

The Prime Minister's Council on Climate Change has approved a National Mission for a Green India to increase forest cover. "The mission aims at increasing the quantity and quality of 10 million hectares of forest area, achieving an annual carbon dioxide sequestration of 50 to 60 million tonnes by 2020," the MoEF said

HERE, CONSERVATION IS ON THE HOUSE

K S Gopi Sundar

In a tiny pond in the heart of Uttar Pradesh, cracked clay covers a dry wetland floor one summer morning. Though dry, the pond bustles with activity. Children and adults alike work away chunks of clay by hand, and painstakingly carry them to waiting bicycles to be ferried away. Farmers have built up a virtual wall of clay-chunks beside the pond. At first sight, the untrained eye and the heart that beats for things wild may label this "disturbance". For wetlands in the Gangetic floodplains, this activity spells differently - "life".

Each year, monsoonal water surges and cattle activity churns up these ponds in the floodplains, creating a slurry of silt and clay. This rich slurry settles down, and thanks to the clay, clogs the floor. In ancient times, wild ungulates such as the wild buffalo, Sambar deer and maybe even elephants and rhinos likely wallowed in this rich mud. This ensured the clayey mixture was removed, the wetlands remained deep, and allowed the recharging of groundwater. Nowadays, farmers serve the purpose of large mammals and remove the clayey mud to repair walls with and set up dykes in fields.

This tradition of many centuries speaks of a civilization literally living off the land, timing human activities to the seasons. Villages and towns had designated wetlands meant for such common use. Lotus, silt, clay, molluscs, wild birds, roots, tubers, vegetables, reeds for thatching roofs, and of course, water. The list of resources that these common lands provide is very long. They sustain tens of thousands of cattle and people who cannot afford fields to harvest natural resources, and buffer the effect of droughts and floods. These wetlands still dot the landscape, even in thickly-populated states like Uttar Pradesh.

Though dots, the mosaic of common lands amid fields serves another important function - providing habitat for wildlife. These are species with the capability to live in farmed landscapes alongside humans. In Uttar Pradesh they include birds like the Sarus Crane - the world's tallest flying bird. The world's largest known population of these globally-threatened cranes live in the cultivated and heavily-populated landscape of Uttar Pradesh. Common lands combined with the re-



Photos: K S Gopi Sundar/ICF

spect and compassion of farmers towards such species allow this persistence. The list of species surviving here is actually in the hundreds, including leopards, foxes, jackals, and more than 300 species of birds.

Corruption, growing human populations, demand from industries, and mechanized farming has worked to convert many such common lands for private and commercial uses. Today, wetlands and grasslands are the most threatened of ecosystems in the country. These habitats have reduced to specks in most areas and are in real danger of going extinct. A lifeline comes in the form of the Supreme Court ruling of February 1, 2011, on the eve of International Wetland Day.

The apex court ruled the transfer of common lands for any other use, private or commercial, illegal. This landmark judgement also calls for restoring areas lost in the past, and revokes rulings by states that permitted long-term conver-

sions to be considered as naturalized. Huge expenditure or political connections, said the bench, is not a justification anymore. This visionary judgement evokes centuries of traditional living styles. Making this ruling work on the ground will not be easy. But the decision provides rather sharp teeth to panchayats and other stakeholders. It underscores traditional rights, and will enable our landscapes to remain multi-functional - provide food for the masses, and retain invaluable ecological functions like biodiversity conservation.

Given the increasing demand for land and water to produce food and amenities, the needs of wildlife are increasingly at risk. Creating new inviolate spaces is ur-

Wetlands in the heart of thickly populated UP double up as common lands for farmers and conservation hotspots for a wealth of biodiversity



GOOD EARTH

Grandma Of The Forest



US oil giant Chevron was fined \$9.6 billion last week for polluting the Ecuador rainforests, among the heaviest-ever penalties for environmental damage. Behind this verdict is Maria Aguinta, an indigenous villager, who knows little of the official language or the legalities involved. "Before I die they have to pay me for the dead animals, and for what they did to the river, the water and the earth," says 61-year-old Aguinta at her home in the remote Orellana province where pollution caused by 30 years of oil drilling and spillovers from accidents has clogged the marshes

Tribunal to claim relief from Coca-Cola

The Kerala assembly passed a bill to set up a special tribunal to claim compensation from Coca-Cola for the losses caused by its plant at Plachimada to the people of the area. The CPM-led LDF government rushed through the bill on the final day of the current assembly session

Coral reefs headed for wipeout?

The world's coral reefs could be wiped out by 2050 unless urgent action is taken to stop threats posed to the "rainforests of the sea", the US's National Oceanic and Atmospheric Administration said. Warmer seas, ocean acidification, shipping, overfishing, coastal development and agricultural runoff all pose a threat

Calming effect: Tree canopies serve as sound absorbers



SOUND BARRIER: Banyan and jamun trees on the roadside could be effective "noise absorbers"

Sudeshna Chatterjee | TNN

Mumbai: If you thought roadside trees only help cleanse the air and add to the green cover, think again. Certain tree canopies act as effective sound absorbers, and depending on the shape and density of foliage, can cut down noise levels, says a recent study carried out in Mumbai over two years.

"A triangular crown shape is the most effective tree canopy to reduce sound, where the pressure resisting the sound at the base of the triangle is more and tapers towards the top," says Payal Rane who undertook noise-mapping of Greater Mumbai from 2007 to 2009 as part of a UGC doctorate project. "An ellipse form is the worst, while more uniformly round ones were moderate. Trees like jamun and banyan were found to be the best sound absorbers."

In a canopy, several leaves overlap each other and sound filters through this arrangement. Rane studied the filtering effect on sound by placing various counts of leaves and passing different frequencies through this layer, based on which the extent of absorption was calculated. More than 300 kinds of trees were studied. The denser a canopy is, more is the noise abatement, says Rane.

"There is not enough work done on noise absorption of plants or evidence as to how much sound is absorbed and by which specific plants," says Dr Ambika Joshi, associate professor of botany at Jai Hind College. "Also, because the effect of noise pollution is slow to show, the authorities did not create adequate awareness, with the result that even on a no-honking day, the noise level readings are pretty high."

Using a basic sound-level meter and oscilloscope, Rane mapped the stretch from Churchgate to Andheri on the basis of decibel levels. "Noise-mapping records noise as is actually present in a location and compares it to the ideal noise levels," says Rane. "It causes awareness and hence enables legislators to take suitable measures."

The next step, the hunt for a sponsor to extend the research, particularly in an urban scenario and identifying indoor plants that can bring the calm inside cramped city homes.

Energy efficiency sting on rebound?



Amit Bhattacharya | TNN

Improving efficiency has become a mantra for reducing carbon emissions. The Indian government too, taking a cue from developed countries, has enshrined it in the country's climate policy. The logic is simple: better efficiency leads to energy savings which in turn reduce the country's carbon footprint. But is there a spoiler in this plot? A controversial new study says improvements in efficiency have a rebound effect, triggering a surge in energy demand. Rebound, it says, could not only wipe out gains made by savings but raise carbon emissions.

"There's growing evidence that energy efficiency can, surprisingly, increase energy consumption rather than decrease it," says Michael Shellenberger, president of the US pro-thinktank, Breakthrough Institute, which authored the study.

Shellenberger says the report is the most extensive review to date of the evidence for rebound, hardly a new concept in economics but ignored by climate policymakers.

For instance, the IPCC's fourth assessment projects energy efficiency as a key strategy in reducing global energy consumption. The International Energy Agency says improved energy efficiency in buildings, industrial processes and transportation could reduce global energy needs in 2050 by one-third.

The UPA government has set up the National Mission for Enhanced Energy Efficiency. In the US, the Obama administration hopes to achieve a bulk of its emission reduction pledges made at Copenhagen through efficiency measures.

ENERGY OVERHEADS: Each of these "solar trees" at a California parking lot generates more than 17,000 hours of clean energy per year

"The implications are serious for climate and energy policy," says Shellenberger. "Energy efficiency measures that pay for themselves are good for the economy but are not guaranteed to reduce energy consumption, and may...increase them."

How does rebound work? The report says efficiency measures reduce the price of goods and services derived from energy, which leads economic actors to respond to changing prices - through consuming more energy or rearranging consumption by substituting cheaper energy services for other goods and services.

At a macro-economic level, energy efficiency improves productivity - a key driver of economic growth which raises energy demand. In a developing economy such as India, improved efficiency often releases unsatisfied demand.

A paper on rebound effects in India, written in 2000, cited a project to replace kerosene lanterns with solar lamps in a powerless village. The switch led to an increased demand in lighting - kerosene now only supplemented the use of solar power. Further rebound was noticed as villagers sold their unused quota of kerosene in neighbouring villages.

Improved efficiency is the basis of the industrial revolution and is crucial to economic growth. But, says the study, its complex relationship with demand and growth needs to be studied before efficiency is factored in as a way of curbing carbon emissions.

GREEN LOGIC WITH A TWIST

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