, minerals and animals, demonstrates the effective applications of indigenous knowledge and energises social processes for transmission of traditional knowledge. FRLHT is an ISO 9001:2000 accredited organisation.

FRLHT's Centre for Pharmacognosy and Pharmaceutics, an AYUSH accredited testing and certifying laboratory has developed a range of Ayurvedic soups and drinks.

Soupherb™ has been formulated from herbal ingredients. Soups are available as powder in a sachet. Just empty contents in a cup, add hot water and stir. Try Lemon Soup and Coriander Soup for a refreshing hot drink. There is also Ginger Soup and Mint Soup for improving digestion.

We also offer Ayurvedically designed tasty herbal drinks for summer, for winter and for the rainy season. The drinks are ready-to-drink, aseptically packed and devoid of preservatives.

Contact: Foundation for Revitalisation of Local Health Traditions, No.74/2, Jarakabande Kaval, Post Attur, Via Yelahanka, Bangalore - 5600106, Ph: 080:28565709, 28565618,

Website: www.frlht.org,
www.greenhealer.net

Email: padma.venkat@frlht.org



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Cheers to the Silver Jubilee, cheers to all the supporters!



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