Success Stories of Panchayati Raj

Volume I No. II

Role of Panchayat in Environmental Management

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Foreword

After the constitutional amendments the Panchayati Raj Institutions have been given powers to organize developmental work for the benefit of local people. Panchayats have been undertaking development work related to protection of environment and sustainable development.

The **Indian Environments Society** under the **ENVIS center on 'Role of Panchayat in Environment Management'** has compiled success stories from different Hindi and English newspapers and is publlishing them in book form **"Success Stories of Panchayati Raj"**.

The first edition of this book was highly appreciated by the readers and users. Keeping this in mind we have developed the 2nd issue of the **"Success Stories of Panchayati Raj"**. We hope this issue will be appreciated and will help the readers.

Dr. Desh Bandhu
President

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CAMEL MILK MAY BE ANSWER TO DIABETES

JAIPUR, Dec. 15: India is sitting on the world diabetes throne with the maximum number of diabetics across the globe. Yet in the arid sand dunes of Rajasthan, there is a tribe of camel breeders called Raicas who are immune to this condition thanks to a staple item on their daily menu, camel milk. According to the research conducted at the Diabetes Care and Research Centre, SP Medical College Bikaner, a litre of camel milk contains about 52 units of insulin.

"These units in camel milk are not neutralised by the acidic juices in the stomach, unlike other forms of orally administered insulin," said Mr RP Agrawal, director, Diabetes Care and Research Centre, Bikaner.

There are two types of diabetes, Type I and II, that are prevalent in the country. Type I diabetics have no alternative but to maintain their blood sugar level with insulin shots, while blood sugar in those with Type II condition could be cured by following a healthy and balanced lifestyle. But now, it has been scientifically proven that gulping down camel milk daily would suplement 60 to 70 per cent of insulin in Type I diabetics.

The research on the project had begun with the Raica community as the base model. An initial survey revealed zero prevalence among the Raicas in Jaisalmeer and Jodhpur, wihile the rest of the tribe members in the same region who donot like camel milk but have similar lifestyles, had five to six per cent pervalence. Camel milk was successfully tested on albino rats clinically induced with diabetes. Later, similar tests were conducted on more than 50 individuals with Type I and Type II diabetes for more than two years, resulting in a drastic fall in their blood sugar levels.

"A Type I diabetic who need 20 units of insulin annually can bring this down to six to seven units with regular intake of camel milk," he said. Both camel milk and this batch of researchers from Bikaner are yet to get their due in their own diabetes-infested country. But they have featured in many international journals and research publications and even been recommended by the American Diabetes Association.

The Indian Council of Medical Research (ICMR) recently recognised this unique discovery which could provide an effective relief to scores of diebetics in the country.

"Sadly, most of the people in our country are unaware of the fact. We were, however, invited to a number of conferences in the USA, Japan and other countries where they have shown keen interest in our findings. We are also in correspondence with medical universities and research institutes in the USA," Dr Agrawal Said.

Scientists are attributing this trait of camel milk to a unique phytonutrient (derived from plants) present in the camels' daily diet. But they are yet to isolate this blood sugar fighting agent. Research is on. Camel milk is also high on minerals and low on cholesterol content, compared to cow’s milk.

The Sunday Statesman, 16.12.07

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PIRAMAL HEALTHCARE GOES RURAL

PIRAMAL HEALTHCARE (PHL), the newly-created indentity of the Rs 6,154-crore Nicholas Piramal Group, is now foraying into the rural healthcare segment. The company, which is in the business of medicine and pathological and medical tests, has already started a pilot project in Rajasthan.

The company is also starting a healthcare fund through Indiareit, its funds business, to invest in a wide variety of hospitals and hospital-related industries, the company said.

As part of the healthcare delivery project, the company is going to train nurses to enable them properly diagnose symptoms in a patient from villages. These trained nurses would use SMS and other telecommunications software to communicate to doctors in larger district or zonal hospitals in a hub-and-spoke model. PHL is targeting 1,00,000 villages in the coming five years, said AjayPiramal, chairman of PHL.

"Let's face it, even for doctors in villages, it is not physically possible to attend to every single case in the whole area. This hub and spoke model would let them cover much more area than currently possible," he said. "You can also do a lot of things with the mobile phone. The doctor can feed it into software that can be incredibly accurate. And there is software available for it," he added.

Once the doctors properly diagnose the disease, they would get back to the nurses in the local hospital, and the nurses would give the medicines out.

The model is different from telemedicine in the sense that the nurses would check the patients themselves.

In telemedicine, the patient speaks to the doctor directly through a video call, and the doctor does not physically examine the patient.

The model would require extensive support in terms of medical supplies and equipment. The campany is already intalks with different stake-holders for it, Piramal said, but declined to name the companies.

He ruled out setting up of hospitels or clinics for the project though. While the requirement of medicines and equipment to support the system could be a great source of monopoly revenue for PHL's medicines business, Piramal said that a part of the project is to create confidence among the patients. This would be difficult to do in a monopoly situation, he said.

Hindustan Times, 12.03.08

NEW MAIZE HYBRID AN ANSWER TO NUTRITIONAL NEEDS OF THE POOR

DEHRA DUN: There is good news for those looking for milk-like nutrition elwewhere, thanks to an early maturing quality protein maize hybrid, Vivek QPM-9, developed by the Vivekanand Institute of Hill Agriculture in Almora and released for cultivation in Uttarakhand by the State Variety Release Committee.

The Vivek QPM matures in about 90 days, making it suitable for almost the entire country.

A few villages in Uttarakhand have been identified where the QPM hybrids will be introduced for converting them to QPM maize villages, according to the Institute Director H.S. Gupta.

The protein quality of QPM is considered 90 per cent of milk protein and it would go a long way in supplementing the nutritional needs of the children and the poor if introduced in their meals, according to P.K. Agrawal, Principal scientist at the Institute.

Nutitional quality

Maize is an important food and feed crop of India and ranks fifth in acreage and third in production. Most of the maize grown here is the late variety deficient in essential amino acids like lysine. The Quality Protein Maize with opaque-2 gene along with associated modifiers purportedly contains twice as much lysine and tryptophan and 30 per cent less leucine than the normal maize.

The reduced level of zein further improves the nutritional quality of the QPM,the scientists said, hoping that farmers would take to the QPM variety to improve food and nutritional security.

The Hindu, 03.02.08

HEALTH BHI, ENVIRONMENT BHI

People are taking up cycling in a big way. They feel that besides helping them stay fit, it is also an eco-friendly mode of transportation.

Why do want to spend thousands on loosing weight when you can do it for a fraction of cost, without side effects, and in the process make the mother earth healthy too. Here's a one-for-all solution, a cool new way to keep yourself as well as the mother earth "young and beautiful", Cycling.

There are innumerable benefits of cycling, for example, it minimises the risk of coronary heart disease and provides protection from the clutches of health problems like strokes, diabetes and cancer. It ensures that your blood pressure is under control. Pursuing cycling helps a great deal in building your stamina, enabling you to carry out your day to-day activities effectively. What's more you can relieve those child hood memories of carefree days, when you just traversed in the greens without a care in the world.

For those who are extra cautious about their looks and appearance, cycling is one of the most effective exercises to shed off those extra calories and flab by abs. Even a small amount of cycling would be good enough to boost your metabolism level, there by fastening your weight loss program.It help to improve the overall balance and coordination.

It's obvious that it is less healthy to cycle in polluted air than in clean air, and we all know that automobiles are one of the largest sources of air pollution. But by using a bicycle for short trips, we can reduce the emission of pollutants into the air we breathe. Moreover a bicycle will helpyou bypass the most congesting traffic, which even the most powerful sports car can't so wherever possible cycle your way and give trest ro those exhaust spitting demons!!

So what are you waiting for, cycle off your weight and tensions and lead a happy fit lifestyle.

The Times of India, 07.04.08

SUCCESS STORIES RELATED TO CONSERVATION OF NATURAL RESOURCES

- vekfu;k ?kVk] tyldV dVk
- tyL=krk dk feyk u;k thou
- Chhattisgarh set to become first state to give forest rights
- S. Delhi villagers protest felling of tree
- Save water, save lives: Orissa sets an example
- Wealth from the woods
- Green evolution
- Hydel projects and perils: an instance in Kerala
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CHHATTISGARH SETT O BECOME FIRST STATE TO GIVE FOREST RIGHTS

CHHATTISGARH COULD become the first state to give its population of tribals and forest dwellers land rights this month, a government report states.

The Chhattisgarh government had informed the central government that the flnalistion of claims at district level committees and distribution of forest right awards could start from May.

Incidentally, the state wants to distribute most of the awards before assembly elections later this year.

The Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, implemented from January 1, gives tribals and forest dwellers rights cally wildilife habitats identified by the Environment and Forest Ministry.

The reoprt-prepared to gauge the impact of Prime Minister ManmohanSingh's appeal to chief ministers in January to implement "landmark legislation" on forest right-also lauds Orissa, another state with a sizeable trilbal population, for initiating quick action to implement the law. The Orissa government has told the Centre sub-divisional and state-level committees have been constituted and the process to identify forest rights has been initiate, the report says.Other states working on implementing the Act are Rajasthan, Madhya Pradesh Karnataka, Gujarat and Assam.

The report also clarifies that not all states are enthused. Arunachal Predash, Bihar, Goa, Himachal Pradesh, Jharkhand, Maharashtra, Uttranchal and Uttar Pradesh have not initiated any action on implementating the law on May 1. The Andaman and Nicobar Islands, which have a huge triblal population living in forests, has not informed the Centre about its intentions to implement the law earnestly.

Hindustan Times, 13.05.2008

S. DELHI VILLAGERS PROTEST FELLING OF TREE

Claim hand of logging mafia in hacking of 'religiously significant' tree

THE villagers of Maidan Garhi in south Delhi today complained to the police after a mango tree, which was planted on a grave and religously significant, was felled early this morning.

According to the villagers, at 6.30 am onFriday, they woke up to see the sole mango tree in their area choppedoff. The villagers have alleged the involvement of the logging mafia, which they claim, has been illegally felling trees in the Ridge.

Some of the villagers said they found out that the felled tree was taken to the neighbouring village of Mandi. The villagers said they have even identified the tree as well as the suspects.

The villagers said they reached the police station around 7.30 am and waited the whole day to lodge a complaint.

"Logging by organised mafia is regular in the area," said RWA president Om Narayan.

"Before this, trees in the Ridge like Shisham were cut. All the activity happens at night....after 9 pm.We went to the police as this trree had religious value and was planted by us in 1939," Om said.

The tree was planted a private field, now taken over by the DDA. That didn't however, deter the villagers-as well as people from neighbouring villagers-from using the leaves of the tree for *poojas* while it stood.

"The tree stood on my great grandfather's grave....it was planted by him. This is just stealing of our resources..we followed the tyre tracks on the ground. Posing as byers, we were able to point out the suspects in the neighbouring villager of Mandi. We have also recognised the tree," say 37-year-old Satish Kumar, who has seen the tree for as long as he has lived.

The police are carrying out investigations. "We will file an FIR soon," said an officer.

The tree was not a part of the protected Ridge, but it is an offence to fell a tree." It is illegal to cut any tree in the Capital without permission," said Conservator of Forests DM Shukla.

The Indian Express, 23.02.08

SAVE WATER, SAVE LIVES: ORISSA SETS AN EXAMPLE

A watershed management project involving the community has had far-reaching impact on people's lives

One can easily miss the small cluster of mud houses in the midst of bright yellow sunflower fields. The dusty road that runs through lush green paddy fields winds its way up the hills. The air is thick with the scent of white *mahua* flowers being collected by villagers to sell in the market.

It's a beautiful drive down the dusty roads of Nuapada and Baragarh districts in western Orissa, but life's not as beautiful for the people. A drought-prone area, these are two of the poorest districts in the state. Nuapada, for example, has nearly 60% people living below poverty line. Most are tribals like Gonds, Bhunjias, Dals etc, who depend on agriculture for sustenance.Ironically,despite getting an average rainfall of 1,300 mm, the district is drought prone.

Baragarh, however, is more fertile as it's drained by several rivers. But agriculture is still backward and more than 70% of the farmers are small or marginal. Also, an inequitable social structure means most people don't have access to good land. They till the unirrigated slopes and have to depend on erratic rainfall for water.

Poor productivity means in debtedness-the informal interest rate for loans is as high as 10%

Agents of change

Till recently, most families migrated to other area to make a living. This went on till the villagers learnt how to conserve rainwater through watershed development.

Usually, the rainwater would darin off or simply dry up. Now, the community along with the Orissa government and NGOs has started watershed programmes to conserve water in wells, manmade ponds and bunds. The state government and has set up a Watershed Development Mission-the first of its kind in India-to take up livelihood and community development programmes.

At the village level, watershed committees implement the programmes. The good thing is, women too have come to the fore-fornt as agents of change. They have formed self-help group (SHG) to supplement their income.

Malati Sabar's is one such famliy in Suklimundi village, Nuapada. They used to migrate to brick kilns in Andhra Pradesh every year. Now, Malati collects *mahua* flowers to supplement her income while her husband, a small farmer, grows an annual paddy crop on their two-acre plot. Malati has also become a member of an SHG that retails kerosene. Recently, she took a loan from the SHG to buy a goat. "My life has changed even since the watershed programme was introduced here," says Malati.

Sunday Times of India, 06.04.08

In western Orissa, the water shed programme is being jointly implemented by the government and Department for International Department (DFID) of the UK government under the western Orissa Rural Livelihood Project (WORLP). "We are following a 'watershed plus' approach. The aim is to give people more livelihood options besides agriculture," says Sarat Behra, project director, Watershed Commission, Nuapada villagers say they are earning more from the same field and it's regular income too. Moreover, they now have the option of both farm and non-farm activities in their villages This has curtailed the seasonal distress migration.

Tunu Sabar of Larki village was one such migrant who would go to Andhra Pradesh during the lean season. "Hardly anywork was available here. We couldn't irrigate our fields or grow crops. Most of us ment to Hyderabad, Bhubaneshwar, even Surat to work in brick kilns or as labourers," he says. Life at the brick kilns was tough. Each family got Rs 5,000 as advance from the*sardar* along with a weekly food allowance.In the end, the*sardar* took his cut and the migrant was left with almost nothing. But now life's loking up. Tunu now grows paddy, onions, vegetables, sunflowers etc, on his two-acre patch. He has built a low-cost onion storage area and his*kaccha* house has been replaced by a*pucca* one. He has a motorbike and even a telephone.

Similarly, Jamuna Sabar, a widow from Malpada village, used to work as a coolie during the lean months while her son went to Surat as a labourer. Now, they have dug a pond that helps them grow paddy and vegetables."We plan to diversify our crops and start pisciculture too," says Jamuna.

Common cause

Watershed development is not just about livelihood but also capacity building livelihood but also capacity building. Awareness levels among villagers have gone up and community mobilisation is more easy.

Ambahal village in Baragarh is a good example. Here, the watershed develoment community got to gether to shut the liquor shop so that the village could get aid from NGOs. "We realished we couldn't get money unless everyone got together.So we shut the liquor shop. Now we are working to spread education, build roads, control malaria etc,"says Kamilini Patnaik, chairperson, watershed development committee. Moreover, the community makes sure the development work touches the poorest first and then trickles up. The central government is now planning to replicate this success story in other states as well.

Water, which used to divide a community into haves and have nots, is now becoming a great social leveller.

WEALTH FROM THE WOODS

The Himachal Pradesh Government is demanding that it be compensated for helping maintain the ecological balance in the country. PC Lohumi reports

Should Himachal Pradesh be given carbon credits for preserving its forest cover? That's what State Chief Minister PK Dhumal wants.

Explaining the idea, a senior officer of forest department says, "Himachal has standing forests worth Rs 1.5 lakh crores and we can easily supplement our income by exploiting this resource, but we have taken a conscious decision to preserve and expand the green cover."

On his part, the Chief Minister has said he has raised the matter at every available platform and personally discussed the issue with the Central authorities, including the Union Minister of State for Environment, for cost benefits to the tune of Rs 1,000 crore inlieu of the carbon credits earned by the country for the ecological balance it continues to maintain, while sacrificing huge revenue. For, the logic goes, if European countries like Switzerland, Austria and Finland can get carbon credits, why casn't Himachal be compensated similarly for maintaining the ecological balance in the country?

Over the years, the State has taken a number of measures to save its forests. The most important of these are use of cardboard boxes for packaging of fruits and vegetables, leading to a sharp reduction in the allotment of timber under timber distribution (TD) rights. The packaging of fruits and vegetable in wooden boxes required 3.5 lakh to 4 lakh cu m of timber for which green trees were felled, while an equal quantity of timber was required to meet the demand for distribution of timber under the TD rights.

Moreover, the United Nation Framework Convention on Climate Change (UNFCCC) provides vast scope for a hill State like Himachal Pradesh, with a huge potential for hydroelectricity generation, to earn carbon credits. The hydroelectric projects provide cleaner power compared to the highly polluting coal-based thermal plants.

The Government is formulating a policy on climate change specifically with a view to earning carbon credits and protecting the fragile hill environment, and the final document will be ready by December 2008, after which schemes will be framed for various sectors for earning carbon credits.The projects will be registered with the designated national authority, after which the

Sunday Pioneer, 20.04.08

UNFCC will carry out third party validation before issuing certifying emission reduction units (CERs) Already, some private sector micro-hydelprojects, and the 192 MW Allian Duhangan project, have been registered with the designated authority for earning CERs.

Last year, Himachal Pradesh, became the first State in Asia and the second in the world to introduce a scheme for selling carbon credits to the World Bank directly for villagers who could earn 3,000 to Rs 5,000 per hectare annually from the plantations for a period of 30 years. The scheme will provide a much-needed fillip to the participatory forest management programme in the country. In all, new plantations will be raised in over 12,000 hectares of degraded and fallow land under the scheme in a phased manner. Only land which is fallow since 1990 can be taken up for plantaion.The Forest Department has identified 25 species, including fruit and medicinal plants like mango, fig and aonla, which not only have a good capacity for carbon sequestration, but also help regulate the hydrological cycle.

The World Bank has agreed in principle to extend the facility of carbon credit financing to encourage people to raise forests on private and community land under the Mid-Himalayan Watershed Development Project. This makes India the first country in Asia and only second in the world to have a scheme for selling carbon credits to the bank to directly benefit the growers.

New plantations will be raised in over 12,000 hectares of degraded and fallow land under the scheme in a phased manner. The growers will be paid Rs 25,000 per hectare annually for per hectare annually for 10 years for protecting and maintaining it.

Principal Chief Conservator of Forests Pankaj Khullar says that ther scheme would add a new dimension to social forestry in the country as apart from carbon credits, fruit and medicinal species too have been included inforestry which growers would find worth while.

TheWorld Bank, infact, has selected Himachal Pradesh, for introducing carbon credit financing because of its excellent performance in the implementation of the Kandi project, and particularly because of the high level of community participation and overwhelming involvement of womenfolk. The project was implemented through a society to facilitate fast decision to facilitate fastdecision-making, and funds were given directly.

GREEN EVOLUTION

One hopes the evironmental movement in India will now enter its most fruitful stage

THIRTY-FIVE years ago today, a group of peasants in the upper Alakananda valley stopped a group of loggers from felling a patch of forest. That act. of protest gave birth to the Chipko Andolan and, by extension, to the Indian evironmental movement. Through the 1970s, other peasnts in the Himalayas successfully prevented other loggers from decimating public forest. Then, under the leadership of the visionary Chandi Prasad Bhatt, they turned from protest to reconstruction, reforesting barrden hillsides and promoting renewable sources of energy such as biogas plants and microhydel project.

Unlike in the West, where modern environmentalism was given birth to by scientists, in India it began through the protests fo rural communities. Following Chipko, tribals in the Chotanagpur plateau launched their own struggles in defence of local hts in the forest. Meanwhile, on the Kerala coast, artisanal fisherfolk protested the destruction of their fish stocks by large trawlers. And in Gandhamardan in Orissa, tribals resisted the damage to their lifestyles and to the local ecology by bauxite mining.

Since its origins, the environmental movement in India has passed through four stages. In the 1970s, it was seenas something of aninterloper, desturbing the consensus-shared among politicians and intellectuals alike-that concern for nature was a luxury only rich countries could afford. The Marxist intellectuals went further. For them, ecology was a 'bourgeo is deviation fromthe class struggle'. Dismissed at first as CIA agents, menlike Chandi Prasad Bhatt slowly brought their critics around to the view that there was indeed an 'environmentalism of the poor'. Where in the West the Green movement was motivated by the desire to keep beautiful places unpolluted to walk through, in India environmentalism was driven not by leisure but by survival. There was an unequal competition over resources such as forest, fish water and pasture. On one side were local communities who depended on these resources for subsistence. On the other, urban and industrial interests who appropriated them for profit. State policies had tended to favour the latter, leading to protests that called for a fairer and more sustainable use of the gifts of nature.

Hindustan Times, 27.03.08

If in the 1970s they struggled to be heard, in the 1980s Indian Green began receiving massive (and mostly positive) media attention. There was veritable flood of reportage on environmental issues, and in most languages of the Eighth Schedule. Of those who wrote in English, the names of Anil Agarwal, Darryl D'Monte and Usha Raj come to mind.But superb work was also done by Raj Kumar Keswani and Shekhar Pathak in Hindi, and by Nagesh Hegde inKannada. With this surge of media attention came a welcome if belated response from the government. In 1980, a new Department of the environment was established. This was upgraded five years later into a full fledged Ministry of environment and forest. State governments follwoed by setting up environment ministries of their own.

To begin wigh, peasants had protested. Then, journalists sympathetically reorted on these protests. Now commenced a third phase, which we may term 'professionalisation'. Scientists and social scientists began to systematically analyse the roots of environment conflicts. Some went further, seeking technical or institutional solutions. The flagship Indian Institute of Science in Bangalore started a Centre for Ecological Science. This academic interest was manifest in the social sciences as well-thus, for the first time, students could take courses or write theses in the emerging fields of 'ecological economic' and environment history'.

Then, in about 1995, an anti-environmental backlash began. As the Indian economy began to take off, as a surge of new projects were floated or started, the Greens found themselves cast as negative, backward looking and, indeed, as the only obstacles to India’s march to greatness. Where it had once stifled private enterprise, the State now bent over backwards to accommodate it. Only the Greens were willing to ask any questions at all-about where the land for the new projects would come from, for example, or what likely impact the projects would have on the state of the air and the water.

From the mid-1990s, a series of sharp attacks on environmentalists began appearing in the national press. Where they were once calumnied as CIA agents, now they were said to be a hangover from the bad old days of socialism; of being, as it were, KGB agents in disguise. The criticisms were at times deeply unfair. But it must be admitted that the Greens had not always stated their case to advantage. They had used exaggerate, apocalyptic, language. They had demonised the market as they had once demonised the State. And some Greens had displayed what appeared to be an almost atavistic fear fo modern technology.

The attacks on environmentalists were initiated by a few free market ideologies, whose arguments found a ready audience among the growing middle-class. With India (for the first time) experiencing high rates of economic growth, the Greens were dismissed as party-poopers. Bowing to the mood, the press stopped running stories on the degradation of the environment and the

marginalisation of the rural communities that it caused.A greater and more shameful abdication was by the Ministry of environment and forest, which dismantled the existing safeguards and made the claearance of even the most destructive projects a mere formality.

There are many good things to be said in favour of economic liberalisation. It has increased productivity and efficiency, and spawned a new wave of philanthropy. At the same time, the consumer boom it has engendered has come at a very large cost.Air pollution levels in India's cities are among the highest in the world. Most of our rivers are dead, killed by industrial pollution or untreated sewage. Commercial farming has massively depleted groundwater aquifers. And, out of sight of the cities and the middle-class, mining projects in central India are leading to a disaster of possibly epic (and certainly tragic) proportions. Politicians in states such as Orissa and Chhattisgarh have handed over huge areas of forests and hillside to fraction of the projects cleared have begun operations, they are already destroying fields and farma, polluting rivers and sending the tribals they dispossess into the waiting arms of the Naxalites.

It may be that the anti-environmental backlash has finally run its course. If not the facts on the ground, the growing global concern with climate change could bring the question of sustainable development back into centre-stage. If, or when, that happens, the Indian elite would be advised to look within, to seek solutions worked out at home and in keeping with Indian conditions. For there is far more to Indian environmentalism than *dharnas* and *satyagrahas.* In those decades of the 1980s and 1990s, Indian scientists had thought deeply of how best to generate growth and employment while keeping in mind the distinctive resource endowments and social structures of our land.I think, for example, of the work of the late A.K.N. Reddy on sustainable energystrategies, of Madha Gadgil and Ashish Kothari on biodiversity conservation, of Anupam Mishras and Ramaswamy Iyer on water management, of KineshMohan on transport, of Kunu Roy onworkplace safety, and of Ravi Chopra and the peoples Science Institute in Dehradun on rehabilitation.

The workof these scholars addresses the environmental question in highly practical ways. They show how we can more sustainably manage our water and forest resources, forge better transport and energy policies, and protect the health of our citizens. Their studies, still available, still relevant, can-if given the necessary push by the press and the broader public-take India down a less destructive, that is to say more sustainable, path of economic development.

HYDEL PROJECTS AND PERILS: AN INSTANCE IN KERALA

Once the Pathrakadavu project is taken up, Silent Valley and the natural forests around it will be in danger-whatever the Government may promise.

MATERIAL ADVANCEMENT in the modern world depends largely on the multiple uses of electricity. Nuclear power was considered a great cource. But after the Soviet disaster, and the near catastrophe in the United States avoided only by a lucky last-minute discovery of a fault in the Three Mile Island plant, many progressive countries gave up reliance on atomic pover generation, considering the latent risk.

The menace of the atom notwith standing,India has been tempted to use this technology ignoring the dangers involved. Hydroelectric power is cheaper and safer. So, where water resources are available, without compromising ecologicaland environmental safety, hydelpower plants have become popular. Thermal alternatives have been sought where coal and like facilities are available. Even wind power and tidal energy have been developed despite the cost factor and the operational difficulties involved.

Where water resources such as rivers and huge waterfulls from mountain regions are nature's gifts, the state has naturally run after such options. But this appeal is fraught with serious disadvantages and disregards ecological and environmental factors. Myopic approaches by semi-literate administrations are sometimes unmindful of the values of ecology and environment. As a result, hydel plants with large dams and big canals inflict irreparable damage to the long-term interest of the people. Earths sciences are important in this context. Prime Minister Indira Gandhi realised this, and the Constitution was amended to stress nature's vulnerabmility and the necessity to be in compliance of ecological and environmental factors.

Dr. M.G.K. Menon, a great scientist and adviser to the Central Government, insisted on examining projects from such a point of view. That is the scientists of Kerala fought such fully to preserve the integrity of the Silent Valley, which would have become the victim of a hydel project.Its unique forest wealth would have been robbed.The beneficiaries would have been wealthy commercial interests, which are a growing mafia menace unconcerned with the treasures of nature.

Article 48-A and Part IVA of the Constitution grant environmental supremacy over development. Lesser considerations of augmenting electricity and industry may attract small minds in power,

The Hindu, 3.05.07

influenced by tycoons and money-making pursuits. Big business is not to decide national governance. Statesmen with a vision, who lookfor long-term benefits over generations, will never surrender to the syndrome of promoting commerce and industry for the promoting of the creamy layer. Industrialise or perish, the capitalist giants would agree. If ecological and environmental criteria are forsaken, 'industrialise and perish' will be nature's retort.

The agrarian poor, with little land, have novoice-as against the powerful urban factory-owners and merchants with political influence. Green fields, rich forests which are the sanctuary of rare bird species, jungles with wild animals, and rivers which die dry if polluted or deprived of sandbeds-all these will disappear. So will the peasants who are the backbone of food self-sufficiency.They will be replaced by ugly concrete skyscrapers of business magnates who spread lethal chemicals inair, water and soil. these will punish millions of villagers with diseases, while letting a few billionaires roll inwealth and luxury with "Westoxicated" technological terrorism. To whom does India or Kerala belong? What is patriotism and development?

A U.N. conference defined development as a process that must be designed, even at the himblest level, to ensure the advancement of man through his own endeavours. The multination of material wealth has to be mainted as the purpose of development.

The purpose of development "should be not to develop things, but to develop man," said the Cocoyoc Declaration of 1974. "Development must be aimed at the spiritual, moral and material advancement of the whole human being, both as a member of society and from the point of view of individual fulfilment."

Similarly, ecology means the study of the interaction of living organisms with their physical, biological, and chemical environment. Since the 1960s, the ecological movement has argued that people must live within the limitations of the earth's finite supply of resources, and that humanity is dependent onits environment.

Constitutional provisions

The Constitution, on a sensitive provision in Article 48A, states: "TheState shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country." This is a fundamental obligation of the state since its violation has fatal implicatins.

Article 51A(g) creates a fundamental duty in every individual to obey the mandates of environment and ecology. It follows that no project that damns environment should be permitted. Article 14 (social) economic equality), 21 (right to life), 48A and 51A(g) read together is a Constitutional code of functional imperatives.

The Silent Valley, which was vulnerable to deforestation on the bases of certain project proposals, was salvaged by the immunity that the Central Government gave it. No project can be executed if it imperils forests, rivers and wildlife Big dams are a threat to arboreal abundance. Cutting trees on large seals is evil; it spoils the soil and affects rainfall. The issue of power generation schemes required for hi-tech projects fall under the ban since they may adversely affect natural resources, agricultural progress and people's survival.

This problem has now come up sharply in Kerala, the Patharakadavu project is being ambiguously advocated by the Minister for power and opposed by an activist section that considers it to be deleterious ecologically.Any such scheme will inevitably involve substantial injury to the forest wealth of Palakkad and may defy the command fo the Constitutional code spelt out above. We should have Constitutional sensitivity to ecology. Pathrakadavu is adjacent to what has been preserved for so long as a rare asset of nature. The Chief Minister had, asLeader fo the Opposition, opposed this scheme proposed by the then United Democratic Front Government. He is now inclined to take the same negative view.

His resistance must prevail. There is no doubt that when a dam is constructed and ancillary works are undertaken the Silent Valley may have to suffer a new menace. Indeed, treasures such as the Silent Valley and the adjacent forests cannot be sacrificed for the sake of a power project.

Kerala has unexploited water sources, hills and valleys that can generate wind power, and a long coastline which, if explored prudently, may provide lasting sources of electrical energy. Once the Pathrakadavu project is taken up by contractors or even the Public Works Department, Silent Valley and the excellent natural forests will be in peril-whatever the Government may promise. The Central Government, with its inclination for privatisation, cannot be trusted with its opinion where public policy of presevation of forests is at stake. Rajaji, while he was Chief Minister of Madras, described the PWD as public enemy number one.

Today government are controlled to a considerable extent by powerful private corporations. Under no circumstances, therefore, should Pathrakadavu or other such dubious schemes that are constitutionally culpable be undertaken. Never be a traitor to the future, or be hostile to the ecological command of the Constitution.

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SUCCESS STORIES RELATED TO WOMEN EMPOWERMENT

- Lack of land, no deterrent to grow mushrooms
- Low investment, high income scheme for women
- Women, child development get a boost in Haryana
- Rosemary shows the way to keep wild animals at bay
- Backward Jharkhand forward in Muslim girl education
- When cashing in on young goats becomes kid stuff
- Women in this Maharashtra village own their super bazaar
- *xkeh.k efgyk, cu jgh g dke;kc dkjkckjh*
- Women Channel Water to Village

LACK OF LAND, NO DETERRENT TO GROW MUSHROOMS

Lal Muni Devi'snet profit in a year is Rs. 19,000 without any investment

The real success of agriculture lies not only in improving the lifestyle of small and marginal farmers but also upgrading and improving the lives of landless labourers who form the backbone of the sector.

Ms. Lal Muni Devi is one such landless labourer of Azad Nagar village on the out skirts of Bihar.she has been leading a life of poverty living in a thatched cowshed (making it her home) managing her family of six.

Poor labourers

Though not a farmer, Lal Muni and her family are among the hundreds of land less poor labourers who work for the local land owners.

All this changed when scientists from the Indian Council of Agricultural Research (ICAR) Complex for Eastern Region, Patna, Bihar, brought together 25 women from her village to form a Self Help Group (SHG), called Mahila Utthan Samiti and taught them to grow mushrooms.

"The method taught by the scientists appealed to me as it did not require anyland. Prior to this, I had never even heard of mushrooms till the scientists told me.

Ready market

"I then learnt to grow mushrooms (Oyster and milky white summer mushrooms variety),Both these varieties grow well in the dark and damp interiors of my house," she said. There is a market for them in the near by city and wheat straw is available inplenty. The mushroom spawns are readily available and not expensive. Lal Muni earns Rs. 50-70 from oyster mushroom at the rate of Rs. 8-10 per bag in addition to the meagre income from her family labour.

Good profit

"I used to work as farm labour since my childhood and now I am grateful to the scientists who taught me to earn my livelihood respectfully and independently. I learnt that I could grow mushrooms in my house and later found that they fetched a good profit too," she says with a broad smile. For

The Hindu, 06.12.07

the first two years, ICAR provided free seeds (called spawns) until the participants were able to generate their own income.

But from 2007 inaddition to the free seeds supplied by ICAR they started buying their own seeds (to increase income) at the rate of Rs.50 a kg.

One kg of seed yields 10-14 kg of mushrooms. the oyster variety sells for Rs.50-75 a kg during winter and insummer the milky white mushrooms fetch Rs.80-120 a kg, according to Dr. A.R. Khan, Principal Scientist, ICAR, Research Complex for Eastern Region, Bihar Veterinary Collage Patna. Muni Devi has been able to grow oyster mushrooms in155 bage and has been able to harvest about 210 kg and got a net profit of Rs. 10,500. She has also cultivated milky white mushrooms in95 bags and has harvested about 130 kg gaining a profit of Rs. 9,400 Her net profit from December 2006 to July 2007 from mushroom cultivation was Rs. 19,900 without any major investment.

Though half of the women quit the SHG after ICAR stopped supplying free seeds, many of them came back as the income from mushroom generation was too good for them to resist.

Self sufficient

"We want this SHG to become self sufficient before this mushroom project is to tally withdrawn from the area," he said. "Our future remains bleak after the ICAR people leave us at the end of the project," she said with some concern.

"Though a lot of government officials and foreign dignitaries have been visiting my village which is socially and economically backword, nobody has helped us indeveloping our skills further," she laments.

For more information readers can contact Dr.A.R. Khan, Principal Scientist, Indian Council of Agricultural ResearchComplex for Eastern Region, P.O., Bihar Veterinary College Patna-800014, phone: 0612-2223962, email:khan.patna@gmail.com, 09431421960.

LOW INVESTMENT, HIGH INCOME SCHEME FOR WOMEN

The SHG has earned more than Rs. 50,000 from sale of vermicompost

Unlike most other vocations, income from agriculture is not always steady. An unsteady market, fluctuating price and adverse climate can adversely affect farmers. Against this backdrop empowerment of farm-women is very important for very important for strengthening the economic security of the farming community.

No major investment

There are a number of agriculture based enterprises that can be practised by women, effectively utillzing the leisure time available to them. But it becomes important to select an enterprise which does not require any major investment.

A good example is Mrs. Lysamma Baby of Kozhikode district in Kerala and her team of three women who have become successful entrepreneurs in vermiculture technology.

All the tree women hailfrom poor families with a land holding of 10-70 cents and had to depend on their husbands, mainly worked as daily agricultural labourers earning about Rs. 90-100 per day.

Unassured income

With irregular work and an uncertain income, the ladies were finding it quite hard to manage their families.

"Being economically poor we were in the dark as to how to generate more income from an enterprise which would not have any major investments," said Mrs. Lysamma.

The women were intoroduced to the staff of the Krishi Vigyan Kendra (KVK) of the Indian Institute of Spices Research (IISR) by some beneficiary farmers in their village.

Field visits

The women were advised to undergo training in vermicompost technologies and were also taken for field visits to several successful vermicompost units inthe district, according to Dr.T.K. Jacob, Training Organiser.

Since the members were economically backward, they were asked to form a self-help group (SHG) for availing loan and other subsidies from the local Panchayat institutions. Accordingly a SHG named 'Nidhi" was formed.

A project on vermiculture was prepared on their behalf by the scientists, and the local Panchayat provided them with a loan of Rs.5,000 for starting a vermicompost unit. The members identified a common place in the land of Ms. Lysamma for construction of the unit.

The Hindu, 08

The group constructed 4 vermicompost tanks with ant wells around them. The tanks were provide with iron net frames on top to protect the worms from rats, lizards and birds.

A temporary thatched shed was also constructed over the tanks to cover and protect the tanks from rains.

The scientists gave on-site technical help for the construction of the tanks. The initial culture of earthworm species was supplied by the KVK.

Ms. Lysamma, the group leader who owned a single cow and a calf, agreed to supply the required cow dung for the unit. The unit became functional within 3 months.

Waste generation

The group members collected and gathered their own kitchen and farm wastes for the production of the compost.

Initially all the members worked together, and then decided to work in rotation. They spent 2-3 hours a day at the unit.

The first compost was ready within 60 days of release of the worms into the tank. They got more than 200 kg of compost in the first harvest.

The success of the unit was due to low investment and the women could work during their leisure time.

The group members also started small-scale cultivation of vegetables, banana etc. in the interspaces of coconut palms in their lands.

The group members share a portion of the vermicompost produced, for their own kitchen gardens, according to Dr. Jacob.

Dependance reduced

The members feel that the quality of the vegetables and banana produced utilizing vermicompost is superior and their dependence on the local market for vegetables has greatly reduced.

Two members of the group completely brought their land under organic farming applying only vermicompost.

The group started selling the excess compost at the rate of Rs. 8-10 per kg. The local demand for the compost is high and the group is not able to meet the demand.

Bank deposit

Ms. Lysamma says, "We feel proud as we have started generating our own income and presently we now have a deposit of more than Rs. 25,000 in the bank."

The group has so far realized a total income of Rs.53,514 from vermicompost alone in the past 2 years.

Readers can contact Ms.Lysamma Baby, Parambukattil House, Chempanoda post, Kozhikode, Kerala-673 528, and Dr. T.K. Jacob, Training Organiser, Krishi Vigyan Kendra, Peruvannamuzhi Post, Kozhikode, Kerala-673 528, e-mail:jacobtk@spices.res.in, Phone: 0496-2662372.

WOMEN, CHILD DEVELOPMENT GET A BOOST IN HARYANA

ICDS decentralised and made community-driven

Special Correspondent took several initiatives in 2007 like constitution of village level committees of women and their convergence with Panchatati Raj Institutions (PRIs), formation of Sakashar Mahila Samooh (SMS) and facility of micro-credit for SMS from Rashtriya Mahila Kosh (RMK).

It also launched schemes like construction of Mahila Shakti Sadans, incentive awards for improvement in sex ratio and educational loans for girls and women for higher education.

In a significant move, the Integrated Child Development Services (ICDS) Programme was decentralized and made community driven.

Village committees

The Government set up 6,157 village level Sub-Committees of women under the overall supervision of Gram Panchayats to facilitate implementation of programmes pertaining to development of women children.

In another major initiative, it was decided to dispense with centralized system of procuring the ready to eat food items for the beneficiaries of ICD and entrust the responsibility of preparation of food items to Women Self Groups or Mother's Groups. This generated employment for about 75,000 rural women.

The Government enhanced the financial norms fromRs. 2 to Rs. 3 per day per child and Rs5 for severely malnourished children per day and fromRs.2.50 to Rs.5 per day per mother and adolescent girl so that protein and calories' requirements could be ensured to all the beneficiaries. These rates are highest in the country, an official spokesman said here on Sunday.

6,000 Mahila Samoohs

It also set up about 6,000 "Sakshar Mahila Samoohs" (SMS), a group of educated women in every village, to lend the necessary resource support to the Gram Panchayat and its sub-committee for effective discharge of the functions assigned to them. The SMS generated awareness on key issues like sex ratio, literacy, universalization of elmentary education, health and nutrition,

The Hindu, 31.12.07

opportunities for economic empowerment for women, hygiene, sanitation and environment and schemes run by the Government for women, girls, children and the village community.

The Spokesman added that UNICEF had agreed to provide technical support to the State Government in its multi-faceted endeavours to empower women and the girl child, formulation of a starategy to address issues of female foeticide and to explore private sector participation in areas that could be beneficial in increasing resources available to children.

It was a major achievement that the Rashtriya Mahila Kosh (RMK) agreed to recognize SMS as an eligible NGO for the purpose of promoting micro credit but also trained their members. Interestingly, NABARD has also shown interest ot use SMS for microcredit, he added.

Chief Minister Bhupinder Singh Hooda announced that Mahila Chaupals, rechristened as Mahila Shakti Sadans,would be constructed in all villages in a phased manner. These would be equipped with library, furniture, computer and stationery to make them self-sufficient resource centre to address gender needs of the village.

Loan scheme

The Haryana women Development Corparation benefitted about 2,800 women under its loan scheme in 2007 by enabling lthem to set up their own enterprises.And to promote and encourage higher education among girls, the Corporation started giving Education Loans to girls and women at cheaper interest reates.

It was decided that districts showing improvement in declinig sex ratio and securing first three positions in the State would be given awards at district level every year. And to reduce the number of malnourished children in Haryana, Nutrition Awards were instituted at destrict level. Furthermore, to encourage rural girls to go in for higher education, 384 girls were conferred Rural Adolescent Girls Awards.

ROSEMARY SHOWS THEW AY TO KEEP WILD ANIMALS AT BAY

Puttiyamma earned more than Rs.30,000 in three years from half an acre

Experiencing unexpected losses in agriculture due to adverse climate or past attack is a common feature in the life of farmers. Even the best technologies fail whenthey have ot gamble with adverse climate.

The problem is all the more acute for those living in hilly regions bordering reserve forest areas.

Crop and lifeloss

Bacause apart from the vagaries of climate, farmers also have to keep track of movements of wild animals in their fields which cause sudden and disastrous loss both to the crops and sometimes to human lives.

Mrs. Puttiyamma, is a tribal lady farmerof Bargur hills in Erode district of Tamil Nadu who has successfully proved that all the above stated facts are not a deterent when it comes to growing crops in the hills and successfully marketing them.

Casual Jobs

Mrs. Puttiyamma owns about 4 acres of land and is presently growing Rosemary in about half an acre. "I was growing ragi and double beans and reaped only a minimum margin. With no alternative I was forced to seek othe casual jobs to meet my family's basic needs.

"It was then that I heard from sources in my village about MYRADA KVK (My-sore Resettlement and Development Agency Krishi Vigyan Kendra) which has been encouraging farmers in our area to grow Rosemary (an aromatic herb) and are also helping them to market the produce through the Rosemary Group (created mainly for farmers growing Rosemary)," she explained.

She has joined in the Rosemary Growers Group three years ago and started cultivating the crop. Rosemary thrives well both in irrigated and dry land conditions and is not disturbed and grazed by any wild animal because of its aroma.

As it is a perennial crop there is no need for seeds and land preparation every year and the crop provides a stable income.

The Hindu, 29.11.07

Income details

Mrs. Puttitamma has so far harvested about 2,898 kh of fresh leaves and has earned about Rs. 11.00 per kg of fresh leaves in the past three years.

"I have so far earned about Rs.31,878 in 3 years from 1/2 an acre of land under rainfed condition whereas the returns from rest 3.5 acres of Ragi crop and beans have been only Rs. 17,500. My income kindled the interest of other farmers who also stated growing the crop," she said.

Oil extraction unit

As there has been an increase in the number of farmers who have taken up Rosemary cultivation the District Rural Development Agency, Erode, has funded for establishment of an oil extraction unit nearby.

The unit has reduced the herbage loss during transport and has been able to increase their income to about Rs.2,000 per acre a besides providing employment to the rural youth.

The tribles of this region, were mainly growing crops such as ragi, double beans, turmeric and some fruit varieties. But due to constant incursion by wild animals from the bordering reserve forests many of them were not able to succeed in their farming operation, Programme Co-ordinator, Myrada Krishi Vigyan Kendra.

Aromatic crops

“When some of the tribals approached us for guidance our team visited the area and after careful study realized that aromatic crops can be safely grown there as the climate is cool and favorable and also the fragrance emanating from these aromatic plants will keep the wild animals at bay,” he said.

The tribals were made to interact with officials of the HOPE IN NILGRIS organization in Udhagamandalam who were already pioneers in the cultivation and promotion of Rosemary crop.

After the exposure visit, the farmers showed more interest and involvement in the cultivation of Rosemary. Mr. Puttiyamma was conferred the ‘Velanmai Chemmal’ award by the TNAU in 2006.

At present more than 100 acres of the hilly region have come under this crop cultivation. Information and training to the tribals were arranged by Myrada-KVK.

Readers can contact P.Al-agesan, Programme Co-ordinator, Myrada Krishi Vigyan Kendra, No-57-Bharathi Street, Gobichettipalayam 638 452, Erode district Tamil Nadu, e-mail: myradakvd@dataone.in, website: www.myradakvk.org, Phone.: 04285 226694, 226695.

BACKWARD JHARKHAND FORWARD IN MUSLIM GIRL EDUCATION

JHARKHAND IS witnessing quiet revolution in the education of Muslim girls.

The stupendous progress is not only in the manifold increase in enrollment rates in schools across the state but also the quality of education the girls are getting from them.

Most of the girls are from economically poor background. But the recent matriculation results have shown that it has not prevented them from leaving their mark on the state's educational map.

Saba Ferdous (15) studied in the largely unrecognized and unaided Idrisia Tanzeem Urdu High School in Hindpiri. She recently made headlines for her grades, scoring 86 per cent in her matriculation exams.

Her feat was significant, not in a small measure, for her economic background as well. Her father runs a *pan* shop and barely makes ends meet. Saba is one of the dozen poor Muslim girls who scored distinction in their exam results this year.

The co-educational Inrisia School has 1,600 students. Of them, 70 per cent are girls. "The dropout of girl students is much less than that of boys in our school," said a senior teacher, Nilu Azam.

Jharkhand High Court lawyer, Faizurrahman, who is actively involved in the community's education can leak to.

The enrollment rates have uniformly increased across schools of different categories-government as well as minority schools and also the better known public schools. "Many Muslim girls the even studying in Christian minority schools such as the Ursuline Convent, St. Ann's Convent and the Bethesda School" Faizurrahman says. "The enrollment of Muslim girls from economically poor back grounds in government schools has gone up by over 50 per cent in the last few years," he adds.

Over 10,000 Muslim girls are presently studying in different schools in Ranchi cit y, almost double the number five years back.

Sunday Hindustan Times, 05.08.07

A senior member of the Committee, under which the Rayeen Girls' High School on Lake Road is run, Mohammad Muqeem, said the school has registered about 30 per cent increase in enrollment from classes I to X.

The Ranchi District Education Office (DEO), informs that there were 390 students from class VII to X in the 2006-07 academic session. "The enrollment has increased by about 20 percent this year," a Rayeen Committee number claims.

There are at present, roughly 1,000 students in the two, fully government-aided Muslim girl's high schools in Ranchi. Besides Rayeen, the other school is the Ismailiya Momin Girl's High School in Doranda.

Ismiliya had 364 student studying for the session 2006-07 according to the DEO.

The Iraqia Girl's High School (un-aided), across the bus Church Road, has 500 student right from the primary to the secondary level.

It has the distinction of registering 100 per cent results in matriculation exams, with over 9 per cent students securing the school's Managing Committee says.

WHEN CASHING IN ON YOUNG GOATS BECOMES KID STUFF

She has won the 'Best Woman Farmer' award from the University

Integrated farming has always been advised by agricultural scientists especially for small scale farmers across the country.

As the average land holding is small in countries such as India, the resource-inadequate farmers need to be as sure of a regular income through economically viable and socially acceptable farm enterprises which will complement their cropping activity through crop and livestock integration, according to Dr. C. Ramasmy, Vice Chancellor of the Tamil Nadu Agricultural A University (TNAU) Coimbatore, Tamil Nadu.

Gaining popularity

This type of farming is fast gaining popularity in several village across Tamil Nadu as farmers are now more aware that by integrating animal husbandry along a with their doubled, and if there is any loss due to crop failure, the impact is not so severe unlike for farmers who practise monocrops, explained Dr. E. Vadivel, Director of Extension Education of the Universit y.

Releasing importance

Compared to the last 5-7 years there are more farmers in the South who are slowly releasing the importance of integrated farming and have been successful trained in several animal husbandry practices such as cattle, goat, pig and poultry rearing by the several Krishi Vigyan Kendras (KVKs).

Mrs. S.Saradhamani is one such progressive lady farmer of Perianiackenpalayam village in Coimbatore District.

With hardly 2-3 acres, Saradhamani has been successfully integrating goat, cattle rearing. Vermicompost manufacturing and growing a number of crop varieties such as sunflower, vegetables and high yielding fodder grass varieties.

Effective recycling

"Her farm was selected as one of the model farms by our University for conducting farmers' participatory research programs on integrated farming systems in low external input sustainable environment" said, Prof. Rm. Vijayaraghavan, Head, KVK, Coimbatore.

The Hindu, 18.10.07

He also added that effective recycling of farm residues and waste is possible when complementary farm enterprises are judiciously integrated.

A goat shed was constructed on her farm with financial assistance from the Universit y, which also supplied her with about 5 female and 1 male Tellicherry goats.

Tellicherry goats are mainly reared for mutton purposes, and stal feeding is highly suitable for this breed. “In about 3 years I have earned about Rs. 75,000 from the sale of goats alone,” she said.

Why goat rearing?

But why did she prefer to pay more attention to goat rearing when cattle would have been a better option? “Rearing goats is relatively easier compared to cattle as the expenditure involved in goat rearing is less when compared to cattle.

“The feed for my animals is mostly grown in my field. In fact spend about only Rs. 2 per day as feed cost for on animal.

“A female goat gives birth to 4 kids in a year and the kids are sold for Rs, 2,000 each when they attain 3-4 months of age.

“Also, selling the goats is easy when compared to cattle as there are no middlemen involved, as farmers approach me directly if they need any animals. The cost factor, is small when compared to that of cattle.

Farmers can easily pay the small amount for buying the goat kids unlike that of cattle which costs several thousands. In short, goats are similar to ATM cards which can be used to get money in times of emergenc y,” she said.

More beneficial

Similarly like cattle dung the dung of goats can also used for making vermicomplst.

The vermicompost made from goat dung has been found to be more beneficial when compared to that of cattle, as the crops turn dark green in color in 2-3 days the vermicompost made from months to act on the plants.

Mrs. Saradhamani has woman the ‘Best woman Farmer’ award from the University and is also the Farmers Discussion Group Convener of KVK of TNAU in Coimbatore.

Readers can contact Mrs. S.Saradhamani at Chinnamathampalayam, Perianackenpalayam Taluk, Coimbatore, Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu-641-003,email:profvijayaraghavan@yahoo.com moblie: 9894741144.

WOMEN IN THIS MAHARASHTRA VILLAGE OWN THEIR SUPER BAZAAR

LAST year, they had successfully imposed ban on the sale of liquor by ransacking liquor dens in this village, located some 40 km from Solapur city. Now, they have come up with a business model, setting an example for the entire state to follow. The women of Sadepur village in South Solapur taluka have introduced the concept of village Super Bazar (VSB), providing all the essential commodities under one roof. The villagers are both the customers and the owners of the VSB, as every villager is a member of the VSB committee. The women of run the bazaar and all the 11 women directors of the VSB are heads of self-help groups.

As NGO, Jai-Jui, has helped them in implementing the concept. “We have observed that villagers face difficulties in purchasing essential commodities. They have to travel long distances to reach a market and also spend more money. In a bid to provide a solution to the problem, we have started the VSB and the concept has worked,” claimed Jai-Jui president Praniti Shinde.

First, the NGO conducted a survey in the village. They involved the entire population of Sadepur by making them active members of the VSB and then in vested Rs.20,000 as the capital amount which bubbled to Rs.50,000 in barely two months. As the village has 500 acres of well-irrigated land and gets bumper crop of banana, grape and sugar cane, thanks to the Bhima river, many believe that the money generated will be utilized in the village itself,

“Earlier, I had to wait for the weekly bazaar to purchase commodities and it was 20 km away from my house. Today, I save both money and time. Most importantl y, I am also an owner of the bazaar, just like other villagers,” said Indumati Deokate.

Praniti said the VSB has brought about unity among the villagers, boosted social attachment, helped in generating employment, and also made the villagers self reliant to some extent. They are all set to introduce such bazaars in remote areas of the district and across the state.

The Indian Express, 05.02.08

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Navbharat Times, 18.06.07

WOMEN CHANNEL WATER TO VILLAGE

EVERYDAY WHEN Kamala Hentala trudged along a 2-km rocky terrain to a stream high on a hill to fetch water, she would think about a better alternative.

Kamala's village in Orissa's Malkangirl is in one of India's 10 poorest districts, according to the Planning Commission.To reach Mahupadar, her village, it is a 12-km walk from the Tarlakote gram panchayat, a remote area with little infrastructure.

At least 800 villagers in Malkangiri district were displaced form the area now submerged under the waters of the Machhkunda project. But water is the most precious commodity residents could think of.

Kamala along with other women would walk up the forest path to collect water from the stream escorted by their men armed with bows and arrows because of the lurking danger of wild animal attacks. Finally Kamala took the initiative and convened a meeting of women to find a way out. "We decided to bring water from the steam to our villages by setting up hollow bamboo poles," she said.

More than a hundred women from Mahupadar and its neighbouring villages started working on joining hollow bamboo poles and polishing them for a water pipeline.The day they had set up the 'pipeline' and water flowed into the villages it was time to celebrate.

However, soon they found out that during summer the bamboo pipes could not supply enough water, though the stream had sufficient water.

The women then started work on the second phase of their project. They collected dry logs and carved them into semi-circular units to direct the flow of water from the stream into the pipeline and constructed reservoirs in the village for storage. To top it up they connected the reservoirs to their homes with the bamboo pipes.

"These women have worked wonders without our help," said Balaram Hentala, village head of Mahupadar. The villagers, thanks to their women brigade, now not only have clean drinking water but enough to water the fields. And have been growing paddes and vegetables.

Now, they have started self-help group to generate enough resources to upgrade their water project by saving a handful of rice and a part of their income everyday. They know how to dream and hope that some day they would have their own health and education facilities in the village.

Sunday Hindustan Times, 09.03.08

SUCCESS STORIES RELATED TO
ENERGY CONSERVATION

- lkyj ,uthd tfj, cuxk iVky
- vc dk;y lHkh cuxh fctyh
- Haryana makes big strides in the field of renewable energy
- Govt. sleeping over order on solar heating system
- Cow to churn out petrol: A 12th grader discovery
- Why jatropha has failed to take off
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- Food shortage likely in global rush for biofuel: U.N.
- Soon, watermills will light up village in Jammu-Kashmir
- Biofuel-meeting the needs of dryland farmers
- A burst of energy
- India shines at Green Oscars
- Farming For Energy

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Navbharat Times, 21.12.07

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HARYANA MAKES BIG STRIDES IN THE FIELD OF RENEWABLE ENERGY

CHANDIGHRH: The year 2007 withnessed some significant developments in Haryana in the field of frenewable energy which included an initiative to generate 697.70 MW of power with private investment of Rs.3,278 crores, lauch of a five-year action plan, and implementation of other measures to conserve electricit y.

An official note issued here on Wednesday said that in 2007 the President presented three National Awards to the State Department of RenewableEnergy and HAREDA for implementation of Solar Cooker Programme, Solar Urban Programme, Solar Urban Programme and SPV Demonstration Programme. The Union Power Ministry also apreciated the initiative of the Department to conserve electrical energ y.

The Department signed MoUs in the presence of Chief Minister Bhupinder Singh Hooda in February with 10 firm to set up 23 biomass, three small hydro and four wind energy-based power projects to generate 697.70 MW with a private investment of Rs. 3,278 crore.

Mr. Hooda also launched a Rs.18.39-crore five-year action plan for implementation of the Energy Conservation Programme.

The official note said Haryana is the first State in the country to issue a comprehensive notification for mandatory of solar water heating systems, mandatory use of energy-saving compact fluorescent lamps (CFLs) and 28 Watt tube-lights in Government or Government aided buildings and mandatory use of ISI-marked motor pump sets.

An innovative project to run the compute labs with solar energy by installing 21 'SPV power plants of 207 KW capacity each in 21 schools of Rohtak district is being implemented after approval from the Union Government.

As a Promotional and demand side management measure, the State Government had decided to provide a rebate in the electricity bills to users of solar water heating systems.

Another new scheme was launched to provide 100 per cent financial assistance for installation of solar water heating systems in non-profit registered social institutions like orphanages, old age homes, working women's hostels, juvenile home, nature cate cermets, creches, nari niketans and hostels for students belonging to Scheduled Castes and other weaker sections of societ y.

The Hindu, 28.12.07

GOVT. SLEEPING OVER ORDER ON SOLAR HEATING SYSTEM

NEW DELHI, Sept. 17: Consumers cannot be blamed when the authorities them selves do not follow orders. A notification was issued by the Delhi government on 28 September 2006, stating that NDMC shall amend their building by-laws to make the use of solar heating systems mandatory, within six months of its issuance. However, till date, none of the bodies have amended at their laws, nor has the Delhi government tried to unenforced the notice on the said bodies.

The notice says that the designated agency should amend its building by-laws within six months to make solar heating systems mandatory in industries, hospitals, nursing homes, hotels, motels, banquet halls, jail barracks, large canteens and all residential buildings built on a plot having an area of 500 sq m or more.

It further said that the government shall a designate a nodal officer to monitor and report the progress in its enforcement, both to the agency and government. The progress report shall be sent by the nodal officer on a quarterly basis to the designated agency.

The general manager, Energy Efficiency and Renewal Energy Management Centre, Mr. Satish Sabharwal said, “The sex-month deadling has already expired but no amendments have been made by MCK, NDMC and the Delhi Police. We cannot ask people to install solar heating systems till these agencies amend their laws. In the absence of the basic steps, the implementation of the whole idea is not possible, We have also found that people are apprehensive towards installing solar heating systems. To convince people, it is very important for agencies to amend their laws.”

He added, “The main purpose is to motivate people to use alternative forms of energy, so as to conserve non-renewable energ y.

The Statesman , 18.09.07

COW TO CHURN OUT PETROL: A 12TH GRADER DISCOVERY

NEW DELHI, March 10-A twelfth standard pass, self-claimed scientist earning livelihood from a general store in Kalahandi, Orissa, is running from pillar to post to convince the authorities that he has developed a "formula" to produce synthetic petrol and diesel from cow's urine. But experts from research bodies have brushed off his claims.

Forty-three-year-old Praveen Jain claims that his "formula" of "synthetic petrol" requires only a kind of instrument equipped with a Water Heating Mixture, Magnet Cover steal Box, Thermocol Layer and acid. "When one litre of cow's urine undergoes the devised method, the same qauantity of petrol is obtained. If it is done on large scale, the petrol will cost around Rs 10 per litre," claimed Mr. Jain.

Various environmentalists and researchers have rubbished the claim and declined to comment. However, Executive Director, Research and Development, Indian Oil Corporation, Mr. Rakesh Malhotra when contacted said prime facie it sounds surprising. However, it is premature to say anything on his research until we get details of his formula." Jain has been working on the project for the last five years. He feels that if he gets government support of Rs 80,000 crore, the amount can be recovered within five years. However, he has not got even a single chance to demonstrate the mechanism which he has developed. "I have written to President Dr. APJ Abdul Kalam, Prime Minister, Dr. Manmohan singh and Chhattesgarh CM and Governor several times But unfortunately, I have not got any response from any of them. I am not being given even a chance to demonstrate it," said Mr. Jain.

Frustrated over the 'low-key response' from the union government, he has approached the governments of a few developed countries. "I have approached United States, British and African governments and have received positive response from them. But the problem is that I want to work in my own country for the benefit of my own people," he lamented.

Mr. Jain, who was in a general merchant business, Rs5 lake loan from a bank to work on the project. He has even successfully driven a motorbike up to 15 km with this "synthetic petrol." "Neither I have money nor equipment to work on the project. To start with, if an amount of Rs. 15 crore is invested, I can prove the worth of the project," claimed Mr. Jain.

The Sunday Statesman, 11.03.07

WHY JATROPHA HASF AILED TO TAKE OFF

JATROPHA, A humble weed of the tropics, long ignored for any of its potentialities has lately come to be synonymous with a plethora options that tantalisingly embody all desirable virtrues and shun all dreaded negatives in one fell swoop.

Alternative biofuel, renewable energy, sustainable rural agriculture, crop for the aridtropics, clean development mechanism, carbon credits, rejuvenation of rural land scape, independence from imported crude, forex savings, clean-green fuel and several other epithets have been showered liberally to kindle an interest in this forgotten weed.

Merits every adjective

Strangely, jatropha merits every one of these adjectives in a given context. Yet, efforts in converting this weed into a commercial crop must necessarily precede for any of these descriptors to take effect.

There are many myths that abound about this plant: that it thrives in the most despite of soils, requires hardly any water, is highly drought resistant and once planted, being a perennial, needs no further attention.

From my research and travel in all continents where this plant is seen, these descriptors hold good to the weed.

But that can hardly be extended to reflect ideal conditions of cultivation when jatropha is to be raised as a crop meant for commercial profit.

Fuelled by such crass misinformation, I have witnessed many a farmer in India, Africa and South East Asia scoop out soil from a foot deep pit, about the width of a fist, stuff a young seedling of jatropha unit, occasionally pour a mug of water and wait a miracle to happen! Alas, their dream of reaping a bnonanza from such misadventure has been unfailingly shattered.

The accompanying demonising the species has followed, equally unfailingl y.

For the crop to succeed, several measures have to be taken. These include a detailed regime of soil testing, suitable amilioration and preparation of pits of appropriate dimension.

The Hindu, 15.03.07

Nutritional needs

To cater to its nutritional needs basal doses of macronutrients, backfill with a studied mix of compost, soil and sand must be provided. Adequate watering in the non-rainy season, top-dressing with nutrients, canopy pruning, hormonal spray, apiary to promote pollination, inter-cropping during the initial years to foster sustainability are also esential. Research and development of high yielding variety with the desired fatty acid profile, crop agronomy and best combinations of intercropping must necessarily precede largescale cultivation of jatropha.

Develoment of varieties that produce non-toxic deoiled cake that can be fed to farm animals is critical to augment the revenue potential of this crop. Farming must be backed by prudent marketing mechanisms for the crop to succeed.

Presently, R & D in varietal development is in its infancy in all parts of the world. Any trash gets sold as seed for want of arganised seed production agencies.

Small farmers cultivating fragmented land holdings less than a hectare of land hardly qualify to invest in this crop that entails a gestation of over three years before commercial yields materialise.

Urgent government intervention alone can help unlock the vast potential that jatropha holds. Stacked against the staggering statistic of 52.33 million metric tones of petro-diesel required in the country for the year 2006-07, a mere one per cent blend with jatropha-derived bio-diesel would mandate a cultivation of the crop in 627,960 acres of land!

Given that it takes three years to produce an economic yield of 2,2500 kg per acre it would ratchet a cumulative cost of Rs.628 crore for mere cultivation; no mean number that individual farmers can attempt.

Pragmatic alternatives

Therefore, it needs to be treated with the seriousness that it deserves and corporate entities equipped to handle large projects need necessarily be roped in with suitable incentives.

The cost of crushing the seed and its further refining to produce the one percent blend is yet another staggering number!

In the final analysis, other viable options as tapping into offshore resources and importing the finished products, whether bio-diesel or bioethanol, offer pragmatic alternatives that are economically viable too.

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Punjab Kesari, 12.06.07

FOOD SHORTAGE LIKELY IN GLOBAL RUSH FOR BIOFUEL: U.N.

Winners and losers in multi-billion dollar industry-small farmers at risk.

THE GLOBAL rush to switch from oil to energy derived from plants wild drive deforestation, push small farmers off the land, and lead to serious food shortages and increased poverty unless carefully menage, says the most comprehensive survey yet completed of energy crops.

The United Nations report, compiled by all 30 of the world organization's agencies, points to crops like palm oil, maize, sugarcane, soya, and jatropha-Rich countries want to see these extensively grown for fuel as a way to reduce their climate changing emissions. Their production could help stabilize the price of oil, open to new markets and lead to higher commodity prices for the poor. But the U.N. urges governments to beware their human and environmental impacts, some of which could have irreversible consequences.

The report, which predicts winners and losers, will be studied carefully by the emerging mullti-billion dollar a year biofuel industry, which wants to provide as much as 25 per cent of the world's energy within 20 years.

Last year, more than a third of the entire U.S. maize crop went to ethanol for fuel, a 48 per cent increase on 2005, and Brazil and China grew the crops on nearly 50 million acres. The European Union has said that 10 per cent of all fuel must come from biofuels by 2020. Biofuels can be used in place of petrol and diesel and can play a part in reducing emissions from transport.

Positives too

On the positive side, the U.N. says that the crops have the potential to reduce and stabilise the price of oil, which could be very beneficial to poor countries. But it acknowledges that forests are already being felled to provide the land to grow vast plantations of palm oil trees. Environment groups argue strongly that this is catastrophic for the climate, and potentially devastating in Indonesia.

The U.N warns: "Where crops are grown for energy purposes the use of large scale cropping could lead to significant scale cropping could lead to significant biodiversity loss, soil erosion, and

The Hindu, 10.05.07

nutrient leaching. Even varied crops could have negative impacts if they replace wild forests or grasslands." But the survey's finding are mixed on whether the crops will benefit or penalise poor countries, where most of the crops are expected to be grown in future. one school of thought argues they will take the best land, which will increase global food prices. This could benefit some farmers but penalise others and also increase the cost of emergency food aid.

"Expanded production [of biofuel crops] adds uncertainty. It could also increase the volatility of food prices with negative food security implications," says the report that was complied by U.N.-Energy.-(c)Guardian Newspapers Limited 2007

SOON, WATERMILLS WILL LIGHT UP VILLAGE IN JAMMU-KASHMIR

Government has decided to upgrade the traditional water miles of the state for power generation in remote areas by involving villagers. Of the close to 5,00,000 watermills, the Army had upgraded several as part of its Sadhbhavana project.

Deputy Commissioners have been asked to furnish the number of watermills in their districts, said sources. The information will be used to create a directory of watermills which could be upgraded for power generation.

As part of its Integrated Rural Energy Project (IREP), the government is also planning to set up energy committees in select areas which will be managed by locals.

IREP Director T Angchuk said after the successful upgrade of watermills in Jammu's Sudhmahadev and Budgam in Kashmir, they have decided to take up the project on a much larger scale. Rs. 20 lake has been earmarked for the first phase of the project this year. After the deputy commissioners concerned furnish a list of watermills in their respective destricts, the State Government will get a rough idea of the hydel power potential of these watermill to 2-5 KW capacity and each such watermill caters to power requirements of nearly 15-20 households.

"Upgrading will greatly increase the output of each mill and add to the income of families which own them. This will also reduce their dependence on imported technology and fossil fuels," he said. The termills across the state have a collective capacity of producing 2500 MW of power, assuming that each upgraded unit generates around 5 KW. Angchuk said a nominal fee will be charged from villagers which will be used for the up-keep of these watermills.

The Indian Express, 12.06.07

BIOFUEL-MEETING THE NEEDS OF DRYLAND FARMERS

The project provides livelihood and food security to landless ryots

Soaring prices of fossil-fuels and environmental pollution associated with their have resulted in an increase worldwide interest in the production and use of bio-fuel. The International Crops Research Institute for the Seme-Arid Tropics (ICRISAT) Patancheru in Anndhra Pradesh, is playing a major role in bringing poor and marginal dryland farmers in to the global biofuel revolution without compromising on food securit y.

Innovative research

Its innovative research on biodiesel from pongamia and jatropha plants, provides livelihood and food security to a number of ryots while reducing the dependence on fossil fuels.

Both Jatropha and Pongamia meet the main needs of dryland farmers, as they require little water can with stand stress and are inexpensive to cultivate, according to Dr. Suhas P. Wani, Prinicipal Scientist and Regional Theme Co-ordinator, ICRIS AT.

ICRISATs research on biodiesel from pongamia and jatropha crops is not only ensuring energy, livelihood and food security to these dryland farmers, but also reduces the use of fossil fuels, which in turn can help in mitigating climate change, according to him.

Develop partnerships

The institute is working with governments and industry leaders to develop partnerships that can result in economic benefit for the marginal farmers of th semi-arid tropics, even while retaining the strong economic competitiveness for the industr y.

The idea is to develop partnerships that link ICRISAT's innovative research with farmers and markets "We call this our pro-poor biofuels initiative for the dryland farmers without compromising on food security," says Dr. William Dar, director General of ICRIS AT.

The path to success began in 2005 when small and causal farm laborers, were identified by ECRISAT for linking them with the global bio-fuel revolution, which has currently taken Andhra Pradesh by storm.

The Hindu, 09.08.07

"These people are not landlords or ryots with large holdings. All of them are small-scale laborers, with some of them having only 30-50 cents of barren land," said Dr. Dar.

About 200 farmers were selected from Velchal and Kothllapur villages and asked to farm 15 groups. Experts identified about 140 ha and 160 hectares of wastelands in the nearby areas.

Sapling procurement

With the District Collector's Permission, the eight groups, with technical inputs from ICRIS AT, started growing jatropha and pongamia. Plant saplings were procured from women self help groups (SHGs) in Kothapally village, the Forest Department and ICRIS AT nurseries.

The soil where the crope our, rocky and unsuitable for any crop cultivation. Wild thorny bushes were occupying the entire area. Jatropha and pongamia were planted after removing the thorny bushes. Jatropha was planted in straight rows at a spacing of 2x2 mts and after every 50 rows of Jatropha one row of Pongamia was planted at a spacing of 4x4 mts.

Soil fertility

About 20 kg of urea and 10 gm of DAP (Diammonium Phosphate) were applied as fertilizer to each plant. Small pits were also dug in between the plant rows and dry weeds and grass were constantly mulched into the pits to improve the soil fertilit y.

The pits also served as efficient water harvesters during monsoon. In Welchal village, intercrops such as pearl millet, pigeon pea and castor were also grown by the laborers.

With fuel price increasing globally there is a demand for bio-diesel from pongamia and jatropha. We believe that this provides a wonderful opportunity for dryland farmers to get more money from their farms and wastelands explained Dr. Dar.

"This project was mainly intended to develop a sense of ownership among the laborers so that they work for the development of government wastelands.

The unskilled laborers took care of the plants as their own. All the groups were given complete rights to harvest the jatropha and pongamia trees," said Dr. Wani. Readers can contact Dr. Suhas P. Wani, Principal Scientist and Regional. Theme Co-ordinator, ICRIS AT, Patancheru, And hra Pradesh-502-324, imail:swani@cgiar.org, Phone: 040-3071-3466 and 3071-3071 (extn) 2466.

A BURST OF ENERGY

LOOKING AHEAD:India must revise its policy on producing alternative transport fuels

WHEN OIL prices suddenly shot up in 2004 from the earlier $ 20 a barrel to $ 50 and then $ 65, it did not take long for their world to realize that the era of cheap oil had ended, that global oil production would peak at the latest by the middle of the next decade while demand continued to rise, and that 80 per cent of the oil in the earth's crust would be exhausted by 2040. It could no longer, therefore, postpone the shift to other energy sources. What makes the impending shift far more difficult than the two that have precede it-from wind and water power to coal, and from coal to oil-is that there is no single cleaner and more concentrated energy source to shift to. The world is therefore, rife with experiments and each country is looking for solutions that best suit its natural endowment and needs.

India is no exception, with large, still untapped, reserves of coal, our planners know that the immediate need is for alternative transport fuels. But to meet it, they are on the verge of adopting a strategy that will not only never make India self-sufficient in transport fuels, but miss a once in-an-epoch opportunity to build an energy economy that will at the same time, solve most of the social, economic and environmental problems that have increasingly be devilled our developmental effort.

The goal that the government has adopted is to meet 25 per cent of India's energy needs from renewable by 2030. To do this, it intends, in the line with 5 per cent of ethanol and to replace a large part of high speed diesel with bio-diesel. The gasoline target is already within reach. The 400 million liters of ethanol needed to meet it is less than a third of the capacity of the 122 ethanol plants that have so far been set up Oil companies have so far been reluctant to switch from MTBE (Methy1 Tetra Buty1 Ether) to ethanol as an octane booster because they are not sure that its supply will be uninterrupted. But the continuing rise in oil prices is dissolving their inhibitions.

But it is the prospect of producing bio-diesel, from a plant called Jatropha, that has galvanised the government. The technical and economic feasibility of the new fuel has been established and

Hindustan Times, 04.07.07

the government has committed itself to planting 30 million hectares of waste-land with Jatropha to produce 60 million tones of bio-diesel a year in 2030.

This strategy has already begun to attract the interest of private investors, for there are millions of factures of land to be brought under cultivation, technologies to be level opened and proven and plants to be built. Once they make a financial commitment, the opportunity to revise the policy will disappea r. And revised it must be for it suffers from two drawbacks. First, even if successful, it cannot conceivably meet more than a small part of our needs. By 2030, the demand for diesel will have risen from 40 to about 130 million tones and for gasoline from 8.65 to about 35 million tones. Ethanol will meet only 1.75 million tones of the need. India will, therefore, still need to import an additional 55 million tonnes of transport fuels.

Second, since ethanol can only be mass produced at present from food crops, even the six-fold increase introduction that the governments modest programme envisages will require the diversion of a large portion of land that is currently feeding people to feeding machines. If sugarcane remains the main source, more than 10 million hectares may need to be diverted. Other crops like maize, sugar beet and sorghum could need more.

The truth is that Barazt can base its transport economy on ethanol because it can bring millions of acres of virgin land under sugarcane. Making ethanol from food crops could prove a boon to the EU and the US since it would enable them to reduce their massive subsidies to farmers. But in India, even our tepid programme could prove a human disaster.

The huge power of the farm lobby in the West, and our dependence on it for ideas and technology, may be the reason for the resounding silence that surrounds that other clean transport fuel, methanol. While the technology for producing ethanol from non-food plant cellulose (e.g. wood, leaves, bagasse or straw) has still to be developed and proved economically valuable, the technology for producing methanol from wood is more than two centuries old. In recent decades, it has been adapted in pilot and semi-commercial plants to use a wide variety of biomass fuels at extraordinarily high levels of efficienc y. These have brought down the cost of producing methanol to well below the cost of an equivalent quantity of gasoline.

India produces approximately 200 million tonnes of bagasse and unequal amount of paddy straw and rice husk (equivalent in energy terms to about 150 million tonnes of bagasse) every year. These agricultural and industrial wastes are capable of producing cars. In energy terms, this is equivalent to about 500 million tonnes of gasoline and slightly less of diesel. That is about three times the projected transport fuel needs of the country in 2030.

However, it would be short-sighted to view a switch to methanol only through the prism of four energy needs. If agricultural residues and wastes acquire a market value, every farmer in the country will become better off. If cotton farmers could sell their stalks in addition to their bottom, it would provide an additional stable income of several thousands of rupees a hectare.

But these would be only the initial benefits. In the last 60 years, we have denuded or severely degraded half of the 76 m Ha of forest we inherited at Independence. Of this 12.6m. Ha has been totally denuded and another 25 million Ha. Has lost more than 60 per cent of its forest cover. Since the cleanest and best feedstock for the production of methanol, is wood, an energy shift to methanol, as against ethanol or bio-diesel, would provide just the added incentive that farmers and forest departments need to embark upon serious reforestation programs. These would not only provide work and a source of income to millions of people in the so-called forest villages (who are among the poorest in the country) buy reverse the in which the country is trapped.

Finally, the combustion of methanol would add no more carbondioxide to the atmosphere, no matter how much consumption were to increase, because it only would be releasing back the carbon dioxide that the plants had trapped. This is again in sharp contrast to ethanol produced from food crops, whose cultivation does generate additional carbon dioxide.

Often the strongest argument against doing something different. But this is not applicable to the search for new sources of energy. Other countries are exploring other paths because they face a different set of constraints. The West, for instance, is placing its short-term bets on ethanol because it has a surplus of productive capacity in agriculture. It is placing its long term bets on hydrogen fuel cells because it knows that it cannot grow enough biomass to meet the whole of its transport fuel needs when the oil runs but. We, how ever, will not get to that point for several decades. We also face the challenges of rural poverty and environmental degradation that they have largely overcome. We need to find our own path.

INDIA SHINES AT GREEN OSCARS

SELCO Bags Honour For Turning Leftovers Into Biogas; Kerala's Biotech Comes First Security Category

London: A Bangalore-based company with the futuristic vision of a "a world in which no family needs to burn oil lamps for light, where wireless digital Communications are available to everyone, and where young people can see a brighter future reflected in the solar cells that will power it" has worn the biggest prize of them all among a score of global projects in the race for the so-called 'Green Oscars'.

SELCO, which won the Outstanding Achievement category of the Ashden International Award at a glittering ceremony on Thursday night, received the prize from the greenest global guru of them all, former US vice-president Al Gore.

SELCO won the prize, alongside Kerala company, Biotech, which came first in the food security category for turning leftover food into biogas, thereby solving two problems at on stroke-dealing with waste and generating clean, cheap power.

The Indian Projects colonised two of the six awards categories, despite stiff competition from contenders as far afield as Bangladesh, China, Ghana, Lao PDR, Nepal. Peru, Phlippines and Tanzania.

The seven-year-old Ashden Awards are thought to be world leaders in raising awareness of the huge potential of local sustainable energy to both tackle climate change and improve the quality of people's lives.

The Awards have the official aim of encouraging the wider use of local sustainable-energy Projects to encourage its wider take-up across the world.

Gore said, "The Ashden Awards are a powerful reminder that well designed and managed local sustainable energy initiatives can tackle climate change while meeting the needs of local communities. Tackling these issues simultaneously-in both rich and poor countries-is critical to addressing the twin planetary challenges of climate change and sustainable development."

The Times of India, 22.06.07

SELCO's achievement was described by judges as outstanding and impressive because of the way its founder and managing director Harish Hande deftly wove a green initiative, entrepreneurship and poverty alleviation concerns-"this visionary individual has demonstrated be yond doubt that it is possible to run a renewable energy business which is both a striking commercial success, and which lifts people out of povert y, too."

This is the second time the Green Oscars have taken note of SELCO's work and vision, with the company winning 30,000 pounds in prize money in 2005. On Thursday, it won a further 15,000 pounds, a sum that is expected to help drive forward SELCO's ambitious plans to reach an additional 200,000 customers by 2010. The 2005 Green Oscars cash injection helped SELCO increase its sales of solar home systems from 48,000 to 71,000, establish an innovation department and new partnership arrangements with microfinance organisations, develop a five-year business plan and set up a pilot fund to guarantee the deposits on solar systems for very poor households.

Many believe SELCO's growth and expansion, at least partly funded by its 30,000 pounds previous winnings, may be the future for Biotech, which has til now, built and installed 12,000 domestic, 220 institutional and 17 municipal biogas plants to generate power from waste.

FARMING FOR ENERGY

Generate Power, fuel from agriculture residues

A farmer is a multi-purpose entrepreneur. His farm produces multiple crops which he sells in the market. Yet only 25-40 per cent of his crop fetches him money, whereas the rest of his produce (agricultural residues), which constitutes 60-75 per cent of the product, is totally wasted. Often, he has to turn it in the fields.

There is perhaps no other economic activity where 60-70 per cent of the product is simply junked. No industry can survive on such low productivity. But for agriculture the wastage is taken for granted. Apart from the government's low support prices, it is wastage that has made farming non-remunerative.

In this situation, no amount of subsidies or government support price can help farmers. Farmers will really benefit when they get money for agriculture residues. This can only happen when these residues can be used to produce energy for petering India. Any marginal farm can produce agricultural residues even if the main food crop fails. On an average a farmer can get an extra income of Rs 2,000-4,000 per acre from residues alone if the waste is used to produce energy. This income can give him benefits

India generates 600 million tones of agriculture residues every year. Most of this is burnt by way of waste disposal, as the farmer wants his fields ready for next crop. A small part of the residues may be used for mulching, for fuel (for cooking) or as fodder.

Three types of energy can be produced from these residues. Liquid fuels such as ethanol or pyrolysis oil; gaseous fuels like biogas (methane) and electricit y.

Ethanol, which can be used as transport, fuel can be produced by lignocellulosic conversion of residues. Extensive R&D is being done the world over to optimize this technology. A few large plants in Canada, Japan and US have already been set up with this technology. Nevertheless, a lot of research needs to be done to make ethanol production from residues economically viable and environmentally sound. Theoretically, residues in India can produce 156 billion litters of ethanol, which can take care of 42 per cent of India's oil demand for the year 2012.

Pyrolysis oil is produced by rapid combustion of biomass, which is rapidly condensed so that the ensuing vapours or smoke yield oil that is nearly equivalent to diesel. Around 20 per cent of

The Times of India, 06.06.07

charcoal is also produced as a by-product in the Process. The charcoal can be used as cooking fuel for rural households. Pyrolysis oil technology was developed in early 1990s in Europe and North America and is now maturing. A few plants have been set up in Canada, US and China. Nevertheless, R&D is still needed to make it suitable for use in existing enternal combustion engines. Recent experiments in Sweden on running a 5 MW diesel power plant on pytolysis oil have been successful.

India can produce about 400 billion kg of pyrolysis oil from its agriculture residues, which is equivalent to 80 per cent of India's total oil demand for 2012.

Similarly, these residues can theoretically produce 80,000 MW of electric power all the year round through biomass-based power plants. This power is about 60 per cent of the present installed capacity of India. The power plants could either be small scale (500 kW), running on producer gas from agricultural residues, or medium scale (10-20 MW) running on direct combustion of these residues. The technology for this is very mature and there are thousands of such plants running all over the world.

A part of these agricultural residues also be used via the bio-digester route to produce fertillser for crops and methane gas to either run fural transport, irrigation pump sets or kitchens. Another stream can also be used to produce fodder for animals. Hence, the residues, if properly utilized, can produce fuel, of a huge chunk of India's energy needs. Which stream of residue conversion technology is eventually followed will depend upon existing market forces. Energy from agricultural residues in India can generate 30 million jobs in rural areas.

As the demand for energy increases we may see huge tracts of land coming under energy crops like sugarcane for ethanol production of jartopha for producing biodiesel. The is can adversely affect food production. These effects are being felt in US where huge acreage under corn has been diverted for ethanol production. Similarl y, large tracts of land in Brazil are being directed from food production to growing sugarcane for ethanol production. The use of agricultural residues for energy production is, therefore, the best way to settle the food vs fuel debate.

When farmers are forgotten, long-term sustainability of the country is threatened. When farms produce both food and fuel, their utility becomes manifold. Sixty-five per cent of India's population depends on farming for its livelihood. If energy from agriculture emerges as an area of interest, India can emerge as a high-tech farming community.

Agriculture is trapped in a low growth is non-reunerative. If food and energy are produced from the same piece of land, agriculture growth will be rapid.

SUCCESS STORIES RELATED TO AGRICULTURE

- Good-bye tea, welcome jatropha
- A lesson in the latest in farming technology
- FDI to make citrus farming juicier for Punjab farmers
- Bio-Pesticides: ginger garlic extract measures up
- Only market driven strategies can boost organic farming
- Value addition leads to ‘no tension agriculture’
- Majority of Darjeeling tea to go organic
- Mali’s farmers fuel a weed creed
- Organic farming the next big thing?

GOOD-BYE TEA, WELCOME JATROPHA

A SILENT revolution is creeping up the hills of the Northeast, upstaging an industry that has over the years become synonymous with the region As tea industry shown signs of ageing and depleting profits, the upstart jatropha, a rich source of bio-fuel, has quietly made inroads to provide fresh avenues for profits.

So while farmers across the Northeastern states have found in jatropha a new source of enhancing their incomes, tea major Williamson Magor has joined hands with D1 oils PLC, UK-based bio-fuel firm, to promote jatropha cultivation in 45,000 hectares across the region in the past couple of years.

"Normally, jatropha plants yield seeds only after the second year. But in the Northeast, we have found that the climate has helped the plants yield seed Kaushik Saikia, chief project manager of the D 1 Oil operations in the country.

Tripura, which has emerged as major producer of rubber in the country after Kerala, has also proved a good place for jatropha cultivation with about 15,000 hectares already under the new cash crop, according to Saikia. "Assam is second with about 14,000 hectares, while farmers in Nagaland too have shown tremendous interest in jatropha," says Saikia, "We had never thought that bio-diesel could be produced from jatropha. We have been using it for a long time only for erecting fences around our fields, abut were introduced to its potential by the Agriculture Department and D 1 Oil," said Hacto Wotsa, a farmer in Nagaland.

Wotsa, a resident of Peshidu village in Dimapur district, is among the 8,000 farmers in the tribal state who have taken to jatropha in their wastelands since April this year. "We have been provided free saplings with the assurance that the company would buy back the seeds produced in our farms," said the farmer who is hoping to double his income next year.

While others like Heveli Shohe, an entrepreneur from Lothavi village, has also taken up jatropha cultivation in one hectare and expects to hike her income by about Rs. 15,000 a year, Zingchar Bio-Initiatives Private Limited, a local firm backed by D 1 Oil, has offered a 100 per cent buy-back guarantee to 3,800 *jhum* cultivators of Nagaland and Manipur to take up jatropha as an alternative crop to help them overcome poverty and backwardness.

The Northeastern region has many wasteland, especially in the hill states.

The Indian EXPRESS, 23.11.2007

A LESSON IN THE LATEST IN FARMING TECHNOLOGY

CHENNAI: Coming right out of the agrarian crisis that has rocked their homeland, six farmers from Vidarbha, the eastern region of Maharashtra which has been in the spotlight for a spate of farmer suicides in recent years, think their brethren in Tamil Nadu have good thing going.

Dilip Jagtap, Vinayak Sambhaji Gote, Prashant Nagose, Ashok Singh Dumal, J.K. Lonham and Ashok Aaqlawe, who were in Tamil Nadu this past week as part of an on-the-field training programme with the National Agro Foundation (NAF), said as much.

"There is so much new (farming) technology here that we have not even heard of, so many farming implements we have never seen. None of this ever reaches us," Lonkar, a retired police constable-turned farmer said, the anger in his voice clashing with the wonder in his eyes.

"We learnt about soil tests, horticulture, simple ways of increasing crop productivity and improving our marketing strategies here," Prashant, the leader of the group, said. He is also the liaisoning officer for the project, using his links with the Sarvodya movement to touch base with the National Agro Foundation, through Ajeet Saxena, a volunteer from Southern Railways.

The concept of the NAF founder, statesman C. Subramaniam, is to take agriculture development from lead farmers to lead villages to create model states managing trustee S.S. Rajsekar said, explaining the raison detre behind the training programme. NAF attempted to energies the rural sector by focussing on agriculture, livestock, watershed and social develoment.

While the technical imputes came from the NAF, it was Rotary Club of Madras East that funded the entire project, according to Mr. Rajsekar. On the suggestion of another board member M.R. Sivaraman, NAF and the Rotary Club of Madras East will come together to conduct soil tests for all farmers in the villages from which the five guests hail.

The six farmers spent a week at NAF's centre in Chunnampet village, Kancheepuram district. Under the tutelage of Prof. P. Kalya nasundaram and M.R. Rama subramaniyan, NAF's agricultural scientists who speak a smattering of Hindi, the guests from Vidarbha have come off being very impressed with the pace of development in Tamil Nadu, the involvement of the State and non-governmental agencies in farming. "No one has told us these techniques can be applied. They showed us how a huge difference can be made by merely digging deep with the chisel plough. It is so simple to do, we are surely going to implement it back home, Jagtap says.

Apart from learning about farming techniques, watershed development and livestock management, the farmers will also go home impressed about the success Tamil Nadu has made of self-help groups. Prashant says, "We have SHGs too. Except they are only self groups, they help no one, not even themselves!"

The Hindu, 30.03.08

FDI TO MAKE CITRUS FARMING JUICIER FOR PUNJAB FARMERS

FOREIGN INVESTMENT MoU signed for Rs 800-crore investment in Punjab's citrus project

A FOREIGN investment firm is all set to turn citrus farming all the more profitable for farmers of Punjab.

In what could be the biggest-ever foreign investment in the agriculture sector in the country, this firm is all set to invest a whopping Rs 800-odd crore for development of citrus in the state.

While top Government functionaries involved in the deliberations chose to remain tight-lipped, sources told *The Indian Express* that Cannizaro Holdings, a subsidiary of Swordfish Management Holdings Ltd., has offered to fund the ambitious project of Punjab Government-owned Council for Citrus and Agri-Juicing to bring over one lake acres of farmland under citrus planation.

A memorandum of understanding was signed between the representatives of the Council for Citrus and Agri-Juicing Punjab and Swordfish Management on January 26.

Cannizaro is the second biggest company after soft drink major Pepsico is already helping the Council for Citrus and Agri-Juicing in its citrus nursery at Jallowal near Jalandhar.

Cannizaro Holdings, registered with Reserve Bank of India and SEBI, has already funded a similar project in China.

According to sources, what the company has proposed is simple: it will recover its investment of $ 185 million from the sale of produce from land taken on long lease by the Council from farmers in the state.

It has not asked for any guarantee from the state Government and has categorically old that it will recoup its investment from the profits of the project itself.

Started in 2006, the project, being heralded by the Council, has a scheme under which it takes land on lease from farmers for fixed period, develops citrus orchards in a scientific manner and returns the land and the orchard to the farmer. The farmer gets rent from the Council during

The Indian Express, 01.02.08

the lease period while the Council hopes to get its investment back by selling the produce from the land.

Incidentally, some government agencies such the Punjab Agriculture University, Ludhiana, the state Horticulture Department and some farm experts have raised questions over the viability of the project.

But sources in the Government told *The Indian Express* that since the project has already been on since 2004, it has been decided to give it a "few years more".

Sources say top government functionaries, including Chief Minister Parkash Singh Badal, are "Enthused" at the prospect of such a huge investment coming the state's way.

Badal, Finance Minister Manpreet Badal and Chief Secretary RI Singh are learnt to have participated in some meetings with Cannizaro representatives.

"What is great about this deal is that the government will not have to stand guarantee to the investment or even give an undertaking to return the loan in case the project comes a cropper," observed a Government official who is aware of the finer points of the proposal.

According to sources, Cannizaro officials have also told the Government that the company has done due diligence and has seen "tremendous potential" the state has in citrus.

BIO-PESTICIDES: GINGER GARLIC EXTRACT MEASURES UP

Organic practices avoid investment on costly chemicals

There is a growing body of evidence to suggest that in the past 4-5 decades there has been an excessive dumping of chemical toxins on the soil. As a result the soil has become barren and ground water toxic, in many places.

Contrast this with organic inputs that are safe, not toxic, and cost much less. For example, if using chemical pesticides and fertilizers for growing a crop in a hectare works out to about Rs.6,000-7,000 the cost of growing the same corp. using organic inputs may come to only about Rs.500-Rs.1,000, according to Ms. Rajareega of Raasi organic farma at Muthupatti village in Sivaganga district, Tamil Nadu.

Lower cost

Even if some critics say that organic farming cannot provide the same high yields as chemical farming, the organic farmers argue that at least their land is safe; that they have not invested in buying the chemicals and increasing their cost of cultivation.

"If you look at the suicides by farmers, then you will understand that all those farmers who committed suicides have built up huge debts.

The debts kept growing because of borrowing at high interest rates for buying these chemicals which promised to increase the yied. In the end, it only increased their debts," she explains.

"If only farmers use safer and natural pest repellents and manures then where is the question of debt and suicides,?" she enquires.

She has been using only organic manures and bio-repellents made from locally available resources.

Five leaf extract

For example she uses 5 different leaf extracts (*eindhuilai karaisal* in Tami) derived from *Calotropis* (called *yerukku* in Tamil), *Jatropha cureas* (*Kattu amanaku* in Tamil), Neem (*vimbu* in Tamil), Guduchhi/Amruth (*seenthil kodi* in Tamil), Chaste tree (*nochi* in Tamil), Malabar nut (*adathoda*

The Hindu, 03.04.08

in Tamil), Kalmegh (*siriyananagai* in Tamil), Clerodendron (*peenarisanghu* in Tamil) and Usil (*arappu* in Tamil), These plants are commonly found in all villages. About 1 kg of leaves from each plant is taken and powdered and then ground into a paste. It is then mixed with 5 litters of cow's urine.

The concoction is then diluted in 5 litters of water and left undisturbed for 5 days. When required for using about 500 ml of the concoction is diluted in 10 litters of water and sprayed over the plants, she explains.

Ginger garlic extract

Another tried and proven mixture she uses is ginger garlic extract (called *injipoondu karaisal* in Tamil). About 1 gm of ginger and garlic each, 2gm of green chilli and 5 litters of cow's urine and water are taken. The garlic, ginger and green chilli are ground into a paste and mixed with cow's urine and water. After 10 days the mixture is filtered and used.

The prescribed quantity is about 500 ml of this solution diluted in 10 litters of water which can be sprayed over the plants.

Ideal spraying time

The ideal time for spraying these karasals is during 6 am to 8.30 am and between 4 pm and 6.30 pm. Depending upon the soil, crop and other climatic factors the concentration can be raised or lowered.

Farmers can contact their nearby organic farmers who are using these karaisals or can contact Ms. Rajareega for guidelines regarding the concentration.

Effective control

Both the above karaisals have been found effective in controlling leaf roller, thrips, mealy bugs, fruit, stem and bark borer, hairy caterpiller and aphids.

Even if a farmer is not convinced about the benefits of organic inputs he can continue to grow his crops using chemicals , but at the same time he can set aside a small portion in his field to grow the same crop using organic inputs.

By doing so he can find out for himself the cost benefit ratio. That itself can convince him of its efficacy.

Readers can contact Ms. Rajareega, Raasi organic farms, Muthupatti, via Kallal, A. Siruvayal (post), Sivaganga district, Tamil Nadu, email:rajareega@rediffmail.com, mobile: 9865-582142 and Phone: 04565-284937.

ONLY MARKET DRIVEN STRATEGIES CAN BOOST ORGANICF ARMING

Lack of genuine marketing infrastructure was a big problem for the growers

Though organic farming has been proved to one a low investment technology for growing crops, marketing organically produced crops has not been an easy task especially for some farmers.

Lack of information on marketing channels and absence of proper government guidelines has forced many of them to sell their produce for a throwaway price, an irony when today, organic produce fetches a good price, (Rs.3-4 per kg more) than chemical produces.

Bio village

The village has been adopted by the Institute of Commercial Horticulture (ICH), Tamil Nadu Agricultural University (TNAU), Udhagamandalam, under the Hill Area Development Programme as a bio-village.

The farmers of the village were trained to cultivate their crops under organic practices by ICH. Crucial inputs such as *Panchagavya, Dasagavya,* Biodynamic compost, vermicompost, Cow pat pit *Azospirillum Phosphobacteria,* and bio-control agents such as *Trichoderma viride* for growing the crops were provided by the Institute.

Increase in yield

Field demonstrations were conducted under the guidance of Dr. N Selvaraj, Professor and Head of the Institute. Speaking on behalf of the villagers Mr. N.Sekar, a farmer said, “there is an increase in yield of 5-10 per cent when compared to chemical farming.

“But the real problem faced by us was lack of marketing infrastructure and a good price for our produce. Though some NGOs had approached us for buying the produce, their promise of paying us never materialized.”

Organic Association

At this point of time the villagers under the guidance of Dr. Selvaraj, approached the Organic Farmers Association, after reading a series of articles on organic farming and its marketing in the

The Hindu, 06.03.08

Farmers Note Book column of *The Hindu* to develop a marketing channel for Meekeri. "Representative of that Association immediately visited our village and interacted with us. They were satisfied with our produce and made an advance payment for our produce. In fact this is the first time that we have got an advance payment for our organic products," said Mr. M.Sekar.

Poison free food

Organic Farmers Association comprises nearly 10,000 farmers as its members spanning all over the country and have around 200 outlets under the brand name 'Poison free Food' through which the farmers market their produce.

According to Mr. R. Ranganathan, President, absence of proper marketing channel proves detrimental to marketing of organic products.

The government should take active steps to encourage organic farming in the state.

It has been proved that organic farming is a low budget, risk free farming practice which has only positive impact on both the farmers and the environment.

Marketing made easy

But does the association help only those farmers in the state for marketing their produce?

"Organic farmers through out the country are welcome to contact us for marketing their produce," said Mr. Ranganathan.

Readers can contact Mr. M. Sekar, Meekeri, B. ManihattyP.O., The Nilgiris and Mr. R. Ranganathan at No16-Vanigar street, Thiruporur,Tamil Nadu-603 110, email:tedtrust@ rediffmail.com, Phone: 044-27478669 and 27446793, mobile: 94433-46369.

VALUE ADDITION LEADS T O 'NO TENSION AGRICULTURE'

A hectare fetches the farmer a gross income of Rs. 2 lakhs in 10 months

There are two ways in agriculture for a farmer to earn money. One is by growing and selling the harvested crop, second is to go in for some value added products.

Farmers are encouraged by scientists to try and explore value addition technology areas as it enhances the marketability of the produce.

Compared to selling the raw harvested produce, value addition requires more financial inputs, proper guidelines, and backup technologies to ensure success.

Mr. Shander Kishore Chaudhar y, a progressive small scale farmer of Vaishali district, Bihar, is farmer who cultivate elephant foot yam (commonly called as Ool in North India) in his three-acre field.

Different recipes

Without stopping with just growing the tuber crop, he has also taken up value added products by creating 33 different varieties of recipes from it such as sweets, pickle, mouth-freshener, and brewing powders similar to the tea.

Elephant foot yam is a tuber crop commonly used as a vegetable and for preparation of pickles and sauce.

The tuber is commonly called as *Jimikand* or *Ool* in North India, Sooran in Gujarat and Maharashtra, *Kand* in Andhra Pradesh, *Karnai Kilangu* in Tamil Nadu and *Suwarnagatti* in Karnataka, it is cultivated all over the countr y.

"This value addition has increased the marketability and has demonstrated immense product potentials of this tuber," said R. Ramadhar, Chairman, Bihar State Farmers Commission, Patna.

Mr. Chaudhary grows the crop in his field and also takes the lands of other farmers on rent for raising the crop.

"I normally harvest 50-60 tonnes from a hectare of land and earn a gross income of Rs. 2 lakhs in about 10 months.

"The average cost of cultivation in a hectare works out to Rs. 1.30 lakhs, ensuring perhectare net profit of Rs 70,000, which is much more than from any other competing crop," he said.

More income

He has also been growing intercrops such as rajma, pea, ladies finger and banana. "Intercropping further brings me a profit of some Rs. 15,000-20,000 per hectare, said Mr.

The Hindu, 13.03.08

Chaudhary.

The crop is generally sown in pits. A tuber of 0.25kg-0.5kg should be sown in a pit at a distance of 75x75 cms.

If the reseed tuber is of bigger size, it can be cut be cut into pieces but each piece must have a bud. Some 6.5-9 tonnes of seed tubers are needed for planting in one hectare.

Fertilizer requirement

It is recommended to us 3 kgs farm yard manute, 10 gm urea, 37.5 gm single super phosphate and 10 gm potash in each pit before sowing.

The seed tuber should be immersed for 15-20 minutes in a solution of 1 litre of water with 2-5 gms emisan and half a gm of emisan and half a gm of streptocycline.

Three months after sowing, 20 gms. ammonium sulphate or 10 gms urea should be applied in each pit.

Intercultural

"Interculturing should also be done whenever heeded since weed can adversely affect the production potential of Ool.

Required irrigation should be given. In Bihar conditions, it requires about 3-4 irrigations during summer months," said Mr. Ramadhar.

Infestation

The crop was found to be affected by Phytophthora leaf blight infestation which is a fatal disease and application of Dithane M-45 (o.25 per cent) was found effective in reducing its occurrence.

"Bihar is self-sufficient in *Ool* production at present and there is a good demand for the produce especially in Uttar Pradesh. As a result, marketing is not a problem," said Mr.Ramadhar.

Marketing support

A number of farmers in the state have adopted ool farming as a means to supplement their income. Mr. Choudhary provides marketing support to the other yam farmers at a margin of 5-10 per sent through contract farming.

"Besides the contract agreements between Mr. Choudhary and the farmers, there are individual farmers who have taken up ool cultivation and sell the products to local traders," said Mr. Ramadhar.

Mr. Chaudhary calls ool cultivation "no tension agriculture" as is requires no cold storage, poses no marketing problem, and the income is good.

For more information readers can contact Mr. Ramadhar, Chairman, Bihar State Farmers Commission, Pant Bhawan, 1st Floor, Bailey Road, Patna-800001, email: ramadhar@ vsnl.comkisanayog@gmail.com, Phone: 0612-2206169 and 2232847.

MAJORITY OF DARJEELING TEA TO GO ORGANIC

About 37 p.c. of the total crop grown on the slopes of the eastern Himalayas is organic

KOLKATA: The Darjeeling Tea Association (DTA) has mounted efforts to increase the production of organic tea so that the majority of the champagne of teas is organically produced by 2010.

Industry sources say that at present about 37 per cent of the total crop grown on the slopes of the eastern Himalayas is organic tea, as per certifications given by European and Japanese agencies.

"Efforts are on now to cover at least two more gardens that contribute 13 per cent of the total yield under the organic cultivation norms," a source at the DTA, the apex industry bod y, told *The Hindu.*

Given the fact that the annual Darjeeling tea crop averages at about 9.5 to 10 million kg in volume terms, India would be offering around five million kg of the brew as an organically grown product. However, initially the crop would be lower as the conversion process reduces out put by half.

It takes about three years to convert a garden from conventional plantation to an organic one. This involves not only a total ban on chemical fertilizers and pesticides but there are also restrictions on the use of some natural items. "For instance, use of tobacco extracts for pest control, is not allowed," sources said. Pointing out that the movement on organic production of teas started about 15 years ago, the sources said that at that time it commanded a huge premium in the international market with some of them selling at Rs. 10,000 a kg. Japan and Germany were two of the biggest markets for organic Darjeeling tea although the U.K. and the U.S. have also been buying this tea.

Countries such as Germany, which imports about 50 per cent of the total Darjeeling tea output (both organic and inorganic), often re-export this to European countries like the Netherlands and Switzerland.

At present the 'queen of brews' is grown over an area spanning 7,500 hectares in the Darjeeling district in West Bengal with some of the gardens sprawling across steep slopes sometimes at a height of 6,500 feet.

There are now 87 tea estates growing Darjeeling tea. However, there is little scope for increasing the output substantially although there is a huge global demand now for teas, especially premium varties.

In the beverage space as well as a nutraceutical, tea is being re-invented.

The sources said that the good news was that changes in ownership and taking over of sick gardens bodes well for the Darjeeling tea industry especially as manufacturing processes and practices would improve, but crop might not increase sizably even after the Centre's rejuvenation and replantation scheme, the Special Purpose Tea Fund, which has now got under wa y.

MALI'S FARMERS FUEL A WEED CREED

WHEN Suleiman Diarra Banani's brother said that the poisonous black seeds dropping from the seemingly worthless weed that had grown around his family farm for decades could be used to run a generator, or even a car, Banani did not believe him. When he suggested that they intersperse the plant, until now used as a natural fence between rows of their regular crops-edible millet, peanuts, corn and beans-he thought his older brother, Dadjo, was crazy.

"I thought it was a plant for old ladies to make soap," he said. But now that a plant called jatropha is being hailed by scientists and policy makers as a potentially ideal source of biofuel, a plant that can grow in marginal soil or beside food crops, that does not require a lot of fertiliser and yields many times as much biofuel per acre planted as corn and many other potential biofuels. By planting a row of jatropha for every seven rows of regular crops, Banani could double his income on the field in the first year and lose none of his usual yield from his field.

Poor farmers living on a wide band of land on both sides of the equator are planting it on millions of acres, hoping to turn their rockiest, most unproductive fields into a biofuel boom. They are spurred on by big oil companies like BP and the British biofuel giant D1 Oils, which are investing millions of dollars in jatropha cultivation.

Countries like India, China, the Philippines and Malaysia are starting huge plantations, betting that jatropha will help them to become more energy independent and even export biofuel. It is too soon to say whether jatropha will be viable as a commercial biofuel, scientists sa y, and farmers in India are already expressing frustration that after being encouraged to plant huge swaths of the bush they have found no buyers for the seeds.

Jatropha originated in Central America and is believed to have been spread around the world by Portuguese explorers. In Mali, a landlocked former French colony, it has been used living fence that keeps grazing animals off their fields the smell and the taste of the plant repel grazing animals and a guard against erosion, keeping rich topsoil from being blown away by the Harsh Sahel winds. The Royal Tropical Institute, a non-profit research institution in Amsterdam that has been working to develop jatropha as a commercial biofuel, estimates that there are 22,000 linear kilometers, or more than 13,000 miles, of the bush in Mali.

The Indian Express, 11.09.07

Jatropha's proponents say it avoids the major pitfalls of other biofuels, which pose significant environmental and social risks. Places that struggle to feed their populations, like Mali and the rest of the arid Sahel region, can scarcely afford to give up cultivable land for growing biofuel crops. Other potential biofuels, like palm oil, have encountered resistance by environmentalists because plantations have encroached on rain forests and other natural habitats. But jatropha can grow on virtually barren land with relatively little rainfall, so it can be planted in places where food does not grow well. It can also be planted beside other crops farmers grow here, like millet, peanuts and beans, without substantially reducing the yield of the fields; it may even help improve output of food crops by, among other things, preventing erosion and keeping animals out.

Other biofuels like ethanol from corn and sugar cane require large amounts of water and fertilizer, and factory farming in some cases consumes substantial amounts of petroleum, making the environmental benefits limited, critics say. But jatropha requires no pesticides, Samake said, little water other than rain and no fertilizer beyond the nutrient-rich seed cake left after oil is pressed from its nuts.

ORGANIC FARMING THE NEXT BIG THING?

AS INDIA struggles to deal with stagnation in its crucial agricultural sector, small-scale organic farming initiatives near the Capital are providing clues on how to reap healthy profits from the land.

Many farmers in India, where more than 70 per cent of the people depend on the land, eke out a living-or else fall steadily into debt-trying to grow water, fertiliser and pesticide-heavy crops on an acre or two of land.

Growth has clocked in at a mere two per cent-far behind the wider figure of nine per cent-leading the government to wager $6 billion in a push for large-scale, industrial farms.

"Small and marginal farms have become an enviable proposition," said Prime Minister Manmohan Singh last month, announcing the four-year investment in farm technology and infrastructure. "Till we make farming as a whole viable at this scale, it would be virtually impossible to reduce rural poverty and distress," he said.

But around New Delhi, free range and organic goods from new comers to farming are showing that money can be made by growing specialty products that consumers are willing to pay more for.

At the French Farm in gurgaon, Roger Langbour raises thousands of free-range Peking and Muscovy ducks on feed that is free of pesticide and antibiotics. On an early morning visit, white ducks sat placidly on the ground in a large enclosure with wire fencing. Else-where turkeys and even a small number of quail and pheasants pecked at the ground. "People said 'you are crazy, no one will buy your ducks," said Langbour, who started the three-acre farm 14 years ago. "But I'm the one who has opened the duck market in India."

He now also raises pigs, and sells his products to five-star hotels, expatriates and wealthy Indians, garnering strong weekly sales worth around $2,500.

Another recent start-up, Heritage Health Food, delivers boxed organic food grown on 80 acres of leased land. "Agriculture is the sector that's going to be the next big thing. It's an unorganised sector so there's a lot of opportunit y," said Indira Khosla, co-founder of the company.

Hindustan Times, 26.06.07

The two-year-old firm makes 200 to 300 deliveries a week, priced at between $5 to $10, depending on weight, and Khosla expects to start turning a profit by next year.

"Recent studies have shown that if you want to achieve growth, it can be through high-value crops and not though cereals," said Surinder Sud, agriculture editor for the *Business Standard* daily. "High-value crops include fruits, vegetables, milk, poultry products and fish."

An Indian Council for Agricultural Research study showed that the two per cent agricultural growth rate masked a six per cent growth rate in fruits and vegetables, Sud said.

Even so, India, the world's second largest wheat producer, may be reluctant to encourage its farmers to move away from growing staples like rice and wheat.

As incomes and food consumption have gone up, wheat reserves fell last year and the country was forced to import the commodity for the first time in six years.

But Sud said that with huge foreign reserves thanks to 15 years of a booming economy that is now growing at more than nine per cent per year, food security can be managed. "The government can assure it through imports-that's not a problem anymore," said Sud. "And by growing high-value crops the farmer would have money to purchase foods."

SUCCESS STORIES RELATED TO COMMUNICATION

- World Bank to link Maha farmers to market
- Indo-American couple brings IT to the Sunderbans
- E-swaraj in villages
- Now, farmers SMS their way out of a problem
- Mobilising growth in rural India

WORLD BANK TO LINK MAHA FARMERS TO MARKET

NOW, a poultry farmer sitting in Vidharbha can get a text message on prevailing market rates in Nashik before he sells his products. The animal husbandry department has launched a pilot project to set up a market develoment cell to promote exports and improve market access for farmers.

Maharashtra, Andhra Pradesh, Rajasthan, Orissa and Tamil Nadu have been selected for a World Bank-aided Multi state Agricultural Competitiveness Project (MACP) to develop competitive marketing systems and empower farmers by giving them better access to markets. “We have tied up with MITCON consultancy services to study the market,” said Ashesh Sharma, Maharashtra Animal Husbandry Commissioner. The World Bank has also approved the proposal to set up a nodal facility to boost animal husbandry products like meat, poultry and eggs for export.

At present, there is no centralised facility in the state to grade the eggs that are required for exports. So, as part of the new project, egg-grading units will be set up at five places in Western Maharashtra, including Pune. There is also a move to start poultry dressing units and an organised slaughter house.

Marketing of meat and eggs is still in the unorganised sector and infrastructure for supply for essential inputs, facilities for improved breeding, feeding and management of meat products are too inadequate, said Sharma. “What we are aiming at is a more organized network to increase private sector investment in agri business and promote entrepreneurs who can set up such units. We are also looking at other players in the market apart from the established ones to take up contract farming,” he added.

The Indian Express, 02.11.07

INDO-AMERICAN COUPLE BRINGS IT TO THE SUNDERBANS

AN INDIAN American techie who helped set up Hewlett Packard's first overseas centres 20 years ago is now busy providing IT training to the fisher folk of Sunderban, the largest mangrove forest in the world.

It is not a passing fad for Radha Basu who has been interested in the Sundarban and its people for a long time. She wants to improve the standard of living of residents in that part of West Bengal.

In 2005, she and her husband Dipak did a six-month study of the information and communication technology needs of the area's fishermen said they wanted to learn marketing skills.

So Basu last year stepped down from the board of Supersoft, the company she founded, and her husband quit his job at IT major Cisco, and together they founded their own NGO, Anudip, to address the needs of the fishing families.

After exploring several vocations, including organic farming and cold storage, the couple decided to focus their efforts on an area they knew well-IT skills training.

They have opened more than 100 training centres in Sunderban in West Bengal where young people, mostly in their 20s, who have never seen a computer, are taught various computer skills, basic conversational English and business administration.

The majority of the area's inhabitants are poor and literacy levels are low. The infrastructure in the region is poorly developed, with only 41 km or railway lines and 299 km of gravel roads covering the vast expanse, half of which become muddied and inaccessible in the monsoons, Basu told India West, an ethnic Indian weekly published from California.

Basu compares her mission of "harnessing rural computer professionals" to that of Hewlett Packard 20 years ago when it set-up its first Indian centres. "Back then, there was no multinational doing software work in India, until HP and Texas instruments set up in Bangalore," she said.

"At first, people were saying, 'Are you crazy? Can we actually do high-level soft ware stuff so far away? Some low-level stuff, maybe....., and look at how out sourcing exploded.

"I see this as being entrepreneurial in the same way, taking entrepreneurship out of the metros to the rural areas; taking that wealth creation to the rural areas."

Basu now wants big Indian tech houses like TCS and Wipro to outsource some of their work to these struggling fishing communities.

Hindustan Times, 13.09.07

E-SWARAJ IN VILLAGES

Kerala shows the way

The Kerala Government, at the forefront of e-governance initiatives, has taken the inspiring step of launching a programme, in partnership with UNESCO, to provide gram panchayats in the State with their own web portals in Malayalam. This is an important step and a recognition of the exciting possibilities for e-governance in rural India, where, if imaginatively deployed, it can make a significant difference to the quality of life of the people. In early stages, e-governance in India was introduced largely at the Central and State Government levels from where it has been percolating down ward to rural areas. The alternative to the top-down approach is that of providing e-governance to local bodies and building upwards. Happil y, as the Kerala experiment demonstrates, State Governments increasingly recognise the potential of information technology to transform the rural landscape and have begun initiating steps to introduce it even in remote areas. The majority of the population lives in villages, many in conditions of impoverishment, and e-governance can be an important tool for empowering them. In general, the importance of e-governance to a country like India can hardly be underestimated for it can be the sword that can slice the Gordian knot of the many ills that plague governance, including the problem of providing citizens access to Government services and information. As is known, e-governance substantially streamlines the functioning of the administration by cutting red tape and, by reaching citizens directl y, eliminates corruption and ensures transparency and accountabilit y.

No doubt, rural folk profit from these general attributes of e-governance even as there are specific ways in which they take advantage of it. For example, farmers can access information and services that can help enhance their productivity, enabling them thereby to improve their price realisation even as loans are disbursed through the Internet. Also of importance in rural areas is the computerisation of land records, which does away with the corruption that has often characterised their keeping hitherto. As the example of e-medicine demonstrates, there are many ways in which information technology can deliver modern services to rural areas that have been difficult to provide till now. Quite simply, e-governance offers a shortcut. The prospect of e-governance in rural areas is stimulating for another reason, for it can be an important experiment in democracy: The harbinger of e-democracy, the way of the future. Mahatma Gandhi's vision of Gram Swaraj in India-a decentralised form of Government with self-governing villages at the base-can find part expression in citizen participation encouraged by e-governance. For IT introduces a communication process that is two-way and that allows citizens to significantly influence policy even as it evolves.

The Pioneer, 02.05.07

NOW, FARMERS SMS THEIR WAY OUT OF A PROBLEM

New Delhi: Fishermen from Kerala have been topping the power of cellphones to get the best price for their catch. Now, farmers in Haryana are SMSing a free government helpline to get solutions to their ago-problems.

Men like Noor Singh Ahlawat (48) of Gohana district, who spends his spare time brushing up his SMS skills. The Government set up this troubleshooting service in Februar y, the first of its kind in the country. Farmers can contact senior officials of the agriculture department for advice. Even illiterate farmers are taking help of others in the family or neighbourhood to send SMSes.

Pyare Lal of Ghogarian village in Jind district says, "I don't know English and had to take the help of a village doctor. I used this facility responded within two days. All we have to do is tell them our address and our problem." Shyam Sunder from Hisar district says, "Since the service is free of cost, we can use it as many times as we want." Atam Singh (47) of Charkhi Dadri in Bhiwani district doesn't think it's such a hot idea, "Although I've studied up to Class 12, I'm unable to type an SMS.

Of what use is this service for those who are illitrate? Such facilities look good in babus' files, but I don't think many farmers can use it." Officials say it will take time to exploit such technology in the farm sector.

They feel this service will go a long way to educate farmers one they get hooked to it. The department feels that farmers have been deprived of scientific advice as agriculture department officials and professors of agriculture universities have been unable to disseminate information to farmers in remote areas. Mobile technology is helping surmount these problems.

The service was first available in the Charan Singh Haryana Agricultural University, Hisar, and then extended to Regional Research Centre, Uchani in Karnal and Bawal in Rewari district. Currently, farmers can avail of the service every Monda y, Wednesday and Friday from the Hisar and Bawal centres and on Tuesday and Thursday from the Uchani centre. Soon, it could be available through the week.

Sunday Times of India, 09.09.07

MOBILISING GROWTH IN RURAL INDIA

The cellophane market in the country is seeing new-age users like farmers, fruit sellers, who are increasingly using this tool to boost their businesses. Handset manufacturers now trying to capitalise on this growing demand

Bangalore: Scrnjario 1.Xavier is a Bangalore based balloon seller and has been in the trade for the past 15 years. During off-season period he does odd jobs as a repairman and a part-time accountant. But since acquiring a phone a year ago he has been able to increase the number of his earning days.

Explains Xavier. “No I can switch between different fairs on the same day, after confirming where the sales are high. I am able to sell balloons at fairs that are happening outside Bangalore. And with the phone my repair services can also be coordinated, as I am easily accessible to people who have a job for me. Earlier I used to visit them frequently to enquire about work.”

Scenario 2 Harkishan is a watermelon farmer in U P. He lives in a joint family of 20 members. His father used to beg at one time to support his family. Harkishan explain, “We sell about 15 tonnes of watermelon in a season, but the price depends on where we sell the produce.” Harkishan has had a mobile phone for about three years now. He says, Using the phone, I contact whole sale dealers and traders to sell watermelons. I also find out the prevailing rates in different markets and decide on where to sell my produce.”

According to a study done by LIRNE asia and AC Nielson, close to 100 million new cellular subscribers are expected to come from the rural areas over the next two years.

Nokia recently commissioned a research called Mobility Development Report through The Centre for Knowledge Societies (CKS) to understand the nuances of this spawning market opportunity. The report identifies seven service areas, namely transport, micro-commerce, finance, health care, governance education and infotainment, which could be transformed for rural communities by mobile communications. For instance, public transport is not available in 45% of villages in India, and only 1% of Indian households own a vehicle. Mobile communication could be used to create and co-ordinate car sharing schemes amongst villages, and provide real-time information about public transport services and the ability to make request stops.

The power of mobile telephony is redefining the economic and social fabric of rural India. The country adds six million new mobile subscriptions each month.

The Times of India, 04.09.07

The tele density has increased to 20.52% in July 2007 from 19.86% in June 2007, according to the Trai. One in every five person. Now owns a telephone as the total number of subscribers reached 23287 million by Jul y.

The total wireless subscriber base has touched 19298 million now. The rural markets contribute about 5% of national GSM handset sales, according to a study done by LIRNE asia and ACNielson. This is expected to rise to 25-30% by 2009. And by the end of next year, three quarters of India's population will be covered by a mobile network.

Many of these new mobile citizens live in poorer and farflung with scarce infrastructure, poor illiteracy. It's no surprise then that handset makers like Nokia, Motorola, Samsung, L G, and Sony Ericsson are trying hard to get their India-formula right, to capitalise on the rural market.

Nokia recently commissioned research called Mobility Development Report through The Centre of Knowledge Societies (CKS) to under stand the nuances of this spawning market opportunit y.

Rural-Friendly Phones

Based on extensive studies Nokia has realised that when designing a product for rural markets there are certain aspects of the form factor that needs to be kept in mind. For instance a farmer is not keen on having a camera on phone. But radio capabilities are appreciated since these people are used to listening to music on a transistor or a similar device.

Explains Devinder Kishore, (director marketing) Nokia India, "The three killer applications when it comes to phones for rural market are an in-built torchilght, an alarm clock and the basic ability to communicate using voice.

Some of the other useful features are rust resistant keypads, sturdier and breakage proof models, longer battery life considering they don't charge their phones on a daily basis and there is also the problem of power supply in these areas and in parton east to use features and buttons."

Another key element in all this is language capability. Since a large section of these people are not well versed in English, it is absolutely essential to provide a regional essential to provide a regional touch Nokia introduced localised interface in nine Indian languages in order to provide the benefits of mobility to larger section of the society.

There have been efforts to introduce handsets, which support voice prompts in various Indian languages. For instance, Motorola has already introduced the MOTOFONE, which responds to prompts in local languages. According to Lloyd Mathias, Marketing Director of Mobile Devices at Motorola India, "We developed the MOTOFONE keeping in mind the semi-urban and rural audiences. The attempt here is to be able to have a dialogue with the customer.

This model also comes with higher audio livels, which are necessary given Indian conditions, especially if the person using it is standing in the midst of a market or so. We have also taken into consideration factors like longer battery life for the phone with a quicker recharger time in keeping with known realities like power cuts in these areas.

One of the more expensive features of the mobile handset is the display. However, some experts argue that although cost reducing, removing LCD display is not an alternative for poor because of two reason. Firstly, people don't want ugly handsets. The telephone needs to have a nice design or it will not sell Secondly, the display of fears several features of added value to the people, such as a clock, light, information about a phone call, battery time and signal coverage, which are integral to such audiences.

Tailored to Their Needs

While language is a huge factor, the relevance and the value derived from the device are equally important. Adds Samuel Selvakumar, operations director, Hutchison Essar South. "The onus is on providing people in these areas with services that are tailor-made to suit their needs. And commodity prices are the biggest draw for this population. All of them have some fort of produce to bring to the market. And if we can provide them with timely updates, then they can benefit from the phone."

In fact this phenomenon was studied by Harvard University economist, Robert Jensen, who studied the impact of mobile telephony on fishermen in Kerala. Report says, mobiles have not only eliminated the need for fishermen to dump unsold fish in the sea, but also helped them increase their margins by 8% while reducing the prices for consumers by 4%.

The report says that soon after mobile phone coverage in Kerala spread from 1997 to 2000, the number of fishermen selling their catch outside their home markets rocketed from zero to 35%.

This also ensured that instead of selling their fish at beach auctions, the fishermen would call around to find the best price. "Each community has a specific need based on the occupation. Everyone wants information. However designing customised packages are not an easy task," explains Selvakumar.

Ridden with obstacles

But the other problem is the fact that most people are not comfortable using text options, so information will have to be provided in voice format. That is another cumbersome task. "Also the pricing for such services. A farmer cannot afford to pay Rs 6 per minute to listen to the commodity prices. He will hang up mid wa y, even without getting what he wants. So the obstacles are one too many," says Selvakumar.

Another stumbling block often cited is that of lacking distribution channel for suppl y, maintenance and, most importantl y, for promotion and communication of the availability of the technolog y.

The Last Word

Even as handset makers work on models that are low-priced and user friendl y, the onus is on service providers. They have to ensure that there is last mile connectivity and relevant in formation available in a usable format so that, mobile phones can indeed make life and work in rural India better!

SUCCESS STORIES RELATED TO MEDICINAL PLANT

- India sows the seeds while China reaps the harvest
- Intercropping of medicinal plants and trees in coconut gardens

INDIA SOWS THE SEEDS WHILE CHINA REAPS THE HARVEST

CHINA'S MEDICINAL plants exports are 10 times India's and here's why: most of India's medicinal herbs and plants are exported to China in the raw form, where they are processed and re-exported as expensive supplements to the 60 billion global market. But India is waking up to the opportunities.

"A lot of India exports go to China in the raw form, where they process, value-add and export it to the global market. To counter this, India is setting up export and processing zones in three states for the cultivation and processing of medicinal plants to capture the growing demand for alternative theraples aborad." Minister of State for Comerce Jairam Ramesh told the*Hindustan Times*.

In 2006, medicinalplant exports from India were worth 200 million (Rs 800 crore) as compared to China's 5 billion. The global market to cross 5 trillion by 2050.

The export zones & to come tip in Uttarakhand, Chhattisgarh and Jammu and Kashmir-will help cultivators move away from collecting from forest move away from collecting from forest areas to farming herbs and plants. "As much as 60 per cent of India's exports are in the crude form, 30 percent are finished and 10 per cent are partially prepared. Despite the country's traditional knowledge of herbal medicines, our biggest export is isabgol (psyllium husk)," says Ramesh.

Manufactures of alternative medicines such as the Himalays Drug Company and the Bangalore-based Samichor investors and are guaranteeing purchase of the yield.

"It will be a public-private partnership where the state government will Identify the land, the central government will provide the Infrastructure, farmers will be mobilised through cooperatives and the private sector will buy the plants process and sell them as finished products." says the minister.

The bulk of the investment will be form the private sector. "The initial investment is expected to be not more than Rs 20 crore (30 million), including the setting up of processing, testing and quality control labs," says Ramesh.

Hindustan Times, 18.07.07

Currently, medicinal plant cultivation is very small in India. The health ministery" says forests contribute to more than 90 per cent of the medicinal plants used for manufacturing medicines, and it fears that the growing demand for herbal products is putting an unsustainable demand on forests and threstening several species with extinction.

Missing out
60 billion
Is the total worth of the global medicinal plant market
5 trillion
Is the projected market worth in 2050
5 billion
worth of Chinese exports in 2006
200 million
(Rs 800 cr) worth of Indian exports the same year.

To take advantage of the huge market for medicinal plants. India plans to set up exports and processing zones in three states for the cultivation and processing of medicianl plants to capture the growing demand for alternative theraples aborad.The zones, will come up in Uttrakhand, Chhattisgarh and J&K.

INTERCROPPING OF MEDICINAL PLANTS AND TREES IN COCONUT GARDENS

It offers a good scope for increasing nut production and income

Coconut in India is primarily a small farmer's crop. Growing coconut alone as a monocrop doesnot provide empolyment through out the year and the income derived from small holdings is not sufficient to sustain a farmer's livelihood.

Coconut based intercroping in the interspaces of coconut trees and integration with other enterprises such as cattle offer good scope for increasing coconut production.

Usually a spacing of 7.5 X 7.5 mts is generally recommended for coconut palms which are planted in a square shaped planting system.

Active root zone

Coconut trees usually do not utilize completely the available resources such as land space, aerial space, water and nutrients as the active root zone of the coconut tree is confined to only 25 per cent of the available land area.

The remaining area could be profitably exploited for raising other intercrops, according to Dr. H.P. Maheshwarappa, Senior Scientist (Agronomy), Division of Crop Production of the insititute.

Plant varieties

Field experiments conducted at the Central Plantation Crops Research Institution (CPCRI), Kasaragod in Kerala have indicated successful establishment of medicinal plant verieties such as vetiver, kacholam, arrowroot, chittadalodakam, thippali and aloe vera as intercrops in coconut gardens.

In recent days, due to increased health awareness of the people of the carcinogenic hazards of the synthetic drugs, thereis an enhanced demand for the products of medicinal plants.

Ready market

"Before growing any of the above mentioned medicinal plants care should be taken by farmers to ensure there is a ready market for the produce," he said, At CPCRI the above medicinal plants were grown in coconut gardens with organic manure.

The Hindu, 11.10.07

For example, vetiver oil, which is extracted for the roots of the plant has a good demand in the manufacture of perfumes, essence, atar, soap and in the food flavouring industry.

"The roots are also used in manufacturing ayurvedic medicines. For growing veticer, the land was ploughed during summer and the slips (2 slips per pit) were planted at a spacing of 60 X 60cm. Before planting, organic mature at the rate of 10 tonnes per hectare was applied to the soil and planting was done during July-August.

After 30 days of planting, earthing was done to remove unwanted weeds. Irrigation can be provided to ensure good crop growth during the dry spell.

Net income

The crop was harvested in 15-18 months after planting and each plant produces 80-90 gm of dry roots. From an acre one can get about 780 kg of dry roots, Dr. Maheswarappa explained.

At the rate of Rs. 45 per kg of dry root, the net income obtained from one acre of coconut garden is Rs. 28,000 to 30,000.

Similarly for growing other medicianal plants such as nilgirianthus, nagadanti, chittdalokakam and thippilli, organic manure at the rate of 20 tonnes per hectare was pilled and convenlant beds prepared.

Planting details

The crops were planted at a spacing of 60X60 cm and irrigation provided during dry months. Depending upon the duration, crops were harvested and marketed.

In adition to medicinal plants perennial tree species such as pathimugham, heart wood, bael tree and coomb teak were also grown as intercrops.

Readers can contact Dr. H.P. Maheshwarapas, Senior Scientist (Agronomy), Division of Crop Production. CPCRi, Kasaragod-67 124, Kerals, email : maheshcpcri@yahoo.com, mobile: 09495103236

SUCCESS STORIES RELATED TO WASTE MANAGEMENT

- Waste not , want not, wealth from waste
- 232 water bodies will be revived by '08: Govt to HC
- Najafgarh drain turns sports venue
- A panchayat's clean sweep : Toilets in all homes

WASTE NOT ,W ANT NOT, WEALTH FROM W ASTE

Reducing input costs is the immediate need of the hour for farmers

The main objective of technology based agriculture must be to reduce the inpout costs for small and marginal farmers and at the same time incerease the yield.

Agriculture scientists would like the farmers to realise that reduction of chemical based fertilizers and pesticides can benefit both man and earth over the long run, and in particular for farmer, as a major portion for whose money is spent on buying these chemicals.

Value of waste

The focus, they believe must shift to educating farmers on the value of waste matter being generated in both their fields and homes and the technology to convert these waste into wealth. Their farm economics will definitely improve if they realise and adopt this.

It is precisely on these lines that scientist at the Myrada Krishi Vigyan Kendra at Gobichettipalayam, in Erode, Tamil Nadu have been working for the past several years in implementing a project called IFD (Integrated farm development model). Also called as LESA (Low External Input Sustainable Agriculture) the project is at present operational in about 32 villages in Erode district of Tamil Nadu.

Innovative model

According to P. Alagesan, Programme. Coordinator, IFD is an innovative model especially designed for small scale farmers in improving farm productivity in a sustainable manner through integrating farm resources by recycling farm and home wastes. "The main concept of IFD is to integrate the animal and human wastes into useful and productive components such as for the manufacture of vermicompost, pest repelants and biogas thereby reducing input coast for farmers," he said.

Bio pest repellants

For example, in villages, the urine and dung from cattle is usually washed into a drain or the dung is collected, dried and used as cooking fuel.

"But our IFD farmers collect the urine and dung in a collection tank and use it for generating biogas and manufacturing biogrowth promoters such as *Panchagavya* and *AmirthaKaraisal* to make bio pest-repellants," explained Mr. Alagesan.

The spent slurry from the bio gas plants used to make high quality manure by adding other farm wastes to it, and can also be used to breed earth worms.

The Hindu, 27.12.07

"To ensure food and fodder security our research team has been conducting several programmes to emphasize the importance of kitchen gardens. The size of the kitchen garden depends upon the family size and income (usually 2-5 cents). A limited supply of water channelled through a low cost micro irrigation system ensures a good harvest," he said.

High yielding green folder varieties are also grown in these gardens to provide fodder to the animals. By growing these fodder varieties, the cost of buying feed has come down to nearly 12 per cent, explained Mr. Alagesan.

Farmer friendly

Technology must be farmer friendly and IFD farmers have been trained on scientific storage of harvested produce. The farmers store their harvested grains in special grain structures called 'puccakoti' (Hindi word) and metal bins.

These storage structures have been able to minimize grain loss to nearly 20 per cent and also protect the harvested produce from pest and pathogenic infestations. Finally, the waste generated from the farmer's family is also not wasted. A eco-san toilet has been designed to collect the faeces and urine separately.

Rich nutrient

The faeces is covered with wood ash after every use and it falls into a soil pit and decomposes into a rich nutrient which can be safely used as manure for the field.

The urine is separately channelled to the kitchen garden where it seeps through the earh to nourish the plants.

Studies conducted in these villages have shown that about 35 per cent of external input cost has been reduced by effective utilization of farm and home wastes.

Forest regeneration

Use of biogas (2 cubic metre capacity has the potential to save about 210 kg of fuel wood permonth) brough down firewood consumption. In a village called M.P. Doddi about nine tonnes of fuel wood in a month has been saved which has a direct impact on regeneration of forest area around the region.

Respiratory problems commonly encountered by the rural women in smokey kitchens have largely been minimized.

UNICEF has identified this as an innovative model and has planned to replicate it in other partsof the nation.

For more information readers can contact Mr. P. Alagesan, Programme Coordinator, Myrada Krishi Vigyan Kendra, No: 57-Bharathi Street, Gobichettipalayam-638 452, Erode District, Tamil Nadu, e-mail : myradakvk@dataone.in, website : www.myradakvk.org, Phone: 04285 226694 and 226695, fax : 04285221176.

232 WATER BODIES WILL BE REVIVED BY '08: GOVT TO HC

'Proper sewage disposal facilities in 189 villages by 2009'

DELHI will be richer by 232 revived water bodies by June 2008 and 189 villages will enjoy "proper" sewage disposal facilities by the year 2009. This is part of the government's master plan to dispel water and sewage disposal problems.

A comprehensive roadmap submitted by the government before a Delhi High Court Bench led by Justice T.S.Thakur today has convinced the court enough to observe that "satisfactory progress" was on as regards the dual problems of the city-water scarcity and sewage disposal machanism.

The report-based on the minutes of a recent meeting chaired by the Delhi Chief Secretary-quoted an under-taking given by the Chief Executive Officer of Delhi Jal Board (DJB) that "the work of extending sewar facilities in villages will be taken up in a phased manner and targeted to be completed by 2009."

Informing the court that a topograhical survey of all 189 villages had already been carried out, the government submitted that 74 villagescould be connected with the existing peripheral sewar systems, 66 would be covered through. 37 stabilisation ponds and 49 would be covered through 19 Sewage Treatment Plants (STPs).

Confirming that tender documents of 164 villages with efficient treatment plants have been received, the government said tender action would be initiated from June 2007 after the completion of the technical scrutiny.

As regards the "revival and modification" of 629 water bodies indentified in the Capital, the Revenue Department-which has a lion's share of 476 water bodies in Delhi-said work was completed in 164, in progress on 77 and yet to start on 104. "Of the 164 completed water bodies, 80 shall be revived by June 2008," the report added.

The department, however, "promised" in the report to finish work on 68 water bodies by June 30, 2007, adding that three of its water bodies were under encorachment, while 119 others beyond revival.

The Indian Express, 10.05.07

The document highlighted a standing order by the Chief Secretary to various public authorities, including MCD, DDA and CPWD, to focus on the "regular maintenance" of water bodies with regard to engineering and health aspects, particularly to avoid them turning out to become breeding grounds for mosquitoes.

It also referred to the deliberations of the DJB regarding the use of STP treatment effluent to fill up dry water bodies.

The government counsel, however, submitted, "experts were against the practice as treated effluent would fast detriorate if "stored" at a place for several days."

"This (filling up water bodies with treated effluent) will bot be a viable option and the best course is to allow the water bodies to naturally fill up with rain water", the report said.

The report also referred to the directions given by the Chief Secretary to remove "waste" water from the water bodies and carry out their futher deepening.

"Only clear water with certain degree of purity should be stored in water bodies," the report quoted an order of the Chief Secretary.

The document mentioned directions given to Environment Secretary to ensure plantations along the water bodies and also to launch an educational compaign to motivate villagers for their upkeeps.

NAJAFGARH DRAIN TURNS SPORTS VENUE

To be developed for hosting water sports; sewage treament plant coming up

THE NAJAFGARH drain, one of the biggest carriers of the city's collective filth, may soon be a destination of choice for enthusiasts of boating, swimming and other exotic water sports.

Delhi Tourism, along with the Rowing Federation of India and the India Kayaking and Canoeing Association, unveiled, this ambitious concept on Sunday morning through a water sports festival at the quaint village of Badu Sarai near Najafgarh about 30 km from the heart of the city.

On a balmy Sunday morning the who's who of Delhi Tourism, the Indian rowing and canoeing fraternity, the Union Secretary for Sports, and a handful of curious villagers gathered under canopy to witness the spectacle. Teams of Border Security Force, Delhi Tourism, and Shivalik Sports raced with canoes and kayaks in the drain's black waters.

The organisers called it a first in Delhi. "This is the launch of a concept. The Najafgarh drain will give a huge fillip to water sports", announced Delhi Tourism head Sanat Kaul.

The concept is quite grand. Land around a stretch of 2-5 of the drain at villages Chhawla and Kangaheri will be developed into a huge tourism hotspot. The water body will have facilities for kayaking and canoeing as per international standards.

"This is a drian that retains water throughout the year. With proper implementation, kayaking and canoring, both of which are Olympic sports, will have an umprecedented boost in the country," said Avinash Kohli, president of the kayaking Association.

With picnic areas, hot-air ballon rides, naturopathy centres, cottages restaurants, an amphitheatre, cafes, clubhouses and spacious parking lots, the emphasis would be on Eco-Tourism, the organisers said.

"Visitors will have unique experience of camping on their natural habitat, naturopathy treatments in huts, seeing the manufacture of hand-made paper, serculture and many more such activities," the development proposal of Delhi Tourism said.

Central to the success of this giant exercise, however, is abundant clean, water, something the drain just does not have.

Once a storm-water canal mean-dering into the Yammuna, and flaunting a rich avian population, the Najafgarh drain has for long ceased to be a useful water body. Sewage links from Haryana and settlements in Delhi have turned its water into a thick black offensive-smelling liquid.

Delhi Tourism has a solution. It proposes a sewage treatment plant to clean the water of the course. "This way Delhi will have India's best facility for water sports and tourism. In the bargain, the neglected water body will also be rejuvenated," said Kohli.

The Indian Express, 21.06.07

A PANCHAYAT'S CLEAN SWEEP : TOILETS IN ALL HOMES

ASSAM : Earlier half the homes did not have toilets; Kamarbandha Gram Panchayat gets Nirmal Gram Puraskar

NIZARA Bora distinctly remembers the day several villagers came to see a latrine that her husband had installed-the first in the entire area-and also how several of them thought it was meaningless to have spent Rs 14,000 to construct it. That was way back in 1982.

A quarter of a century later, every home in the cluster of six villages that comprise the Kamarbandha Goan Panchayat is proud to have a toilet. It boasts of being one of the three villagers in Assam that has won a Nirmal Gram Puraskar from the Central Government for its achievement.

"It was a difficult task, becuase we had a large number of BPL families," said goan panchayat president Haraprasad Rajkhowa. "But we did it, and I must particularly appreciate the role of the women in motivating every household to own a latrine," added Rajkhowa, who went to New Delhi earlier this month to collect the Rs 4-lakh award.

Of the 1,263 houses under the goan panchayat there were as many as 533 which did not have a toilet, he said. "Most of these families were below poverty line and are not fully literate." Even among the 602 APL families, 22 did not have a toilet. Kamarbandha began the scheme in 2005. "Kamarbandha is a floodprone area. and malaria, diarrhoea and other water-bone diseases were common. But with total sanitation campaign becoming a success here, these health problems are gradually fading out," said Manjana Saikia, a woman member of the goan panchayat.

While the state as a whole is yet to bring down its percentage of people without access to sanitary facilities from an embarrasing 74 per cent, in Golaghat, the figure stood at above 82 till three years ago.

"One thing that was encouraging was that the people readily accepted the idea when we approached them with the total sanitation concept," pointed out Paban Kumar Dutta, assistant executive engineer of the Golaghat public health engineering (PHE) sub-division. Dutta is also the member-secretary of the Village Water & Sanitation Committee headed by the panchayat president.

"My husband was not sure what we would do with a sanitary latrine when the open field was free for use," said Arati Tanti of Raidongiya-Gandhibari village whose husband is a daily-wage labourer. "It took a lot of pestering on my part to take the scheme by contributing Rs 125 from our side," she added.

But having achieved this, what is worrying the people here is the three-km railway track that passess through this goan panchayat area. "I think we must write to Railway Minister Lalu Prasad to do some thing about the rubbish that the railway trains leave behind. Otherwise this Nirmal Gram Puraskar will be come meanigless," said Manbai Tanti, a mason.

The Indian Express, 21.06.07

SUCCESS STORIES RELATED TO NEW TECHNOLOGY

- Punjab potato farmer pioneers French fries
- Low budget technologies can usher in success for small ryots
- Trees and technology
- *iSd&ikfdkkSa ds cuus lykfLVd*
- *tc vkyw us cuk;k tk,xk lykfLVd*

PUNJAB POTATO FARMER PIONEERS FRENCH FRIES

YOU'VE HEARD of Indian Made Foreign liqfuor: Now, it is time for Indian-made French fries.

An agro-processing plant set up by local potato farmer Mandeep Singh is set to give Punjab's Jalandhar district the tag of being the first to have an Indian company indigenously produce French fries in the country.

Singh has joined hands with the Punjab Agro Industries Corporation (PAIC) for a Rs 80 crore state-of-the art potato processing plant built by the joint sector company, Satnam foods.

Canada-based Mc-cain, the world's largest maker of frozen French fries launched work for a plant in Gujarat two years ago, but the Punjab unit is the first plant owned by Indians built with technology from European countries. PAIC has a 12.5 per cent equity stake in the project, which is likely to generate direct employment for 400 people.

Industry officials say French fries sold in Indian restaurants and fast-food eateries have been largely made from imported frozen fries.

"A majority of the top-class eateries in India Import French fries from the Us-based Lamb Weston and McCain at Rs 120 per kg. We supply the same quality for Rs 60 per kg." said Mandeep Singh, who took up potato farming in 1984. "We have already begun delivering on orders to Kentucky Fried Chicken (KFC) Outelts in Delhi. Many more branded food glants are approaching us," he added.

The plant was made operational recently and makes French fries out of locally grown Chip Sona 1 variety of potato developed by the Shimla-based Central Potato Research institute (CPRI). Paul Thachil, chief executive officer of Mother Dairy, which is a key player in processed foods, said in Delhi that building a plant in India was not difficult but the key question was of the suitability of the potato. "Technically we can have a plant here. Anyone can do it, but the question is of the quality of potato," he said. Satnam foods is targeting a turnover of Rs. 50 crore for 2008-09. It controls about 2,300 acres under contract farming in Punjab; Singh himself own 1,000 acres of cultivated land.

The company will launch an eatery in Jalandhar, which expects to compete with McDonalds on both price and quality.

Hindustan Times, 28.11.07

LOW BUDGET TECHNOLOGIES CAN USHER IN SUCCESS FOR SMALL RYOTS

The cost of making *Amirta Karaisal* for an acre comes to Rs. 5-8

When the application of even some of the best technologies fails to yield a good harvest, farmers tend to either sell their land or borrow money for planting a second crop. With sucessive failures and mounting debts, agricultural activity comes to a grinding halt. In extreme cases some poor farmers go to the extreme of committing suicide to escape from problems.

Immediate need

What farmers need at the moment is a low budget technology that is efficient and proven. With more than 80 per cent of our farmers having small holding (3-4 acres), the need for such technology is imperative.

Ms. Rajareega is a successful woman organic farmer of Raasi farms at Muthupatti village in Sivaganga district of TamilNadu, who is growing of a number of fruits, vegetables and trees in her 50 acre farm.

"If I am able to sucessfully manage this vast area only by organic methods, I don't think small farmers having less than 3 acres can face any difficulty in managing their lands," she said.

Minimal investment

Organic manures and sprays such as *Panchagavya, Dasagavya and Amirtha Karaisal* have also been regarded as low budged technologies by farmers. "Though *Panchagavya* and *Dasagavya* are quite popular among organic farmers, (refer *Farmer Note Book,* July 13 and May 18, 2006 for information on their manufacture) not much is known about *amirta karaisal*.

"Compared to both the *gavyas* I find *amirtha karasial* more effective in the control of pests and increasing crop yeild," said Ms. Rajareega.

How does one manufacture and use it?" It is made by mixing about 10 kg of desi cow dung (in the absence of a cow about 5kg of dung of a desi buffalo or bull may be used), 5-10. Its of cow's urine, 1-2 kg of jaggery, a handful of soild (soil taken from the field bunds), about 2 kg of anyone of the following millet varieties; black gram, (called *Ulundu* in Tamil), green gram (*Pasi payiru* in Tamil), horse gram (*Kollu* in Tamil), or cow pea (*Thattapayiru* in Tamil) and 2 its of sour curd," she said.

Water is sprayed on the millet and it is allowed to germinate. After 3-4 days the germinated millet is ground well into a paste and mixed along with the other cattle products.

The Hindu, 21.02.08

The entire solution is diluted in about 200 lts. of water and poured inside a cement or plastic drum.

The solution should be stirred well once every 2-3 days, 3-4 times a day, in a clockwise direction and can be used after a week.

It is advisable to filter this solution through a clean piece of cloth and store it in plastic cans to be used later.

Spraying time

The ideal time for spraying the *karaisal* is between 3 p.m and 7 p.m. In the absence of any sprayer, farmers can mix this solution along with the irrigating water.

They can store this solution in a drum with a tap attached at the bottom and place it next to the irrigating tank, according to Ms. Rajareega. When water is opened from the irrigation tank for irrigating, the solution can also be released along with it. For an acre, about 200 litres of*karaisal* is sufficient. It can be sprayed once or twice a month.

The *karaisal* mixed with irrigating water acts as a tonic for the soil and makes it rich in nutrients. Earthworms which live deep under the soild surface, come to the top to feed on this solution.

Their constant burrowing makes the soil more porous and helps in free air movement to the roots. The burrows also act as efficient rain water harvesters.

Effective medium

"But farmers should realise that the*karaisal* by itself cannot help plant growth. It is an effective medium or culture in which thousands of beneficial micro-organisms and bacteria essential for crop growth are created," she said.

Manufacturing cost

Regarding the cost of manufacturing this*karasial* she said, "Most of our farmers have cattle with them and so getting the dung or urine is not a problem.

"They can buy the jaggery, and millets. In fact for making the *karaisal* only Rs. 5-8 may the expense. But, if one opts for chemicals. But, if one opts for chemicals, then one has to spend Rs.500-Rs.700 per acre."

The solution is effective for all crops. Even if one sprays more than the prescribed more than the prescribed quantity the crop will not die. Unlike chemical sprays it does not have any negative impact on the crop, according to her.

Readers can contact Ms. Rajareega, Raasi organic farms, Muthupatti, via Kallal, A. Siruvayal (post), Sivaganga district, Tamil Nadu, email: rajareega@rediffmail.com, mobile: 9865-582142 and phone: 04565-284937.

TREES AND TECHNOLOGY

Jharkhand locally means "forest area", and forest in jharkhand extend to over 23,605 sq km representing 29.61 per cent of the total geographical area of the State. But the biodiversity of State is under severe threat from human induced activities, industires, mining, settlement, developoment projects and removal of forest products, overgazing and forest fires. Increasing realisation of the fact that forests not only provide benefits to mankind to mankind but also help in conserving the environment has created concern for their protection and preservation.

Advances and innovations in Information Technology (IT) in the past 20 years have enabled significant changes in the practice of forest management. Stimulated by developments in business administration and industry, computer-based decision support systems (DSSs) have been improving the quality and transperency of decision making in natural resource management. DSSs provide support to solve ill-structed decision problems by integrating database management systems with analytical and operatonal research models, graphic display, tabular reporting capabilities, and the export knowledge of scientists, migers, and decision maker to assist in solving specific problems.

The assessment of biological rich areas using latest IT tools such as satellite images brings out distinctivenss of the landscapes as driven by pattern of richness, endemism, biological corridors, community composition and diversity. The analysis made also presents the full range of distinct natural communities and ecological status at the landscape level.

Satellite maps bring out the landscape capable of maintaining the viable population species and sustain important ecological process and services. This information is of valued importance in rugged and in hospitable regions.

In the period since DSSs came to prominence, there has been a shift from automatic cartography to geographic information systems (GIS). The potential power of GIS goes beyond producing maps by providing mechanisms for the input, storage, analysis, and use of spatial information. GIS has increased the acceptance of DSSs and led to the development and application of spatial decision support systems (SDSSs). Spatial data and the analystical capabilities of GIS within an SDSS have been necessary to address new demands in strategic and operational planning for natural resource management.

Sunday Pioneer, 30.03.08

Interdisciplinary approach with remote sensing, GIS and GPS technologies are being conceptualised to bring about the development in such regions through creating/updating, disseminating information related to resources and aspects of development. Such a customised information system aims to integrate various datasets at microlevel (village, panchayat and block). Attempts have also been made to integrate and generate comprehensive information including compouterisation of record of right (RORs) for Lohardaga and Jamshedur districts in Jharkhand as pilot projects. Land Record Information System (LRIS) is also being development to address issues development and poverty alleviation, tribal development, natural resource management and utilisation, wasteland, watershed, prioritisation, infrastructure planning etc, thus finally leading to overall regional development. Information will be made available and accessible to the people ranging from policy makers, administratiors, and plan executors to researchers and academicians, NGOs and villagers.

In the past few years, IT tools have profoundly altered our ability to obtain and utilise information, data, and knowledge. The speed of change in information technologies is far outpacing our understanding of their impact on relationships among individuals, socieites, and States. In particular, attempts to understand the impacts these technologies have on political interaction and policymaking processes have not yet been analysed in detail.

The mindset in the forest sector in these regions has to change, in order for them to remain viable in the face of the challenges brought by ICT development. The use of ICT has helped drive the shift from top-down government concepts to more open network "governance", which in turn has enabled ICT to influence goverance. An increasingly complex and networked world requires an equally dense institutional infrasturcture to facilitate international coordination. ICT provides many of the essential tools; however, it does not reduce the multiplicity of values and conflicts of interests that governance arrangements have to accommodate and manage.

Technologies, moreover, evolve only when embedded in a social context and not independently. As organisational arrangements evolve considerably more slowly than technologies, it will take some more time for the technical possiblities of today to become fully integrated into national governance arrangements.

The writer is Special Secretary, Department of Information Technology, Jharkhand. He has written this article in his personal capacity.

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Navbharat Times, 19.06.07

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Rashtriya Sahara, 21.06.07

GENERAL SUCCESS STORIES

- Saving environment, the traditional way
- The greening and greening of Auroville
- viy Qy ugh gk ldrh ujxk
- Million-dollar TURN AROUND
- Real India lives in villages
- uhykcj igyh lk{klj xke ipk;r
- Noida Police, NGO rescue Black Buck from village
- Farmers air problems at Science Congress
- Independence with dignity
- Doing their bit for the development of rural India
- Villagers gear up to save Yamuna
- Two missions for the 60th anniversary
- Ghana park witnesses a major weeding operation

SAVING ENVIRONMENT, THE TRADITIONAL WAY

Tribal students from Dahanu villages make elder discard pesticides, gelatine sticks and electricity to kill fish, pitch for age-old methods

TRADITIONAL is sometimes eco-friendly. Five students of a school in the tribal Aine village near Dahanu realised this while working on a project on fishing methods adopted by their elders.

Aged between 12 and 13 years, the students of Gram Mangal School-run by an NGO-chose aquatic bio-diversity in Aine and Dabhone villages of Dahanu, Thane, as the topic for their project.

Armed with interesting findings after a research of year-and-a-half, the students will now represent Maharashtra at the National Children's Science Congress in Baramati in December-end and the National Science Congress in Visakhapatnam in January next year.

Located next to each other on the Mumbai-Ahmedabad Highway, Aine and Dabhone villages are surrounded by forest andhills and are located on the banks of Susri and Surya rivers, respectively. The predominantly tribal population of the two villages, comprising the Kathkaris and Mahadev Koli communities, doesn't have much to choose from to eke out a living. During rainy season, they cultivate paddy. After monsoon they either migrate or ake charocal, wihch is used by dyemaking factories on the coast. And their staple diet is rice and fish.

When the students began interviewing the elders, they realised that the techniques the villagers used to catch fish not only affected the marine life but also proved harmful for their crops.

"They speinked insecticides or pesticides in the rivers and streams to kill fish," says Sikin Karmoda (13), one of the students who will represent the state at the Pune conference. But how could they eat poisonous fish?" It's easy-just chop its head, remove the gut (intestine), wash it properly and cook it," says Karmoda.

The students found that the villagers also resorted to power theft. They connected a cable to the live wire on an electricity pole and left it in the water for about 10 minutes, killing all the marine life in the the area. At other times, the villagers used gelatine sticks-easily available in the region

The Indian Express, 19.12.07

famous for quarring.

"These techniques are not only dangerous for those who catch fish, but also harmful for the ecological system," points out Rohidas Sumda (13), another team member.

"The density of fish in the river had decreased, the water was getting polluted and we were losing out on our major diet. Plus, the crops were getting affected," Sumda said. The students realised that the traditional fishing methods, the tribals had discontinued, which where far more effective and enviornment-friendly.

Among them was the use of juice of wild fruits to blind an make fish unconscious. "It made catching fish easier and also didn't pollute water," said Suresh Aardi, a former sarpanch of Dabhone village.

The students and villagers later took out rallies and even staged street plays to drive home their message. "Initially, the villagers were quite hesitant," the students say, but slowly their campaign started havingthe desired effect. Last February, the panchayat adopted a resolution to penalise eirring villager. "Though we can say that villagers have stopped resorting to environmently harmful techniques altogether, the number of such incidents has reduced by 80-90 per cent. Themka adds.

THE GREENING AND GREENING OF AUROVILLE

It has been probably the largest and most successful reforestation programme outside forest areas in India

In the early 1980s I visited Auroville for the first time. There were vast expnses of what appeared to be desert: stretches of land with nothing growing on it except the odd palmyrah tree. The soil seemed to have gone in a lot of places. There were ravines everywhere: signs of a land that been badly looked after for generations. There must have been forests here at one time. They had been cut, to build Pondicherry, among other things.

Dotted over the barren landscape, there were patches of vegetation: trees that has been planted by the early settlers in Auroville. A strange bring of humanity had evolved in response to the environmental crisis: the Auroville greenbelter, who lived just for putting trees in the ground. The oldest trees at the time were about 13 or 14 years old.

Around this time the then brand-new Department of Environment of the Government of India gave what was for that time a large grant for continued planting. The rest, as they say, is history: what is probably the largest and most successful reforestation programme outside forest areas in India.

Initially the trees planted were largely exotics from other parts of the world. The Australian Acacia grew where nothing lese did. Later on, they began seeding and replication themselves, preparing the ground for other species. For the last two decades the emphasis has moved entirely to planting indigenous species, some of them only found in the relict and degraded patches of coastal forest still found in the area. The secret behind the planting is simple. Water conservtion, and the buildingof bunds and chekdams, are the first priority. Large, healthy seedings are then planted. It is actually not even necessary to plant. If water conservation measures are taken and the catle and goats are kept out the land will regnerate itself. After a couple of decades there is very little difference between the land that has been planted andthe land that has been left to regenerate after itself.

Leaving land to generate by itself is demonstrated best by observing palmyrah that dotted the landscape. Once grazing nearby was stopped, they started developing small patches of vegetation

The Hindu, 28.02.08

around them, with seven or eight key plant species. Birds sitting on these palmyrahs dropped the seeds while in transit. Each palmyrah acted as a nucleus for fresh growth. This then spread. I wonder how many such 'aunt' trees there are, found in different kinds of forest. Once these are identified, planting will just involve putting a few of these into the ground.

The birds

The most dramatic changes that have occured here becuase of the reforestation are the changes in bird life. In 1995, Sapna Anne from Pondicherry University enumerated birds in four different parts of Aurovile. At one extreme there was one of the last patches of degraded land still left in the area. At the other extreme was a place that had been planted some 27 years earlier. The first patch had 25 different kinds of birds; the last had over 70. The total number in Auroville was about 110 then. Now we record species new to Auroville about once a year.

The open-country birds, such as larks, have disappeared from the afforested areas. They have been replaced by woodpeckers, barbets and minivets. The Great Horned Owl, a magnificent predator, nests in the ravines around Auroville. Unfortunately it is hunted-something we have been unable to stop. Black Eagles have also recently begun nesting.

Mongoose are seen everywhere, and jackals can be heard at all times of the year. Peafowl were introduced by a zealous birdwatcher a couple of decades back, and now they have multiplied and spread all over Auroville. The butterfly populations have also shot up, thanks to the many flowering trees that have been planted.

Where Auroville has failed is in ducomenting this planting, and encouraging others to see it and replicate it. It is not difficult to do. What we do have, though, is a botanical garden where indigenous plants from a coastal forest are available for anybody who wants to plant them. Now that we celebrate our 40th year in existence, this is the most important message we can give this planet.

Writer is a former member of the working committe of Auroville

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Navbharat Times, 01.04.08

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MILLION-DOLLAR TURN AROUND

Till a decade ago, this was just another drought-ridden, crime-infested village. Now it's a land of millionaries. Hiware Bazaar's success story.

The courtyard houses 15 Jersey cows-together they produce over 350 litre of milk every day-and overlooks three acres of plantations, a double storeyed new house and two tractor. In the centre in a rose tree. The only aesthetic touch in Maruti Gopala Thange's largely practical world? Not really. "So many VIPs drop by at the village these days, it becomes very difficult to run around for flowers to felicitate them. So we planted rose trees in the house only to make things easy," said Thange, who till 15 years ago worked as a daily labourer for 15 years ago worked as a daily labourer for Rs 40 a day. Today his daily income from his dairy and agricultural produce is about Rs 3,000.

A few metres away and you are on Amruta Baba Pawar's land-15 acres of lush green on which Pawar grows jowar, onions, peas and fodder. The yield has been good enough for him to rebuild his house, send his son to the army and buy a vehicle. Much like Satish Ramdas Thange-his five-bed-room mansion has a car, a jeep and a tractor and his son goes to an English school outside the village.

Pawar, Thange and Satish Thange are all part of a script that dared to turn round the fortunes of Hiware Bazaar, a village 17 kilometers from Ahmednagar, Maharashtra. In a little over a decade, it changed from being a drought ridden, crime infested village to one of the most prosoperous villages in the country. Over the year, this turn-around has earned Hiware Bazaar awards like the Best Ideal Village in the Stage, National Productivity Award and Sant Tukadoji Maharaj Cleanliness and Sanitation Award. The village was among the few that witnessed the phenomenon of 'reverse migration', when over 40 families who had migrated from the village to cities returned between 1992 and 202.

Today, however, Hiware Bazaar has a whole new claim to fame. Of the 216 families in the village, one fourth are millionaries with an income of over Rs 10 lakh a year. Apart from these 54 millionaire families, the per capita income of the village, at Rs 24,000, is almost thrice the average of the top 10 percent of rural areas nationwide and the average income has apparently risen 20 times in the past 15 years.

The Indian Express, 03.02.08

While in 1992, 168 of the 180 families lived below the poverty line, the figure went down to 53 in 2000 (among 210 families) in 2007. "Our aim for 2008 is to make this figure zero. The Gram Sabha will give land to these three families and make sure their status is elevated," said Poptarao Pawar, the sarpanch of the village who scripted the amazing turnaround after he took over in 1992.

"The main problems the village faced were that it fell in the rain shadow area with an average rainfall of just 350-400 mm, heavy soil erosion, degradation of natural resources, and scarcity of drinking water, fodder and wood for fuel. Given the situation, there was mass migration and those who stayd bajck indulged in crimes and drank all day. The village became a punishment posting for government officers and teachers," said Pawar, a B.Com graduate, who as sarpanch decided to use funds from government schemes like the Employment Guarantee Scheme to regenerate the village's natural resources-soil, water and forests-and put together a transparent administration led by strong gram sabha.

The gram panchayat build 40,000 contour trenches around the hills to conserve rainwater. Ten lakh trees were planted. Bans were implemented on grazing on agricultural land, on digging of borewells and on planting water-intensive crops like bananas and sugarcane. The village also banned liquor, advocated the one-child-per-family norm and spruced up education.

The number of wells increased from 97 to 217, irrigated land went up from 120 hectares in 1999 to 260 hectares in 2006. Last year, the yield from onions alone was Rs 1.5 crore.

"Our is the first village in the country to initiate a water audit," said Pawar, who had been invites to Tokyo two years ago to present a paper on watershed projects and will now go to Turkey for a world conference on ground water management.

There's more: crime rate is zero while literacy rates have shot up. Since 2002, HIV testing has been made compulsory for anyone getting married. Almost every family has a person in service-in the army, as a teacher or with the government. There has been no migration from the village in the last 10 years.

"Why would anyone want to migrate when the village offers a must better quality of life today," asked 49 year-old Kashinath Padhiye, who was mockingly called 'Sahukar' by villagers till a decade back for doing anywork asked of him as long as he was paid Rs 30 for it. Today, he owns 31 acres, a new house and an annual income of over Rs five lakh-and can rightfully lay claim to the title.

REAL INDIA LIVES IN VILLAGES

SKY-KISSING CONDOMINIUMS and ritzy multi-level malls may be the order of the day in rapidly changing Indian cities but the real India will continue to live in its rural outbacks for nearly 50 more years, the United Nations has predicted.

Breaking the urbanisation myth in a "projection report" released on Wednesday, the UN said that though most countries would see rapid urbanisation, India would continue to have the largest rural population in the world until 2050.

It also said though half of the world's 6.7 billion people will start living in cities by the end of this year itself, "55 per cent of India's population will be living in urban areas, amounting to 900 million people" only by 2050.

The report titled "2007 Revision of World Urbanisation Prospects" provided official UN estimates and projections of urban, rural and city populations of all countries up to 2050, including India.

Asked why only 30 per cent of Indians lived in cities despite apparently aggressive urban growth, noted planning expert and convenor of the Indian National Trust for Art and Cultural Heritage (INTACH)'s Delhi chapter, AGK Menon, said this could be a reflected of the successes of rural employment schemes and agricultural triumphs. "However, there is a clear need to have much more private entrepreneurial initiatives in rural India," he said. The UN said Indian planners "indeed should be trying to foster economic dynamism" in rural areas, as 70 per cent of the country was rural.

Rural development, the report added, should increasingly focus on creating more employment opportunities in the nonfarm sector. It said India was expected to urbanise "much less than China and, therefore, it is expected to remain the country with the largest rural population during most of the future decades."

Concurring with the UN projections, Menon said creating non-farm employment was crucial to rural development, which alone could stem chaotic migrations to places already having a resource crunch.

Hindustan Times, 28.02.08

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Rashtriya Sahara, 13.02.08

NOIDA POLICE, NGO RESCUE BLACK BUCK FROM VILLAGE

A JOINT team of Noida police and people for Animals (PFA) on Monday rescued an eight-month-old Black Buck from Datawali village in Dadri area. The Black Buck was kept in the basement of an old house in the village.

The animal was later shifted to Delhi zoo for rehabilitation. "There is no place in western Uttar Pradesh to shelter wild animals. So we decided to shift wild animals. So we decided to shelter wild animals. So we decided to shift the animals to Delhi zoo where the Black Buck would get proper medication and rehabilitation," said Saurabh Gupta, PFA's wildlife officer.

According to PFA volunteers there were several reports of Neelgal. Dear and Black Buck being kept and smuggled.

"The time we had specific information about a Black Buck being held captive in the village. A joint team raided the houses and rescuced the animal," said Gupta.

The owner of the houses, Zaheema khan, however, fled before the team could reach.

"We have registered a case under Wildlife Protection Act. Unless we arrest the person, it is difficult to know whether the animal was kept for smuggling or for its meat," said a senior police officer.

Black Buck, said a PFA volunteer, is an endagered species kept in Schedule I of Wildlife Protection Act and is generally found in Rajasthan.

Black Buck has also been some jungles of western Uttar PFA volunteer said the assused got the animal from some nearby Jungle.

Hindustan Times, 15.01.08

FARMERS AIR PROBLEMS AT SCIENCE CONGRESS

MSSRF organises a satellite-based virtual conference of farmers from five States

VISAKHAPATNAM: The 95th session of the Indian Science Congress, being held-here, could well go down in history as a unique experiment, as it provided an oppotunity for the farming community to voice its problems and aspirations directly to the annual gathering of policy-makers and scientists.

The Indian Space Research Organisation, the Andhra University, where the session is being held and the Chennai-based M.S. Swaminathan Research Foundation (MSSRF) oganised a satellite-based virtual conference of farmers from seven locations in five States-Thiruvaiyaru in Tamil Nadu, Moosapet in Andhra Pradesh, Jeypore in Koraput district of Orissa, Yavatmal and Waifad in the Vidarbha region of Maharastra, and MSSRF.

The conference focused on the travails and dreams of women farmers as Indian agricultre is increasingly getting feminised because of migration of men to cities and towns in search of jobs. It is estimated that at present, women account for about 70 per cent of the farm workforce.

The problems voiced by the women farmers from the seven locations varied from lack of adequate credit to problems of security as they had to go to their farms at night for pumping water as power supply is erratic. A woman farm labourer also sought creches to take care of their children when they go out to work and another sought medical and risk allowance.

There were demands for drought-resistant seeds and seed banks in the villages; government-run shelter for abandoned cattle so that they do not stray into fields; and women-friendly agricultrual tools and tractors.

The conference was organised as part of the village resource centre scheme of ISRO.

Over the last two years, the space agency has set up 315 village resource entres (VRC) across the country, which are connected through satellite. ISRO has been using the network to disseminate farm-related information and as a discussion forum for the farming community. Every day, ISRO runs a four-hour programme under the scheme.

The Hindu, 06.01.08

Empathising with the women farmers, Union Minister for Women and Child Development Renuka Chowdhary, who chaired the two-hour session, said her Ministry would also soon be a part of the network and use it extensively, with focus on aspects such as their health and nutrition security.

She also announced that she would convence a meeting of shoe manufactures and discuss the possibility of producing affordable gum boots for use by women farmers while working in the fields and campaign strongly for joint title deed for agricultrual land.

"It is highly atrocious that nutrition level among women was very low," she said.

Later addressing a press conference, Dr. Swaminathan said a charter based on the points raised by the women farmers would be included in the final recommendations of the Science Congress. The nine-points charter, among other things, called for issue of joint title deeds as it was absolutely essential for the women farmers to get access to Kisan credit cards and institutional credit, and for special insurance schemes to cover them from occupational hazards like leptosporosis infection in Paddy fields.

Support services

It would also urge for support services such as creches anganwadis to reduce their burden, and bring about changes in the curricula of agricultrual universities to make students more gender sensitive.

V.S. Hegde, Head of the VRC programme of ISRO, said the number of VRCs in the country would be increased to 4,000 within two years.

INDEPENDENCE WITH DIGNITY

For more than three decades, Joe Madiath has been helping villagers in Orissa empower themselves.

The devastating super cyclone of 1999 is fresh in the memory of many in Orissa and others in India and across the world. But few remember the cyclone that ravaged Orissa, Bengal and Bangladesh in 1971. India, particularly Eastern India had to bear the burden of 10 million refugees from the erstwhile East Pakistan. At a time when world attention was focussed on Bangladesh's birth pangs a great cyclone hit the same part of this globe.

Beginnings

Joe Madiath led a group of 400 volunteers from Young Student's Movement for Development (YSMD) to West Bengal. They worked in West Dinajpur, Malda and a few other districts but Joe soon found that, while international aid was pouring into Bengal, the devastation in Orissa was not on anyone's rader, So he shifted base and pitched tent in Kendrapara area of Cuttack district with 40 volunteers.

After some basic work, the group decided that providing irrigation facilities would be the best way to put the victims back on their feet. So, they formed a lift-irrigation co-operative of villagers and helped augment resources. But once the facilities were operational the big land-owners reneged on their earlier promis to cede some of their land for common benefit. Big landlords got the maximum benefit smaller ones got less, and the landless were left high and dry Joe decided this was not his calling. The group handed over the irrigation points to the locals and left.

But Joe's heart was with the poor. He had seen the misery of have-notes at close quarters. When travelling through Orisa-in Kalahandi one day and Keonjhar the next week-one Collector spotted him and asked if he would like to do something for the tribals of Ganjam district. And Joe landed in Mohuda village to what turned out to be his life's calling.

A dairy cooperative

Joe visited Berhampur, Ganjam's largest town, in response to Collected D.P. Bagchi's call, travelled intensively and met many. Among them was Ramanth Das. President of the District Co-operative Bank. Around that time, a mahant donated 100 acres of land for a milk producer's co-operative. Ramanath Das asked Joe to take a part of the land on lease and develop a dairy farm. Joe went back to Chennai and kerala and returned with five volunteers and 30 acres were taken on a 35-year lease.

The Hindu, 19.08.07

This was when I first met Joe. In 1974, some of us were involved in civic improvment of Berhampur besides weekend health work in another village near Mohuda.

On Sundays and holidays, scooters rolled towards the hills and we held clinics. Young doctors from MKCG Medical College volunteered, and the HOD, Paediatrics, helped with immunisation kits. Soon sisters of the newly-started Missionaries of Charity joined in. Thanks to Mother Teresa's volunteers, there was no more scarcity of medicines.

After a few years of dairy and horticulture work, Joe realised that milk produced in Mohuda did not benefit the local people. Tribals considered milking a cow a "sin". All produce was going to Berhampur.

Again, he decided this was not his calling either. Soon Joe and his group formed Gram Vikas, which was registered in 1979.

The dairy farm, horticulture and healthcare were going on apace. Microfinance had made a small beginning. One nationalised back opened a branch at Mohuda. Simultaneously, the poor triblals were realising the power of a group. A massive *andolan* was launched to shake off their burden of debt and bonded labour.

Not only were small holdings of land, but even their children, were mortgaged to the Sahukars who lent them money and supplied liberal liquor to men-folk. Women, under the leadership of Anthya Madiath, made a consistent effort to wean the men from liquor. The freshly-enacted Act against bonded labour came in handy. Before long, land came back to the rightful owners.

Benefits of biogas

Meanwhile, Joe had seen the benefits of biogas (earlier Ramanath Das had taken him to a tea-snack joint where the fuel was produced from cow dung in a makeshift plant). The Government too was thinking on alternative energy, and offered liberal subsidy.

So, Joe decided to provide power to the people with locally available material. Till date, Gram, Vikas has installed more than 55,000 biogas plants in Orisa, one of the smallest States.

While Gram Vikas was on its way to becoming the torch-bearer. In the biogas field, Joe was visiting places, sharing and learning about empowerment and development. Much of the mortality in rural areas was related to water and hygiene.

So, an amibitious project was started to get rid of this scourge. Clean, continuous running water for each home through taps in toilet, bathroom and kitchen was the target. Technology for building over-head storage tanks, laying pipelines and such work was the domain of government engineers.

Joe and his team sought to demystify this. Soon the villagers, with help from a core group of trained people, dug wells, drilled borewells and put 40 ft. high tanks in place. Pumps were installed

where electricity was availale. In remote hamlets, where it was not, the gravity flow principle was used with ingenuity.

Simultaneously, toilets and bathrooms were coming up in thousands, all built by the villagers. Gam Vikas lent a helping hand. All toilets and homes were of one type, irrespective of the owner's caste, social or economic status. It was an "all or none" decision for the village.

Key contributions

Participation and involvement are the key words in this idea of rural development. Each village has to contribute Rs. 1000 to the "core fund", each villager according to his ability. Every family also had to contribute local materials, labour and some cash. Gram Vikas gives the "social costs" in the form of cement, stell, pan and door. Village boys and girls are given free masonry training.

What used to be bathing ponds were turned into farms for pisciculture. Fish became a source of revenue for many a village. Social pressure plays a great part in ensuring norms.

Young rebel

A Marxist at heart, Joe's initial protest was at age 12 when he organiswed younsters in his native Kerala town to get better working conditions for workers in family farms. His father packed him of to distant. West Bengal for schooling.

Returning at 16, he was active as a student leader in college. At 21, while he was President of Loyola College, Madras, he went on a solo cycle trip across the country, right up to Sikkim. He found that poverty knew no language or caste.

At the threshold of 60 today, Joe Madiath has set a target of reaching 1,20,000 families by 2010 for his clean water and toilet scheme. It will benefit a million people in all. He says this is achievable. Joe knows this cannot be done within the confines of Orissa State Gram Vikas volunteers are interacting with like-minded NGOs in Jharkand, Chattisgarh and Madhya Pradesh to take the movement forward.

Recognition

Such sustained effort at development is recognised sooner or later. Last year, Gram Vikas won the India NGO Award and the Kyoto World Water Grand Prize at Mexico City. In February this year, Joe Madiath was voted one of the 10 recipients for the Skol Awards for Social Entrepreneurship. In material terms, it means three-years grants of more than 1,000,000.

With sincertiy and good managment at the top, each dollar will benefit the poor and the marginalised. The world would be a better place if Madiath and Mohuda inspire some "citizens of tomorrow".

That would help a million a poor Indians stand up with dignity.

DOING THEIR BIT FOR THE DEVELOPMENT OF RURAL INDIA

Pradan, an NGO, helps young people use their skills for the benefit of the rural poor

NEW DELHI : Opting for a real life re-run of Shah Rukh Khan's Bollywood film 'Swadesh', Generation Y is taking a break from its "dollar-fuelled lifestyle" to do its bit for India's rural development.

Not waiting for politicians, activists or even non-resident Indians to come to the aid of the country's rural poor, professionals and students are increasingly heading towards "helping the real India keep pace with development."

Helping them do their bit for rural India is a non-government organisation, Pradan, which has taken on board young people with varied educational backgrounds and motivated them to use their knowledge and skills for the benefits of the rural poor.

"Each year we get youths from across the country and for Delhi recruitment camps are organised at Delhi School of Economics, Delhi University's Sociology Department and Lady Irwin College. We have got candidates also from Jawaharlal Nehru University," says Sujata Nath, an executive in the Human Resource Unit of Pradan.

Cashing in on the trend among the youngesters "to do something meaningful and make development a holistic process," she said, Pradan had been acting as a medium to provide these youth a 12 month-long field-based apprenticeship, which prepared young people for working in villages.

The group presently has over 200 Pradan professional spread out in small field-based teams across 2,000 villages in remote and poor pocketsof Bihar, Jharkhand, Chhattisgarh, Madhya Pradesh, Orisa Rajasthan and West Bengal, pursing a full-time career in rural development.

Exposure to problems

The programme gives its participants exposure to the problems and potential of working

The Hindu, 07.09.06

among the disadvantaged. While young people from West Bengal, Bihar and Orissa top the list of younsters opting to work for rural India, those from the metros too are catching up.

"The apprenticeship programme provides an opportunity to assess the pluses and minuses of a life in grassroots work. It also gives times to reflect upon alternative career choices, and to experience the living conditions and broad content and pace of work in villages," said a member of Pradan. Said Madhau Khetan, a Delhi University commerce graduate and a pass-out from IIM-Lucknow who has been associated with Pradan for over a decade now: "After working in the corporate sector for two years I realised that my work was not meaningful and that was when I decided to switch over and contribute towards ensuring that development in India was holistic. This is something I would strongly recommend to all youngsters. The groups gives you the chance to contribute towards making India really shine."

VILLAGERS GEAR UP TO SAVE YAMUNA

To protest against the building of Commonwealth Games Village on river bed

NEW DELHI : They may be lacking in scientific acumen, but when it comes to comprehending the need to save a river, which is both sacred and life sustaining villagers from rural areas in and around the Capital are unambiguous in their resolve to protect the Yamuna flood plains an important recharge zone. Hundreds of villagers some residing far away from the river banks have turned crusaders to save the Yamuna from the onslaught of consturction work.

These villagers supported by students from school and colleges have joined in the protest initiated by environmentalist and water expert against the building of the Commonwealth Games Villages on the river bed.

Pointing out that the riverbed is a national heritage, apart from being the source of living for many, villagers say they are let down by the Government's resolve of not shifting the site of the Games Village. "We met over 200 people who had gathered at a panchyaat held at Mundka village in West Delhi on Saturday. While we apprised them of the destruction that the Games Village would unleash on the river, the villagers were vociferous about the need to strengthen the campaign and promised their support," said Diwan Singh of the Yamuna Satyagraha, an agglomeration of the Yamuna Jiye Abhiyan, URA, Natural Heritage First and several other non-government organisations.

The villager's who worship the river have agreed to spread the campaign to cover the entire rural belt in Delhi.

"They were explained the importance of the floodpain in terms of recharging a huge amount of flood water for the city. The total recharge capacity of the flood plain is equivalent to 3/4th of Delhi's annual demand. We cannot affort to lose such an invaluable area to concrete structures. We also told them that the river is being channelised through subterfuge, various bridges are being built with width much less than the floodplain, bunds are build at public cost to safeguard newly build structures," Mr. Singh said.

Even as the Government maintains a stoic silence on the issue of changing the site for the construction of the Games Village, the villagers have drafted the blueprint for their campaign. Chaudhry Narender Singh on behalf of the Mundka village and the panchayat has agreed to raise the issue among the larger "khap" of 17 villages, headed by Kerala village.

"After that the next step is to take the issue to the umbrella khap of 52 villages of North-West Delhi, headed by Bawana village from where the issue will go to the supreme khap of 360 villages of entire Delhi, headed by Palam village," Mr. Singh explained.

The movement will spread through the entire rural belt with support from the Yamuna Satyagraha and a joint meeting of 17 villages will take place in the city next week.

TWO MISSIONS FOR THE 60TH ANNIVERSARY

Much remains to be done to make India hunger-free and to achieve a rural knowledge revolution

On the eve of the 50th anniversary of India's independence on August 14-15, 1997, the then President K.R. Narayanan listed our adhrence to a democratic system of governance and our lunching a green-revolution in agriculture as the two most important achievements of the first 50 years of what Jawaharlal Nehru christened. "India's tryst with destiny." At a consultation held at the M.S. Swaminathan Research Foundation in Chennai at the beginning of the new century, it was proposed that two major goals for the 60th anniversary commemoration should be a hunger-free India on the lines proposed by Mahatma Gandhi in 1946 at Naokhali, and accelerated progress in human resource development through a knowledge revolution in rural India. Based on a series of consultation, two Missions 2007 were launched through multi-stake holder consortia, one for eliminating chronle under and mal-nutrition, and the other for rural knowledge connectivity.

Unfortunately, the progress made since 1997f in the elimination of child, maternal, and adult malnutrition as well as in improving our rank in the U.N. Human Development Index has been poor in relation to our capacity to achieve them. It will therefore be worthwhile to review briefly here we are today.

Mission 2007: a hunger-free India

Over 200 million children, women, and men go to bed now partially hungry. Jointly with the World Food Programme, MSSRF scientists have analysed the caused for the peristenceof widespread chronic hunger and presented the available informationin two atlases relating to food insecurity in rural and urban India. These atlases provided valuable guidelines for the preparation of a road map for the elimination of chronic, hidden, and transint hunger and resulted in the development of the following seven point action plan. This plan was developed on consideration of both affordability and ease of implementation.

1. Restructure the delivery of ongoing nutrition support programmes on a life cycle basis.
2. Universalise the Public Distribution System (PDS) and enlarge the composition of the food basket by including a wide range of nutritious cereals millets, grain legumes and tubers based on local preferences.

The Hindu, 28.07.07

3. Introduce of food-cum-fortification approach for eliminating iron, iodine, zinc, and vitamin A defliciencies and accord priority to overcoming chronic and hidden hunger in pregnant women, and in children in the 0-2 age group.

4. Promote the organisation of community grain and water-banks by local comunities with the gram sabhas providing social oversight, and promote the concept, "store food grains and drinking water in every village.

5. Pay particular attention to safe drinking water, primary health care, and nutrition education.

6. Enhance opportunities for on-farm and non-farm employment through the bio-village model of human-centred development and improve the productivity and profitablity of small farms (small farm families constitute more than 50 per cent of India's population) through integrated crop-livestock farming systems and improved post harvest technology.

7. Introduce a Food Guarantee Act combining the features of the food-for-work and the rural employment guarantee programmes; the use of food as currency benefits both 'farmer's and when consumers, since farmers will produce more if consumption is improved. In addition, household nurtition security is strengthened.

While releasing the Food Insecurity Atlas of rural India at New Delhi on April 21, 2001 Prime Minsiter Atal Bihar Vajpayee commendedthe goal of Mission 2007: a huge free India in the following words:

"Democracy and hunger cannot go together. A hungry stomach questions and censues the system's failure to meet what is a basic biological need of every human being. There can be no place for hunger and poverty in a modern world in which science and technology have created conditions for abundance and equitable development.

The sacred mission of a "Hunger-free India" needs the cooperative efforts of the Central and State Governemnts local self government bodies, non-governmental organisations international agencies, and above all, our citizens. We can indeed banish hunger from our country in a short time. Let us resolve today to make this Mission sutler stantially successful by 2007, which will mark the sixtieth anniversary of our independence."

The National Commission on Farmers also endorsed the above strategy for achieving sustainable nutrition security. The Common Minimum Programme of the United Progressive Alliance Government contains a commitment to achieving universal nutrition security as soon as possible. Unfortunately, an integrated strategy is yet to be put in place with the result that the goal of a hunger-free India is nowhere near accomplishment.

Every village a knowledge centre

The second Mission 2007 relates to the knowledge and skill empowernment of rural families

with the help of information and communication technology (ICT). Mission 2007; every village a knowledge centre stimulated developments such as the following:

1. The Indian Space Research Organisation (ISRO) launched a village resource centre programme at the block level involving satellite connectivity and teleconferencing facilities.
2. The Department of Information Technology, Government of India, launched a common service centre programme designed to cover 100,000 villages.
3. The Ministry of Panchayati Raj, Government of India, decided to provide to each panchayat the necessary ICT infrase-governance programme.
4. ITC ltd decided to expand its e-chaupal programme in order to cover 50,000 villages.
5. The MSSRF has organised so far 80 village knowledge centres and 15 village resource centres.
6. Many State governments, public and private sector companies, academic and financial institutions, and NGOs have organised village knowledge centres in different parts of the country.

Thus, Mission 2007 has triggered a national tele-centre movement for bridging the urban-rural digital divide and for ensuring knwoledge connectivity in areas relevant to the day-to-day life and livelihood of rural families. The Government of India has included knowledge connectivity as an important component of Bharat Nirman or a New Deal for Rural India.

A national alliance has been formed for Mission 2007-a broad based coalition of government, non-government, academic, and business sectors committed to the cause of taking ICT to all the 600,000 villages of India. In addition, with the generous assistance of Tata Trusts, the MSSRF has established a Jamsetji Tata Naional virtual Academy for Rural Prosperity (NVA) and a Jamsetji Tata Training School. The NVA has currently 985 Fellows from India and 25 foreign. Fellows drawn from Afghanistan, Philippines, Sri Lanka, Kenya, Nepal and Nigeria. These grass roots academicians are the torch-beares of the rural knowledge revolution.

From August 15, Mission 2007 programme will grow into a Grameen Gyaan Abhiyan, a national movement for knowledge empowerment of rural families. It is hoped by 2010, the Abhiyan will cover every village and home or hut in the country.

The Green Revolution helped to increase the productivity of crops such as wheat and rice. The knowledge revolution, on the other hand, helps to enhance human productivity and creativity in several dimensions. The Grameen Gyaan Abhiyan will be based on the following organisational structure.

1. Every block will have a village resource centre with the help of ISRO.

2. Every panchyayat will have a gyan chaupal or village knowledge centre with the help of the Department of Information Technology, the Ministry of Panchayati Raj, civil society organisations, NABARD and financial institutions, multilateral donors, the acedemic and private sectors, and bilateral and multilateral donors.

3. The last mile and last person connectivity will be achieved through combinations of the Internet and community radio, and the Internet and the cell phone. For example, fishermen in catamarans will be guided through cell phones on wave heights and location of fish shoals.

While connectivity can be achieved, content creation and capacity building will be the greatest challenges. The content has to be dynamic, demand driven, locale specific, and in local language.

A major role of the Grameen Gyann Abhiyan movement will be the establishment of linkages between scientific know-how and field levle do-how. For this purpose, village resource centres and village knowledge centres will have to be intimately linked with appropriate programmes such as the Sarva Siksha Abhiyan for literacy, the Yuva and Mahila Sakthi Abhiyans of the Minstry of Panchyati Raj, The National Rural Health Mission, the National Horticulture Mission, the National Rural Employment Guarantee Programme and so on.

To expand the number of those being provided relevant information and services in as well as on methods of safe handling packaging and marketing a quality "literacy movement based on Codex Alimentarius standards of food safety is being launched in association with the Central Food Technological Research Institute, Mysore. The Grameen Gyan Abhiyan wil launch a knowledge on the wheels programe for the provision of services relevant to rural livelihood. To start with, soil health care, water conservation and management, eye care, and post harvest technology will be covered with mobile vans designed by eminent insititution such as Sankara Netralaya in the case of eye care.

As a single step, the rural knowledge revolution is likely to have the largest beneficial impact on the physical, economic, and social well-being of the more than 700 million people living in village. Poverty will persist under conditions where the human resource is under-valued and material resource is under valued and material resourced are over-valued. Once the Grameen Gyan Abhiyan spreads, there will be a perceptible impact on the parameters governing human resource development. This, is turn, will lead to a paradigm shif from unskilled to skilled work in village. This is the pathway to achieving the fist among the U.N. Millennium Development Goals, namely the eradication of hunger and poverty.

(The Writer was Chairman of the National Commission on Farmers)

GHANA PARK WITNESSES A MAJOR WEEDING OPERATION

A vast area now free from Prosopis juliflora, a tree species

BHARATPUR : The authorioties are making hay while the sun shines at the world famous Keoladeo Ghana National Park near here. There is very little bird life this season in the absence of water for the second consecutive year in the wetland, yet the birders are chirping merrily as, making the most of an adversarial situation, the part management has carried out a masive weeding operation here with active support from the local villagers.

Over 6 sq km area of the 29 sq km park a World Convention wetland--is now free from Prosopis juliflora, a tree species which had spread not only in the 11 sq km wooded area but also to the grass lands, taking advantage of the changes in the eco system in the wake of recurrent droughts. The inhabitants of as many as 15 villages in the park neighbourhood are happy.

"This kind of removal of Prosopic juliflora has been unparalleled anywhere in the country. The acitivity has brought incredible goodwill to the park from the local villagers besides helping the native vegetation to come up," said seasoned conservationist and Keoladeo-watcher Harsh Vardhan after a recent visit to the sanctuary.

There was nothing the park managment could have done about missing water which was to come either from good rains during the monsson or from the panchana dam situated in the neighbouring Karauli district. As the State Government, afraid of the reaction from the farmers in the downsteam area of the Panchana, refused to listed to the desperate appeals for release of water from the envrionmentalists and the park officials, there was nothing much to do-or so it seemed.

"In the 1980s, the water supply to the park started getting reduced. Taking advantage of the dry conditions. Prosopic julflora started spreading. Within a span of a few years it not only took over the entire woodland but also infiltrated the unique grass land.

Even the wetland, spread over 11 sq km, got engulfed with this weed," says P.S. Somashekhar, Conservator, Forest.

The Hindu, 27.10.07

Prosopis julliflora has vigorous coppicing power. The park authorities had made several attempts in the past to kill the mother trees but could not succeed as even the burnt stumps sprouted with great vigour. The mammal population in the park such as Blue bulls, chital, wild boar and feral cows, which consumed the ripe seeds, helped its propagation. The only option seemed to be uprooting each individual trees.

"By 2006, the situation got very critical. Then we formed on Eco Development Committee in February this year and registered all the villagers. Stategically Ram Nagar was selected as the first village to start this experiment," notes Sunayan Sharma, Filed Director, Keoladeo Ghana.

The Ram Nagar experiment, carried out under strict supervision of the forest personel, proved successful. The villagers, grouped family wise, were allocated plots of 10X100 metres area each from where they removed the mother trees, new seedlings and saplings, plucking them by root.

The vilagers-men, women, children, once shooed away by the park authoritiesfor attempts at cuttive grass were allowed to take away the wood so procured.

SUCCESS STORIES RELATED TO
WILD LIFE CONSERVATION

- Tiger conservation
- dkYgk ij e cuxk ^gkFkh xko*
- Rhino experiment a success in Dudhwa
- Where peacocks enjoy pride of perch
- Surgery restores vision to rare tiger cub

TIGER CONSERVATION

The new budgetary provisions for conservation of tigers have not come a day soon. In the course of presenting the budget the Finance Minister said, "The tiger is under a grave threat" and allocated Rs. 50 crore for the National Tiger Conservation Authority.

The bulk of the allocation will be used for raising a special armed tiger protection force. Conservationists are delighted that the Finance Minister has resonated to the need of the hour.

Neglected area

There are no two opinions about the fact that bedrock of convervation is committed front line staff led by able dedicated officer. This has always been a neglected area. The reserves are more often than not either understaffed or staffed by under trained men past their prime.

Men with pot-bellies for whom wildlife conservation is just another posting are a frequent disturbing sight in many reserves. 'This needs to be changed on a war footing. Seasoned wildlife biologists like Dr. Ullas karantha have realised the importance of this, after years of work in the field, and are strong votaries of well equipped front line staff.

The formation of a special armed tiger protection force has to be done with great circumspection. It should not become just an other run of the mill para-military force. It has to be populated by youngsters driven by passion for conservation. The tranning invariably has to measure up to the standards of NSG. I would recommend that the desire for protection should be instilled the way insurgents mould their recruits. Men whose sole aim in life in conservation and conservation alone.

The moulding of the special force requiresthe expertise force requires the expertise of social scientists also. Present day conservation is inextricably mixed with human ecology.

The men in uniform have to be adept at building bridges with local communities whether the area assigned is inviolate or not. Even though attempts have been made in tiger reserves for the participation of local communities in conservation this has to be streamlined.

The picture changes from reserve to reserve and application of one success *per se* in another reseve is not a practical proposition.

The Hindu, 16.03.08

Intelligence gathering

Another tool that has to be honed to perfection is intelligence gathering. Sophisticated methodologies of intelligence gathering have to be*de rigueur* as part of the training. Our efforts to data have been in fits and starts.

Men in uniform also have to be protectd against the viles of manipulators who come in the garb of human rights activists. A poacher needs to be handled tough. A kiss on the cheek is not what is needed.

There have been incidents in the past where upright officers have been hauled up before court on trumped-up charges.

A case in point comes from Munnar. The incident occurred a few years back. A forester known for his dedication to conservation caught some smuglers from a notorious belt in malappuram.

The culprits who resisted arrest had to be handled rougly. The men were remanded to cutody. The criminals who got bail got themselves admitted to a hospital in Malappuram and subsequently filed a case before a human rights commission. The poor guy had to rush off the Malappuram several times.

Due to archaic rules in force the harried guy had to spend money from his pocket to defend himself. You can very well imagine the plight of the guy.

Such incidents should not occur. The state should come to their rescue with alacrity. While dealing with human rights violations, why don't the authorities concerned think about the atrocities committed on wildlife? Why not a small thought for the denizens of the wild which cannot articulate their right to live?

Strong will and support of the local politicians is a must if the initiative is to take root. There are incidents where many conservation initiatives ha ve been smashed to smithereens of the local politicians.

A consensus needed

A consensus has to be build at the national level that no politician should come to the rescue of a poacher. Sounds farfetched but a beginning has to be made somewhere.

By highlight tiger, which is at the apex of the food pyramid, we are ensuring the perpetuation of our biodiversity. Now is the time to act, Tomorrow will be too late.

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RHINO EXPERIMENT A SUCCESS IN DUDHWA

NEW DELHI, March 29: The experiment of translocation and breeding of the highly endangered onehorned species rhinoceros to Dudhwa national park which started in 1984 in Uttar Pradesh now appears to have been firmly established. The park, according to an official count, has 27 rhinoceroses.

The Dudhwa are had once been a natural habitat for rhinos but the species became extinct because of large scale hunting. Habitat conversion to agriculture result-ted in drastic reduction of the animal population According to legend the last rhino survivor was killed in the terai of Uttar pradesh in 1878 by a local raja.

Dudhwa national park, established in 1977, is among the eight areas identified for protection of rhinoceros. Five of these protected areas are in Assam two in West Bengal and Dudhwa in Uttar pradesh.

According to the latest official count, the highest population of rhinoceros was estimated to be nearly 2000 in Assam spread over Kaziranga (1855), Orang (six) and Manas (four) national parks and in Pobitora (81) and Laokhowa (one) sanctuaries. West Bengal's Jaldapara wildlife sanctuary had recorded 108 and in the Gorumara national park the rhino count stands at 27.

Official sources said today that except for Dudhwa and Manas where the count was carried out in 2008 the rhino population estimates for the rest of the parks and sanctuaries is that of 2006.

Wildlife experts are satisfied with the increase in figures at Dudhwa. Eight years ago the rhino population at the notional park stood at 18. In April 1984, five rhinos-two males and three females-were picked up from Nagon area of Assam and loaded into a specially drafted Russian Aeroflot plane to be airlifted from Guwahati to Delhi Loaded in trucks in the national capital they were brought to Dudhwa to be released in the specially marked 27 sq kms area of the park.

But two females died soon as they could not bear the stress of the tranquiliser and long flight. The remaining three was not a viable population and the seed population was supplemented by four female rhinos from Nepal in 1985 obtained in exchange for 16 elephants. They are kept in the Zone with the Suheli river in the south and guarded by an electrified enclosure which prevents them from straying into the sugar cane fields and also protects them from poachers.

The translocation experiment was to ensure survival of the species. Wildlife experts had suggested that dispersal of the animals areas of its previous home range was important and the Dudhwa national park was selected.

The Sunday Statesman, 30.03.08

WHERE PEACOCKS ENJOY PRIDE OF PERCH

In the village of Chincholi Morachi, the national bird is not just protected, it is revered

The high way from Pune to Ahmednagar is an interesting one. Farmers instructional white peaked caps zip past you, somke in fancy new cars. Signs of prosperity are apparent, although the region battled with severe drought just a couple of years ago. A few kilometres down the highway, beyond the small town of Chikrapur, a left turn reveals the road that leads to our destingation-the village of Chincholi Morachi. Loosely translated, it means the abode of peacocks and tamaring trees, both of which are in abundance here. For, this quaint little village, almost 60 km from Pune, is home to a population of 2,000 people, as well as an equal number of peacocks.

As you interact with people here, it's quite evident why the national bird enjoys special status at Chincholi Morachi. In this village, the peacock is not just protected, but also revered-so much so that this is one place where its numbers have steadily increased over the years. " Ten years ago, there were almost 600 peacocks in our village. Now, the number is more than three times," says Maheshrao Gorde, the village sarpanch. For most of the villagers, the peacock is not just a bird, it is also a symbol associated with the village diety Khandoba. "The peacock is the *vahan* (vehicle) of Khandoba, and is therefore special for us," says Goprde. Perhaps it's a reflection of this special relationship that even when the region was reeling under drought and there was not a drop of water to drink, the villagers ensured that there was still some available for the peacocks, recalls S. H. Phalke, who teaches at the local agricultural institute. "Most people here treat peacocks too can have their fill.

No one in the village remembers if ever a peacock was harmed in Chincholi Morachi. The only instance that a few villagers can recall happened almost 25-30 years ago, when a boy from a neighboring village, who had come as part of marriage party, threw a stone at a peacock and injured it. The peacock died soon after. The incensed village filed a case with the district administration against the boy's family. Only when the family apologized saying that the boy was a minor, were matters sorted out, says P.S. Gawade, the principal of the local school.

Sunday Times of India, 17.02.08

The peacocks, too, have repaid the villages in their own wa y. Not only do they help in keeping snakes at bay, they also act as a natural biological control by eating the insects on the crops. In addition, the village has now become something of a tourist attraction, thanks to the peacocks. Last year, for instance, the Maharashrta tourism department gave Chincholi Morachi the status of a tourist village. Work has been completed on a tourist bungalow and alread y, say villagers, there have been a few tourists from abroad. People from nearby areas, especially schoolchildren, are regular visitors too.

However, there is a flip side to this rising tourist interest, says Phalke. "People come at all hours to see the peacocks and many are disappointed when they do not get a glimpse of the birds. This is because peacocks come out of their habitats only in early morning and evening. But in their enthusiasm to watch the peacocks, sometimes tourists encroach on their habitats also. Which is why, recently, there have been instances of peacocks moving away from the village."

Hopefully, this is a situation that will be rectified soon, as an NGO has chipped in with plans to create a peacock sanctuary near the village. And if all goes well, the national bird can continue to enjoy its pride of place in chincholi Morachi.

SURGERY RESTORES VISION T O RARE TIGER CUB

Top eye surgeon conducts first-ever cataract operation on the species

NANCHANG (CHINA): A South China tiger cub has regained its eyesight after what is believed to be the first ever cataract remove surgery on the critically-endangered big cat species.

The cataracts of the one-year old cub were removed on January 27, said Zhao Wei, a Nanchang Zoo official in Jinxed Province. The operation lasted an hour.

It was born in Shanghai on February 8 last year and was sent to Nanchang after six months.

Zoo workers suspected it was unable to see because it often ran unto walls and fences and could only sniff for food.

In December, the cub was diagnosed with congenital cataracts in both eyes, a result of inbreeding.

South China tiger cubs are prone to congenital defects because almost all the 72 tigers bred in captivity nationwide are descended from six tigers captured in the wild in 1955.

"We were very concerned over whether the cub should be operated on at all," said Mr. Zhao. "Some zoo workers said the species was too rare to take the risk."

Chinese veterinarians and doctors have reported success in cataract removals on Siberian tigers, but had never operated on a South China tiger. Zoo managers finally decided ti take the risk, and entrusted the job to a top eye surgeon at a hospital affiliated to Nanchang Universit y.

"I removed cataracts from thousands of humans, but it was the first time I have operated on a tiger," said Dr. Liu Fei. "Cats have a third eyelid and their anatomy is quite different from humans."

She invited the hospital's best anaesthetist, Prof. Xu Guohai, to be part of the operating team. For safety considerations, Mr. Xu consulted doctors who had worked on Siberian tigers and giant pandas for advice.

As the sensors on the selectrocardiograph for human being could not penetrate the tiger's thick fur, Mr. Xu had to use his hands and auscultatory devices to monitor the animal's heart and

The Hindu, 05.02.08

breathing. Zoo workers said the cub was recuperating well after the operation. "Apparently. He can see several mitres and has endeared himself to human beings."

The South Chine tiger, also called the Amoy or Xiamen tiger, is thought to be the ancestor of all tigers, according to the World Wildlife Fud.

It is considered critically endangered, mainly due to the loss of habitat. In the early 1950s there were about 4,000 in the wild. By 1996, however, they numbered only 30 to 80, according to the World Conservation Union's Red List of threatened species. Today, the tiger is believed to be extinct in the wild.

To save the captive tigers from extinction, London-based Save China's Tigers and Chinese Tigers South Africa signed an accord in 2002 to send between five and 10 South China tigers to South Africa to learn how to survive in the wild.

In November, a cub was born to a South China tiger pair in South Africa, the first to be born outside China.