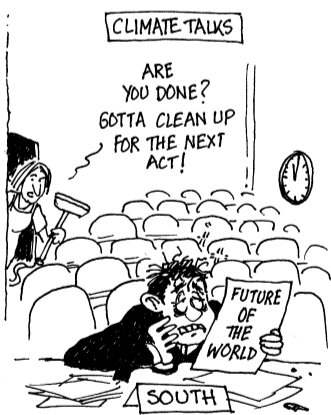


INSIDE

Forests as habitat	2
CDM hitches	3
All about sinks	4
Opposing interviews	5
After limbo: comment	6

Without the heat of public opinion and constant scrutiny, governments can easily fall into the trap of creating cooperative frameworks that fall into a pattern of 'business transactions' — a mode of cooperation in which two parties benefit mutually while others can suffer.

—Anil Agarwal,
Founder Director,
Centre for Science and Environment



The Centre for Science and Environment is a non-profit organisation committed to advocating for a better future.



EQUAL RIGHTS TO THE ATMOSPHERE

EQUITY
WATCH

SPECIAL EDITION #3

UNFCCC / CoP-8

NEW DELHI

OCTOBER 28, 2002

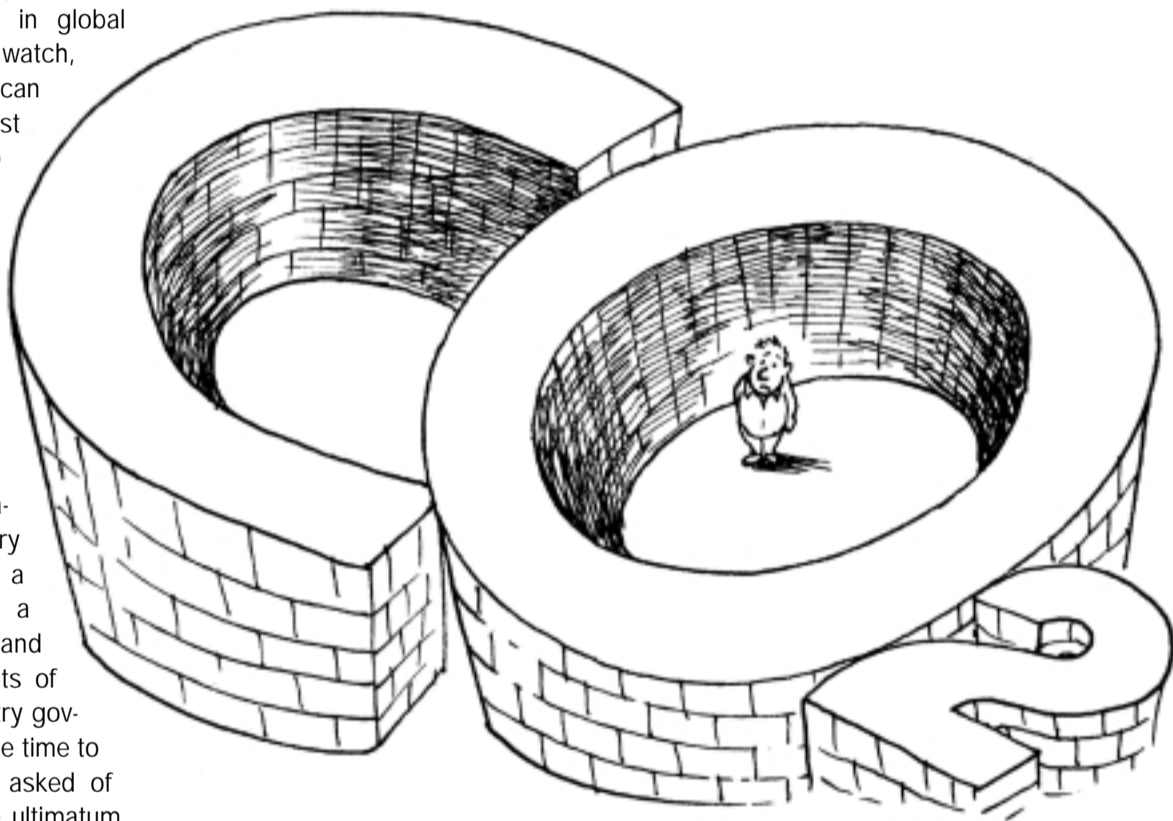
Sink OR Sting

Civil society has truly attained fly-on-the-wall status in global negotiations. It can watch, but have no say. It can buzz, only to be swatted. Most negotiations have turned into such quick sleight-of-hand between nations, that civil society is never given either time or opportunity to express an opinion, before key decisions that have a deep impact on their lives are taken.

Take for instance, the Clean Development Mechanism (CDM), the jiggery-pokery that metamorphosed from a perfectly good proposal for a clean development fund, and jumped out of the dark nights of Kyoto. Even developing country governments were hardly given the time to understand what was being asked of them, before being given the ultimatum of either accepting it, or taking responsibility for the collapse of the climate negotiations. When did civil society, particularly civil society from developing countries, ever have a say in whether they wanted the CDM in the first place?

Just like the Kyoto Protocol, they were left to make the best of what they were given. Initial rejection turned to helpless acceptance. While some Southern representatives tried to demand — are still demanding — that the rules of CDM be somehow fashioned to meet at least some of their needs, others settled down to receive the sop of money that was thrown in, for either brokering or carrying out projects. Right and wrong went out of the window, as they became partners in a mechanism that was literally bartering their future for peanuts.

This has been happening in other global environmental negotiations, legally binding or otherwise. Despite protests from a global society that knew from experience that collaborating with industry was akin to entering into a pact with the devil, the UN, the last hope for neutrality from shortsighted economics for many poor countries, entered into a Global Compact with corporations. More recently, *vox populi* suffered another cold shoulder at the World Summit on



Illustrations: RUSTAM VANIA

Sustainable Development. They opposed voluntary, mostly bilateral partnerships, but a list of such deals still formed part of the final package. While some simply tried to ignore the partnerships, hoping they would fade away for lack of attention, others were tempted by promises of lucre to participate in deals that could eventually hammer the final nail in the coffin of multilateralism.

Come to think of it, we didn't have much of a say with the Kyoto Protocol either — we were just left to defend a drivelling document, driven by desperation into believing that it was the best we would get, all things considered.

CoP-8 is the appointed scene of an important discussion that will have a direct impact on local communities. This is the discussion on sinks. We were not able to keep sinks out of CDM despite the associated uncertainties. Yet again, we are driven to desperately seek a silver lining. There is potential. Sinks could be the one way of ensuring that not all CDM proceeds line the pockets of the rich in industrialised countries (to broker, verify and monitor CDM) and the rich in developing countries (to design and carry out the projects).

The one way of ensuring that profits from trading go directly to local communities, and benefit them by creating livelihoods, is to ensure that the rules for sinks give them total control. Not simply a meek sentence asking that communities *participate* — that much abused word, the dictionary meaning of which should be changed to "I dictate, you participate" ever since institutions such as the World Bank appropriated it to gain social acceptance for their work. Instead, communities should truly be given the upper hand in sinks projects. In this, we cannot accept any last minute surprises.

The scene of CoP-8 — in a developing country with a high potential for sinks projects and a large population of local communities directly dependant on forests, where several local communities are represented — puts civil society at an advantage to drive this point home. If we don't make sure this happens, then it is time we had a serious rethink about our future in UN negotiations that give us so little say in the fashioning of our future.

It is time, then, that the citizen-fly on the wall learns to sting. ■

ALL SAID AND DONE

SUNITA NARAIN

Full circle



I remember how I first learnt about global warming. It was in the late 1980s. My colleague Anil Agarwal and I were searching for policies and practices to regenerate wasted common lands. We quickly learnt to look beyond trees, at ways to deepen democracy, so these commons — in India, forests are mostly owned by government agencies, but it is the poor who use them — could be regenerated. It became clear that without community participation, afforestation was not possible. For people to be involved, the rules for engagement had to be respected. To be respected, the rules had to be fair.

In the same period, we had a green environment minister; data released by a prestigious US research institution completely convinced her it was the poor who contributed substantially to global warming — they did 'unsustainable' things like growing rice or keeping animals. Anil and I were pulled into this debate when a flummoxed chief minister of a hill state called us. He had received a government circular that asked him to prevent people from keeping animals. "How do I do this?" he asked us. "Do the animals of the poor really disrupt the world's climate system?" We were equally foxed. It seemed absurd. We thought that the poor were victims of environmental degradation. Here they were now, complete villains. How?

With this question we embarked on our climate research journey. There wasn't much difference between managing a local forest and the global climate. Both were common property resources. What was needed, most of all, was a property rights framework which encouraged cooperation. We argued in the following way:

One, the world needed to differentiate between the survival emissions of the poor and luxury emissions of rich. Two, managing a global common meant cooperation between countries. That was only possible — and this is where our forests experience came in handy — if benefits were distributed equally. We then developed the concept of per capita entitlements — each nation's share of the atmosphere. We said that countries using less than their share could trade their unused quota, and this would give them the incentive to invest in technologies that would not increase their emissions.

Interesting how climate negotiations have come a full circle — back to forests. Trees are carbon sinks. The world can use forests and other vegetation to combat climate change. At CoP-8, governments are now discussing the rules under which forests can be used as sinks. But it is here that we need to learn, once again, from forest communities.

We need forests that will grow. Not saplings planted one season, eaten up in the next. (This is where the bogey of the poor is always raised, so let me be very clear: the poor in India did not destroy the forests. Industrial greed and mismanagement is to blame for that — forests being sold at throwaway prices to the pulp and paper industry, for instance, and vast areas chopped down. Yes, once the forests were cut, intense grazing pressures never allowed regeneration.) If we want 'reliable' forest growth, we have to ensure that these same poor communities are involved in the forest management. If governments or industry believe that they can grow trees, anymore than they can grow food, they really need their head examined.

Here is an opportunity: use the labour of the poor to grow trees and sequester carbon. In return, rural communities could get paid for each hectare of forests they grow and conserve. It puts a value on growing trees, not just cutting trees, perhaps for the first time.

But trust fossilised climate negotiators to take a potentially exciting idea and turn it to soot. Today, the rules for using forest sinks are so cumbersome and ridiculous that poor communities will find it difficult to find a space in this particular sun. Instead, what it would promote is precisely what we don't need: large afforestation projects controlled by government agencies or corporations. But remember what I said before: people will use forests. To protect these trees/sinks, these agencies will then need vast armies of guards and guns.

Also, currently the going price to grow forests is ridiculous. Mean and cheap. Designed to get the worst. As they say, if you pay peanuts, you get monkeys. That is what CoP seems to have in abundance.

Looks black

India and the carbon sinks idea, placed in perspective

If forests are to be treated as carbon sinks, it is crucial that their value to developing countries is understood. For a lot is at stake.

Forests in the South are quite different from those in the North. They are not wilderness areas. Nor are they plantations of one or two species. They aren't passive carbon receptacles. In the tropical regions, where most Southern nations are located, forests are dynamic. Millions of indigenous people across the world live inside forests, depend on them for food, medicinal preparations, pastures for livestock, and a million other articles of daily use. Their lifestyles have been sustainable — the forest has taken care of their needs, and they have limited their use of the forest to a level that doesn't harm it. And now, the future of these people — and the forests — is once more at the mercy of governments and corporations. This time, CDM-struck.

and around the forests. Almost all national parks and sanctuaries witness violent conflicts, as a matter of course, between villagers living in or around the forest. That is because the state-controlled forest departments do not recognise their rights to the forests. Forest-dwelling communities have a stake in the health of the forest and can invaluablely contribute to protect and conserve it. And when their rights are not recognised, they cannot be prevented from poaching upon and so chopping up this wealth by any means. (India's most wanted man is a sandalwood smuggler/poacher called Veerappan. Two state governments as well as the Central government — employing an array of forces including specialised commandos — have failed to catch him for more than 20 years.)

The question is: how do you regenerate the forests? Forest departments in India own 70 million hectares of land. India's forest policy calls for one-third of the total land to be cov-



Forests of the people

In India, the forestry debate is at least 30 years old. It has two main elements: the rights of villagers living in and around forests; and the role of industry. It first came to the fore in the early 1970s in the form of the Chipko movement, which acquired international fame. Women in villages of the Garhwal region of the Himalaya began protesting against the timber lobby walking away with trees from forests where the villagers had traditional rights. The movement was not about protecting trees but using them — the villagers' livelihood was tied up with their access to the forests. It was, quite simply, an issue of survival.

Management of forests and wildlife has been very controversial because it has refused to take into account the needs of people living in

ered with forests. Yet forest cover is alarmingly sparse, even as communities keep getting thrown out. The government has come up with joint forest management (JFM) projects to involve communities. But this hasn't taken off. The forest department dictates how involved communities can be. This has reduced JFM schemes to tokenism.

Corporate woods

As if the government weren't bad enough, there is industry. It has a rich record of destroying forests in India. Until the 1970s it got forest leases at throwaway prices. In the early 1980s, government floated what was called a social forestry project. Farmers started planting eucalyptus trees. N C Saxena, former secretary to India's Planning Commission, estimates that some 10 billion trees were planted in

Carbonstocking

A lot of imagination has gone into the climate change negotiations. The Kyoto Protocol comes immediately to mind. A fine narrative. Within the protocol, CDM. Beats the Surrealist Manifesto by a mile. Within CDM, carbon sinks. Pure, transcendental fiction.

But hang on. If you think the protocol's representation of carbon sinks beggars the imagination, you haven't understood the human brain at all. Especially the one that dabbles in that goo we call business.

Carbon can be stored

In oil-bearing rocks: Injection of carbon dioxide to increase oil recovery is a common practice in many oil fields. Essentially, carbon dioxide is injected under pressure into the oil-bearing rock. While some of it comes back up with the oil, much remains underground, and operations can be modified to ensure that most of the inject-

ed carbon dioxide remains underground. Better still, oil companies can earn some credit for the noble task of tucking away carbon dioxide, while earning some oil-rich cash in the process. In the new phase of PanCanadian's carbon dioxide enhanced oil recovery project in Regina, Canada, around 20 million tonnes of carbon dioxide will be injected into oil reservoirs to observe its potential as an underground sink.

In salt bearing rocks: Deep saline formations are another brainwave about innovative carbon dioxide sinks. Salt-bearing rocks and saline aquifers, among all geologic formations, have the largest carbon storage facilities. The US alone, estimates say, could sink as much as 500 billion tonnes of carbon dioxide in this manner. The US is additionally enamoured by the idea, for a number of its large carbon dioxide point sources are near saline formation injection points. The first to

actually carry this theory out in action is the Norwegian oil company Statoil, which is planning to inject approximately one million tonnes of carbon dioxide into saline aquifers about a kilometre below its Sleipner offshore platform for the next 20 years.

In oceans: Liquefied carbon dioxide is also injected into oceans through pipelines. The Carbon Sequestration Initiative, an international consortium of major industries, is funding Massachusetts Institute of Technology scientists in one of the most extensive projects ever to inject carbon dioxide into the ocean.

But did you also know?

To start with, there is the usual controversy that surrounds any sequestration project — uncertain storage capacity in the long run. There is also a possibility that the enormous amount of pressure required to com-

press and inject gas underground will hugely pressure the plug sealing oil shafts. This could cause much of the stored carbon dioxide to leak out.

Storage of carbon dioxide underground could bring about a change in sub-surface pressures, resulting in earthquakes. There is the additional risk of groundwater contamination.

Such projects could well become a route for industrialised countries to dump their carbon dioxide in Southern territory. In spite of inadequate research on potential long-term impacts, Exxon and Pertamina have been awarded a license by the Indonesian government to explore the large Natuna gas field. Carbon dioxide recovered from this area will be injected into two aquifers at some distance from the gas field. Nearly one million tonnes of carbon dioxide will be injected into the aquifers every day, and the total amount to be injected would be as high as the current annual carbon dioxide emission of the EU.

Increased carbon dioxide levels in ocean sequestration causes the ocean to turn acid. This is particularly damaging for deep-sea fish and invertebrates, which have the least ability to adapt to these changes, inhibiting their growth and reproductive capabilities. ■

Go by rule

Money for nothing? Credits for free?

Everyone's bandying about a myth: sinks projects are cheap. Read the small text. If you go by the rules, you might have to take stock of your wallet. Indeed, expenses might ensure that nobody buys sinks projects, eventually. "Forestry projects are cheap only if basic standards are not met. Some of the cheapest forestry projects are World Bank projects of eucalyptus plantations in Brazil and projects in Romania and Moldova. In many cases, per tonne price is between US \$1-5," explains Trulus Gulowsen, campaigner, Greenpeace.

"A good CDM (clean development mechanism) forestry project will cost about US \$100 per tonne of carbon if biodiversity, sustainable development issues and people participation are incorporated," Taka Hiraishi informs. "Small and diverse farms maintained and preserved by local communities are always better than huge industrial monoculture projects."

Estimates show that potential carbon sequestration resulting from afforestation and reforestation activities in 2010 in developing

countries can be in the range of 190 to 538 million tonnes of carbon per year. According to a 2001 study, investment cost of carbon sequestration varies from US \$0.1 to US \$40.6 per tonne of carbon. An Andhra Pradesh, India, case study shows the setting up a eucalyptus plantation could cost US \$493 per hectare (ha).

Projection for carbon sequestration in the same area is 1.4 to 9.5 million tonnes of carbon per ha per annum. According to N H Ravindranath, Indian Institute of Science, Bangalore, the prevailing rate for per tonne carbon dioxide is somewhere between US \$3 to 5 for forestry projects. Even by this calculation it's a lot of money. But this money ought to go to communities. Otherwise, it's stark grabbery.

Stark grabbery is the rule

Proposed CDM sinks projects are all about getting cheap credits. One such is a Norwegian plantation project in Uganda and Tanzania. The project throws sustainable development out of the window. Industrikraft Midt-Norge, a Norwegian company, is planting eucalyptus and pine in Uganda and Tanzania to offset its emissions from a gas-based power plant in Norway. "The company together with local companies in host countries floated a firm called Treefarms, in which it has a majority stake," explains Gulowsen. Treefarms is investing in a 5000 ha plantation through a local subsidiary, Busoga Forestry Company Limited. As many as 8,000 people — mainly farmers and fisherfolk have been evicted from 13 villages to allow plantations. They can cultivate in the area but have to pay rent!

"The price quoted by the firm for carbon credits was a ridiculously low rate of less than US \$1," says

Gulowsen. "It clearly shows that if there is a weak government in the host country, industry does not have any regard for bigger socio-economic questions."

Treefarms has announced a similar plantation project on 15,000 ha of grassland plains in Tanzania. Kilombero Forestry Company Ltd, owned by Escarpment Forestry Company Ltd, a subsidiary of Treefarms, is involved in planting at least 15,000 ha in Tanzania.

Then there's the monoculture CDM industrial plantation project in Brazil by a company called Plantar. Even before its begun, controversy's broken out. The project is seeking credits for temporary storage of carbon dioxide in plants that will eventually be cut to produce charcoal. The validating agency, Det Norske Veritas (DNV), has said in its report that it cannot ensure that the sequestration from these plantations is forever more.

What's worse is that the project is being considered under the Prototype Carbon Fund, a fund floated by the World Bank. A number of government and corporate investors who get a *pro rata* share of the credits from projects have invested in this fund.

Charcoal instead of coal will be used to produce pig iron to help reduce emissions, and so seek credits. Under the project, 23.1 thousand ha of eucalyptus plantations will be established to produce wood for charcoal. Credits worth 12.9 million tonnes per carbon dioxide equivalent will be claimed for storing carbon dioxide in plantations established to replace existing ones, as well as for using charcoal instead of coal. The point is: who does the money go to? ■

POST KYOTO WORLD





Will the truth sink in?

Under the clean development mechanism (CDM) of the Kyoto Protocol, industrialised nations are allowed to meet part of their carbon emission reduction commitments by carrying out reforestation and clean energy projects in the developing countries. Some community groups have, however, strongly decried the idea of trading carbon sinks. The Indigenous Peoples on Climate Change — an international group of over 30 indigenous organisations — has declared that “sinks in the CDM would constitute a worldwide strategy for expropriating our lands and territories and violating our fundamental rights that would culminate in a new form of colonialism”.

Many also doubt the value of carbon sinks. The mechanism of carbon sequestration and the extent to which sinks can mitigate climate change remains uncertain. So how much do we know about carbon sinks and the role they can play in checking climate change?

Over the past 200 years or so, human beings, through burning of fossil fuels and changing land-use patterns, have added about 400 Gigatonnes of carbon into the atmosphere (1 Gt = 1,000 million tonnes). But it turns out that the present atmosphere contains only about half of this stuff, meaning the other half must have been absorbed by the Earth. The solution to this mystery lies in carbon sinks, which chiefly include the growth of forests and oceans' ability to absorb carbon dioxide. Without this removal of carbon from the atmosphere, the present atmospheric concentration of carbon dioxide — which stands at 370 ppm (parts per million) — would be significantly higher (about 450 ppm).

It sure looks as if carbon sinks are putting a brake on ever-rising carbon emissions, delaying the speed and extent of climate change.

Moreover, it is quite feasible for individual countries to regulate their carbon dioxide inventory by tinkering with carbon sinks. But many a jumble needs unscrambling before the actual significance of carbon sinks in checking climate change — and how they could be rationally used to meet individual countries' commitments to cap emissions — can be assessed.

For instance, one needs to know how long the natural uptake of carbon dioxide will continue. To what extent can we induce 'human-made' carbon sinks by planting more forests or changing agricultural practices? How accurately can we measure the effectiveness of individual carbon sinks in reducing atmospheric carbon dioxide levels? This is important both to understand the main components of natural carbon sinks as well as to verify the success of human-induced carbon sinks, if and when they are implemented.

Oceans lick off carbon dioxide from the air by trapping it chemically on the surface. But oceans are lazy — it takes about a thousand years for an ocean to recycle its water from the deep to the surface. This means that before long, water on the surface becomes saturated with carbon dioxide, thus allowing forever less absorption of the greenhouse gases (GHGs). Indeed, models of the vertical movement of ocean waters predict that in a warmer climate the sinking of surface water further reduces the future role of the ocean as a carbon sink. Land sinks, by contrast, are more dynamic, and hence more

amenable to human doctoring. For this reason, they are the focus of current negotiations to help individual governments achieve Kyoto emissions reduction targets.

Two factors determine the importance and size of a terrestrial sink — land-use changes and concentration of carbon dioxide in the air. The latter boosts a sink by stimulating photosynthesis. However, while some environmental changes can boost the role of land as a sink, others will ultimately diminish the overall land sink. For example, large stocks of carbon are currently preserved in frozen soils of the polar regions. Climate warming would melt these soils, stimulating breakdown and release of this 'locked up' carbon to the atmosphere and so form a carbon dioxide source that would offset carbon dioxide sinks elsewhere. Indeed, most researchers

predict the overall role of land as a carbon sink to diminish over the next few decades. Some say it could disappear altogether as early as 2050.

So it is for good reasons that the Kyoto Protocol stresses so much on the reduction of carbon dioxide emissions. However, while the role of natural carbon sinks is not addressed in the protocol, it does accept that artificial manipulation of carbon sinks can help governments reach national emission reduction targets in the relatively short term.

But the way it is worded at the moment, the exact nature of human-induced carbon sinks recognised by the protocol as potential contributions to meeting carbon emission reductions

are both limited and ambiguous. For instance, Article 3.3 of the protocol, which sets out the guidelines for using carbon sinks, refers only to 'afforestation, reforestation and deforestation' as allowable activities. But the extent to which this includes management of existing forests and other current carbon-sequestering management practices, such as reduced ploughing of agricultural land, is not yet clear.

Furthermore, all changes in carbon stock in these projects must be verifiable. In other words, it must be possible to independently measure the amount of carbon sequestered. But while carbon stocks in vegetation on land are fairly straightforward to assess from ground and satellite surveys, those underground, which can represent up to 90 per cent of the total carbon stocks in some forest systems, are far harder to determine.

Then there is the question of non-permanence, where sinks can become net sources of carbon for a variety of natural and human-made reasons. But sequestered carbon must be for all time to come, if the climate is to benefit. Critics therefore caution that rules for accounting for CDM sink projects must ensure that carbon either remains sequestered forever or that any new releases are equivalently made up for elsewhere.

Measuring emissions is another thorny issue. Since emissions and removals of GHGs are almost never directly gauged for reasons of money and feasibility, ways must be found to cope with inaccuracies with respect to forestry CDM projects. Indeed a recent study published in the journal *Nature* suggests that the conversion of grassland into shrub-land only incorporates a small amount of carbon. The researchers found that in some cases the amount of carbon stored in the soil actually decreased. The results suggest that the US carbon sink has been significantly overestimated, and could have serious implications on the use of new forest plantations to combat climate change.

A related issue is that of setting emission baselines so that the impact of a CDM project can be estimated in terms of scenarios that do not include the project. If not properly checked, the gains could be easily undone, either by deforestation elsewhere or by monocultures of plantations that would have happened anyway, being commercially lucrative. Carbon could also leak from locations in which it has been stored or sequestered as a result of natural disturbances — such as fires, storms or the effects of insects — or of human activity.

To sum up, most scientists are of the view that the long-term impact of sinks as a mitigation tool is likely to be limited. These limitations notwithstanding, they believe that manipulation of carbon sinks, if done with good science and intent, could play an important role in attaining emission-reduction targets in the short run. Most significantly, they could give the world a short breather before it arrives at a consensus on tackling the problem in the long run. ■

**Many a jumble
needs unscrambling
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Indian industry and the law...

It is true there is a lot of pressure on the government from the industry, and also from politicians, to amend the Forest Conservation Act, 1980. Even state governments need to take permission from the Union government, if they want to give away even a small portion of the reserve forest land to the industry or if they want to use it for building roads. On top of that, there is a Supreme Court ordinance,

pressure, but non-governmental organisations and others are fighting tooth and nail. Even politicians have their own agenda. Many politicians, including chief ministers of several states, have been putting pressure on the Indian government to make changes in the Forest Conservation Act, so that they can freely distribute forest land among people in order to cultivate their constituency. The industry is also putting pressure on state government, to some extent.

People's access to forest produce...

There is a clear understanding that afforestation, deforestation and reforestation (ADR) being taken under CDM should be in partnership with local

Private plantations and carbon sinks...

Most developed countries have large chunks of privately owned forests. But I don't mean that we should immediately privatise all forests in India. Then again, private companies will involve themselves in plantation projects for commercial purpose and not charity. But the law does not allow private partnership in forest activity.

We can devise a strict method by which private companies can be involved in plantations. If a company undertakes commercial plantation projects, then we can set certain conditions — the company will harvest wood for commercial purpose no monoculture company will give twigs free of cost to local communities, the project will follow the sustainable forestry

is everyone's responsibility, it turns out to be no one's responsibility. I believe that communities should be involved in managing forests, which they can then sell to a private entity at a price they want to. But the trouble is how do you organise the village community? Who is responsible? Is the community-based model a cooperative, an elected representative or is it a trust? Which model are you talking about? No one is providing details on this. If the community sells timber, then in what proportions? Should the sale proceeds go to the individual members of the area? Is it in relation to the level of effort? I am not against community forest management, but we need clarity as to how to do it.

Low carbon prices and viability of sinks projects...

The US has proposed bilateral projects.



INTERVIEW



One swims the other sinks



N H Ravindranath
Centre for Ecological Sciences at the Indian Institute of Science (IISc), Bangalore

issued last year, which clearly ban all activities in a reserve forest land. So far the government has been resisting this pressure.

What they want...

Industry wants to have its own source of raw materials. Obviously, they do not have access to reserve forests, so they are looking for other sources such as village commons. The industry, it seems, wants to have their own huge plantations, wherever it is possible, on common village land. This is the debate, which is going on.

The opposition...

The government wants to yield to the

communities. Addressing their needs has been an integral component of any CDM forestry project. Modalities are being worked out. There is already a general agreement among the parties on this. It clearly states that such projects should promote biodiversity, should have community participation and should be based on the sustainable use of forest resources. So, it is not true to say that the people living will lose access to forest and land because of such projects. I have been involved in these negotiations. We have been actually pushing for giving priority for small projects, which benefit small communities.



K P NYATI
head of the environment management division, Confederation of Indian Industry

principle. The company should be given forest land on lease and in case it does not follow the specified procedures, its lease should be cancelled. The company can also pay the forest department some fee so that joint forest management (JFM) projects can be carried out.

The best thing about afforestation is that by selling credits one can get money. Corporate bodies already know how to make a project plan document, how to get verification and certification. Poor communities are not aware of these procedures.

On communities managing sinks projects...

The problem I see is that the moment it

And if such schemes are able to mitigate greenhouse gas emissions — are able to prove that they would provide the project developer more efficiency in terms of per unit of product output, and low energy consumption — then the entrepreneurs would still go for them.

Another important issue is that at present the carbon market is uncertain and no one knows what the scene be after 2012. Then why should the entrepreneur not take advantage of whatever little he is getting right now?

Definitely the US withdrawal and crashing of carbon prices will restrict the choices of projects as many schemes will not be commercially viable and will eventually be scrapped.

Stop press!

Sinks are a mistake, reports the New Scientist

Sinks in the Kyoto Protocol are based on a scientific fallacy, according to the first results of CarboEurope, a Europe-wide research programme. *New Scientist* reports that according to new results, the soil in 'Kyoto forests' will actually release more carbon than the growing trees absorb in the first 10 years. This is because forest soils and the organic matter buried in them typically contain three to four times as much carbon as the vegetation above. CarboEurope's researchers have discovered that when ground is cleared for forest planting, rotting organic

matter in the soil releases a surge of carbon dioxide into the air. This release will exceed the carbon dioxide absorbed by growing trees for at least the first 10 years. Only later will the uptake of carbon by the trees begin to offset the losses from soils. In fact, some new forests planted on wet, peaty soils will never absorb as much carbon as they spit out. Europe's forests are absorbing up to 400 million tonnes a year, or 30 per cent of the continent's emissions. The results also reveal that old forests actually accumulate more carbon than

young plantations. This suggests that conservation of old forests is a better policy for tackling global warming than planting new ones.

But the Kyoto Protocol takes none of this into account. "Besides ignoring soils, it has no measures to stop deforestation," says Riccardo Valentini of the University of Tuscia in Viterbo, Italy. Instead, it seems to give countries a perverse incentive to chop down existing natural forests and replace them with plantations.

"They will be able to claim carbon credits for the new planting, while in reality releasing huge amounts of carbon dioxide into the air," says Valentini. "There is nothing in the protocol to stop this." "If the politicians had known in 1997 what we know now, they would never have agreed to its rules on carbon sinks — at least, I hope they wouldn't," says CarboEurope chairman Han Dolman.■

— <http://www.newscientist.com/news>

DANGER

If the Kyoto Protocol doesn't come into force soon enough, we are in for unpleasant consequences, warns a study published in *Science*. The world has little time: aggressive reductions of GHG emissions must begin very soon after 2012 in order to stabilise concentrations at 450 ppm.

It is possible to stabilise concentrations at 450 ppm if industrialised nations meet the Kyoto targets. In that case, global total emissions peak between 2010 and 2020, while global total emissions decline 1-3 per cent each year from 2020 to 2040. If they delay until 2020, global total emissions would need to decline 2-8 per cent yearly to stabilise concentrations at 450 ppm. Cripplingly prohibitive.

» 2 Looks black

farm forests in 1980-88 — about 5 million hectares. But industry was interested only in beating down prices. It stuck to cheaper supplies from corruptible forest departments and delayed purchases from farmers, driving them to despair. With a reduction in import tariffs, imported pulp became cheaper. Between the mid-1980s and 1990, wood prices declined by over 60 per cent — farmers staring bankruptcy in the face plucked out saplings.

Even today, India's pulp and paper industry gets about half of its raw material from government forest lands. About a quarter comes from farmers and a growing proportion (about 10 per cent at present) is imported. By 2005, wood requirements for pulp, paper and newsprint are projected to rise to 28 million cubic metres (cum) per year. Forestlands yield only 4 cum per hectare per year. Plantations yield 10 cum per hectare per year. But private land accounts for 150 million hectares, with another 1.5 million hectares of degraded forest being regenerated by villages under JFM. Wood markets can benefit industry and villages. But unlike the governments, farmers need assured markets if they get into the long-term business of plantations. The biggest threat to this win-win situation is allowing industry access to forestland for plantations. Conservationists are strongly opposed to this long-standing demand of the industry.

For industry, therefore, flexible mechanisms like CDM are a gift from heaven. Using now the rhetoric of globalisation, they can gain inroads into forest department land. The lure of revenues generated from these companies is something governments and forest departments in India are unlikely to resist. In the past, industry never bothered to involve communities in its plantation schemes. Now it is making politically correct noises about their participation.

Essentially, the question is one of forest ownership and management. If the flexible mechanisms are going to be used to deny forest dwellers their

traditional rights to forests and allow private companies to profit from it, it would undermine a very basic tenet of sustainability: providing livelihood to the most vulnerable people through moves to mitigate climate change. Negotiators from the South have to remember that they have a duty to defend the entitlements of the poorest of their poor. They have to ensure that the flexible mechanism funds are not used only for corporate lucre. It isn't a task that they can't achieve.

Ten years ago, in the Rio Summit, there was a move from the North for a legally binding convention to manage the world's forests. Western NGOs like Sierra Club and Friends of the Earth supported this demand. But the South, especially India and Malaysia, successfully opposed the forest convention. They saw it for what it was: an effort to dictate forest management in the South for the benefit of the timber industry of the North. But the forest convention came back to haunt the South in 1997, when the IPCC recommended negotiations for a forest convention. While the EU and Canada supported the move vociferously, the US and Brazil opposed it. G77 was a divided house over the issue. The disagreement between the governments was over control of the global timber market.

The Southern NGOs came up with a remarkable stand on the issue. Under the stewardship of the Centre for Science and Environment, they signed a statement denouncing the move for the forest convention — this was quite a departure from the previous support for the convention from several Southern NGOs. The convention would, they argued, lead to toothless policies. It would approve of the lowest common denominator as the determinant of sustainable forest management practices, centralising forest management in cities at a time when forest management desperately needed to be decentralised to communities.

There is every reason to believe that the flexible mechanisms could be used for the same end. Wouldn't that be a disaster? ■

RINGSIDE VIEW

TOM ATHANASIOU



After Limbo

The Kyoto Protocol has been so warped, weakened, and watered down that reasonable people can reasonably conclude it may barely make any difference. But we hope it will enter into force. For it will offer us all a much-needed moment of reckoning, and a chance to indeed make a difference.

We suffer, today, something very near to limbo. The US regime is working diligently to deliver Kyoto a final, fatal blow. Even so, let us turn towards the future. The non-governmental organisations (NGO) community, like the climate community in general, is thick with speculation about transition from Kyoto to a just and adequate second-generation protocol. A change is coming, but still — and this is the point — it has not actually come.

Which brings us to the tendency of Southern diplomats and delegates to decry even honest concern for ecological adequacy as a stalking horse for Northern pressure. Just now, developing country commitments, or even talk of them, are far more likely to hurt the South than to protect the climate. Were we developing country delegates, we too would refuse it. And as for the NGOs, they must under no circumstances lobby the developing world to accept commitments. To do so, make no mistake, would be to carry water for the madpersons of the right.

But history is not a static thing. And all indications are that it's about to change in some surprising ways. For one thing, Kyoto is about to enter into force. For another, the dream of the clean development mechanism (CDM) is collapsing. For a third, the policy agenda will soon begin to crowd with proposals for a global, just and ecologically adequate second-generation protocol. And when the talk finally turns, the virtue of the South's refusal of commitments, if indeed it continues, will no longer be so obvious.

Be clear here: a just climate treaty would of course have to satisfy the South's demand of a 'right to development'. But it would also have to be adequate to the increasingly grim scientific bottomline. The right to development can only, at this late date, be the right to *sustainable* development, and it can only come within a global context in which developing countries commit themselves to emission limits.

We take it as self-evident that such commitments can only come within a treaty in which all human beings have the same per capita emission rights. For the atmosphere is a crucial economic resource, and any treaty that is not explicitly based upon the per capita principle represents a continued transfer of resources from South to North. To those NGOs who object that a per capita treaty would entail a politically impossible transfer of wealth, we say that such transfers are both justified and necessary: justified as payment for Northern overuse of limited atmospheric space; necessary because, without them, there will be no way to fund decarbonisation in the South.

It will soon be time for the South, together with its many friends in the North, to step forward with a concrete proposal, one to be adopted in the second commitment period, one that is architecturally and institutionally consistent with the UNFCCC framework. Kyoto, in other words, may yet make a difference. But only if we can rise above the habits of the bitter last decade and face the future. It will not do for the environmental NGOs to pretend that we can move forward by way of the gradual evolution of the Kyoto framework. But neither will it do for the South to become forever comfortable in rejecting all commitments. It's time, instead, to turn to a new kind of realism, one based, as true realism must be, on justice.

Don't get us wrong: there's a desperate need for Northern leadership; especially so in this strange period between Kyoto's entry into force and the arrival of its successor. This means at least two things: a serious effort to implement emission reductions in the North, and willingness to fund adaptation and capacity-building in the South. And with the US out of the protocol, this means a special obligation for the EU to pick up the slack.

The lynchpin here is leadership from the South, and we'll need it in the next five years. It's asking a lot, perhaps, given the North's continued high emissions, a lot indeed. But history, as we all know, is not made under conditions of our own choosing.

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