eco-ethic

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The Fifth Conference of Parties

The fifth Conference of Parties (COP-5) held in Bonn on October 25 - November 5, 1999 made better than expected progress on the key elements needed to implement the Kyoto Protocol according to reports from Framework Convention on Climate Change. Ap parently agreements were reached on an intensified negotiating process in the lead-up to COP - 6 to be held at The Hague, in November 2000. The truth is that none of the contentious issues were resolved. COP-5 was more process oriented than substantive, however we hope that decisions taken at this meeting will pave the way for outcomes at COP-6 on the key issues of sinks, mechanisms and compliance measures.

The Clean Development Mechanism was envisaged as a mechanism to encourage sustainable development in developing countries while facilitating the global task of reducing greenhouse gas emissions. This vision is now under threat

A sink implies any process or activity or mechanism, which removes a greenhouse gas from the atmosphere. The discussion focussed on the nature of activities to be included in sinks. Some of the countries were exploring potential new activities that could be included under sinks thereby significantly increasing their possibilities of emissions into the atmosphere. This apparently could be a big loophole in meeting the already low targets. It could turn the Kyoto Protocol into a license to increase emissions!

The Clean Development Mechanism (CDM) was envisaged as a mechanism to encourage sustainable development in developing countries while facilitating the global task of reducing greenhouse gas emissions. This vision is now under threat. The CDM could result in promoting unsustainable technologies such as large hydro projects, clean coal and nuclear energy which anyway receive the lion's share of investment and political support. Some of the developing countries feel that the CDM must be an instrument primarily for the promotion of renewable energy technologies such as solar, wind, sustainable biomass fuels and small hydro-technologies. The issue has not yet been resolved.

On compliance measures the parties generally agreed in these discussions that the Protocol's compliance system should have the threefold objectives of promoting compliance, preventing non-compliance and determining and addressing instances of non-compliance. What COP 5 achieved was the circulation of an 'initial thoughts' paper by the Joint Working Group on Compliance in order to facilitate the preparation of a paper on the elements of a compliance system which will ultimately enable COP-6 to adopt a decision on a compliance system.

The developed countries did not pursue the issue of developing countries' commitments at COP-5 for fear this issue would impede progress on the Buenos Aires Plan of Action. This issue is likely to emerge at COP-6. •

Editorial

While the world at large was preparing far ahead for a grand welcome to the new millennium, a cyclone on an unprecedented scale — killing about 10,000 people, rendering lakhs more destitute and rooting out 70-100 percent of the trees with a windspeed of about 300 kmph in the 12 coastal districts of Orissa — had all the makings of an emissary from the future, warning us of where we are heading. This national calamity has once again brought into focus glaring lacunas in our disaster management and information systems, and at a more profound level, our poor vision of what development should mean.

Sadly, the cyclone, like every other disaster of such magnitude, has given an opportunity to several people, observers from a cozy distance, to testify their opinions and theories, political or otherwise, while the poor victims await relief We pay a heavy price for a disaster like this to teach us a few lessons. As Sanjay Khatua has observed in his article, "Devastation always brings tremendous opportunity for reconstruction, of understanding."

How much are we, humans, responsible for such calamities? How much, for example, is the pollution caused by fossil-fuel burning responsible for the ecological imbalance that may make predictions of such disasters uncertain? We are not too certain of the mutual effects of natural processes and human activities. But we are certain of how pollution affects the people around. Even local elderly people observe how destruction of mangroves meant removal of natural barriers against heavy cyclonic storms. We can be certain that the imbalance that might take place in a thousand years in nature's course would happen in a hundred years with our intervention!

In this context it appears queer to argue that the developing countries have a "right to pollute". They justify their stance by putting forward the economic concerns of the poor countries. Note however that justice based on equity is conspicuous by its absence both within the poor countries as well as on the international front. Attempts to find alternatives to polluting development are few and far between. An awkward tussle between economic issues and environmental concerns could be seen at Seattle as well as in the transporters' strike in Mumbai, reports of both of which can be found in this issue. We are impatient with people who have a long way to reach our status, hardly realising that we are their obstacle. *The rich countries feel that the poor ones do not know how to manage their economy and so are obliged to moralise. A reproduced write-up in this issue highlights the 'pots and kettles syndrome' among the rich countries, with a simple question, 'Who owes who?'*

But as a nation, as a local group, as an individual, what is to be done? How do we relate with a possibly human-induced calamity, or growing poverty, hunger and disease, or increasing global warming, levels of pollution, or injustice ? We cannot afford to ignore these facts since the global effects are sure to knock at each door sooner or later. Nature knows no political boundaries. A workshop held near Berhampur — this issue carries a brief report — has recently attempted to address some of the issues and concerns in this direction.

Perhaps we also have to relearn how to relate with our inner selves, to see whether the seeds of disorder are within each of us, much closer to us for scrutiny. Religions, in their original purpose, appeared to have dealt with this facet of the human species and made some important contributions that influenced human lives. With this issue we begin a series of examples, under the feature Living Religion, that display such deep and lasting impact. •

Twin Cyclones and Tangled Ecology

Post Cyclone Livelihood Scenario in Coastal Orissa

Sanjay Khatua

In memorable history, the vulnerability of Orissa coast was never exposed so nakedly before the twin cyclones of 17th and 29th October, 1999, which have left a trail of devastation in vast areas spread over 12 coastal as well as inland districts, affecting about 15 million people and 20 lakh homes. With the cyclone, the 'mystery' surrounding the so called coastal affluence lay bare in the midst of debris of mud houses, dead human and animal bodies arid crushed vegetation.

The livelihood options in the 500 kilometre stretch of the coastal area influenced by regular tidal action are very limited owing to typical topographical characteristics. Irrigation and crop growing in the swampy saline tracts, riverine areas crisscrossed with innumerable tidal water channels, and in areas prone to waterlogging is not so easy. Access is difficult and almost every year the area along the coast is hit by floods, saline intrusion and storms of varying intensity. All these contribute negatively to earn one's livelihood in an area where more than 90 per cent of the coastal farmers are marginal and small farmers and density of population is more than 300 per square kilometre.

Major, sources of livelihood comprise growing paddy, fishing and growing cash generating trees/plants such as coconut, areca nut, betel vines, bamboo, etc., besides vegetable growing in some pockets and large scale migratory wage earning.

In the recent history, the coastal area has had very little forest cover, except the mangrove forests in about 195 sq. km. distributed over several patches, which has been steadily decreasing due to complex pressures including encroachment, captive prawn fishing, etc. The casuarina plantation, grown in some pockets along the coast after the previous cyclones, has also been mostly lost to the "super" cyclone. Though small in area, Orissa's mangroves are richer in species count (56) than the Sundarbans and can be restored at several areas to help prevent soil erosion and moderate the impact of cyclones as the mangroves have inbuilt coping mechanism to grow in saline soil/water and withstand high velocity water and wind.

With the cyclone, the 'mystery' surrounding the so called coastal affluence lay bare in the midst of debris of mud houses, dead human and animal bodies and crushed vegetation.

In the absence of forest and mass vegetation, most of the tree based biomass requirement used to be met from internal sources such as plantation on homesteads, orchards, etc.

Considerable percentage of families to a large extent used to depend on income generating trees such as coconut, areca nut, bamboo etc., on homesteads. A number of occupational and gainful activities such as cultivation of betel vine and fishing used to be other sources of income. Materials used to come from own resources for household and agricultural implements as well as for routine needs like fodder, fuel and house building. Because of high density of population and resultant pressure on land, the coastal area used to have little community land and vegetation on it. As a result, there was already a scarcity of these materials.

The "super" cyclone of 29th October 99 penetrated more than 100 kilometers inland with a windspeed ranging 260-300 kph. accompanied by about 5-7 metres storm surge which washed away life and property up to 20 kilometres in more than 50 kilometres stretch along the coast. Prior to this, the coastal area had already witnessed 3 major cyclones in 1967, 1971 and 1982 which had claimed large percentage of old trees.

The present cyclone has systematically felled 70-100 per cent of the trees. The long chain impact on all facets of living is imminent.

The worst affected would be the households whose income mostly depended on economic trees, as the recovery would take minimum 5 years, if initiatives are taken up urgently. There was already decline in the cattle population. Owing to scarcity of fodder and grazing land, this will be further accentuated. It has also devastated the plantations painfully raised under the social forestry scheme over the last two decades, just when the vulnerable groups had started depending on them. Being in an area prone to regular floods and storms of varying intensity, it requires relatively higher amount of tree based biomass materials for recurring repair and maintenance. Income generation activities, such as fishing, betel vines, etc. which require lot of brushwood, and crafts dealing with palm leaf, coconut fibre, etc. will also suffer. Foraging for fuel and other materials for day to day living will negatively influence the work load profile of women and children and their leisure time in general. The destroyed community orchards which used to be steady sources of raising community fund will affect the community activities. For the first time in Orissa the sunstroke has already claimed thousands of lives in the last two years. The situation in the coming summer can be imagined as there is no tree in vast areas even to take shelter.

Systematic restoration of mangroves, strat-egic plantations at family and community level would not only help in recovering the loss but lay the foundation.

Devastation always brings tremendous opportunity for reconstruction, of understanding. The life and ecology in coastal areas need to be prepared to live with the 'natural calamities' which are only natural to the ecological niche. Systematic restoration of mangroves, strategic plantations at family and community level would not only help in recovering the loss but also lay the foundation for a wholesome sustainable life in future. It depends on how we approach it - when the glass is half empty it is also half full. •

Sanjay ***Khatua***

Flashback

In the recent past, severe cyclonic storms have been reported in November, 1942, October, 1967, October, 1968 and the historically severe cyclone of October, 1971 (in Orissa). There have been minor cyclones during other years. In Orissa, cyclones are usually experienced in the months of October and November. At this time, the kharif paddy is generally in the flowering stage. Serious damage to the paddy crops is caused as the flowers are blown off by strong winds. Also, as in Andhra Pradesh, trees are uprooted, kachha houses are blown away, many pucca buildings collapse and there is loss of human life, cattle and property. The very economic structure collapses when a cyclone strikes the coastal districts. The coastal districts affected frequently are Ganjam, Puri, Cuttack, Balasore and Mayurbhanj...

The intensity of the cyclone that swept over the (Orissa) coast during October 1971 and which was one of the worst in living memory is not well understood on account of limited observation points along the coast in this region.

The maximum wind speed attained has been reported to be 163 km per hour. The maximum wave height is about 5.6m. though the tidal surge experienced in different places has been noted to be of the order of 3 to 4m. Another problem in this region is the presence of a number of inlets into sea which allow the tidal waters to be driven inland to considerable distances, causing damage on both sides of the creeks.

(From *State of Orissa*s Environment: A Citizen's Report,* Council of Professional Social Workers, Bhubaneshwar,1994)

Seattle : Beginning of a New Assertion?

The third Ministerial Meeting of the World Trade Organisation (WTO) in Seattle, US, held during November 30 - December 3, 1999 failed to make any breakthrough despite its ambitious agenda that focussed mainly on agriculture and services. Among the multiplicity of factors that contributed to the debacle, which included the demonstrations of radical environmental activists and other Non-governmental Organisations (NGOs), and the US President Bill Clinton's aggressive call for including labour and environmental standards in the trade talks, what seems the most prominent is the habitual sidelining of the developing countries by the industrial countries. In other words lack of transparency in the WTO processes helped destroy any chances of the 135-member countries coming to an agreement.

Courtesy: *Green Politics*, CSE, 1999

The Northern NGOs, with their demands for labour rights and ban on non-ecofriendly products, played into the hands of the Western concerns. Their demonstrations turned the focus of the meeting away from the issues crucial for the developing countries.

The US, the European Union and the developing countries were at loggerheads with each other over many controversial issues, thus ending the meeting inconsequential. The brighter side of the picture appears to be that the developing nations have now made their presence felt, even if they have not gained anything in this process.

The US and some other countries advocated elimination of export subsidies for agriculture, reduction in agricultural subsidies, reduced tariffs on agricultural goods and stronger disciplines on state-owned food-trading enterprises.

Apart from inclusion of telecommunications and finance, travel and tourism, education and training, professional services and health, and an agreement on e-commerce within the scope of General Agreement on Trade in Services (GATS) under WTO, the US also wants negotiations on biotechnology under the WTO instead of under the Convention on Biological Diversity (CBD). The EU which had been opposing the US so far on this issue surprised everyone by supporting it this time.

The developing countries renewed their call for international recognition of traditional knowledge, revocation of patents of life forms and exclusion of essential drugs from the Intellectual Property Rights (IPR) rules. The US proposal to include labour standards in the global trading framework was fiercely opposed by the developing countries. An alternative that was suggested was that the WTO would have to work along with International Labour Organisation (ILO) and the World Bank forming a committee to deal with labour issues.

The next round of WTO talks will be held in Geneva in 2000. The developing countries will have to face rough weather there, which they managed to dodge at Seattle with no loss, no gain, while the giant forces muster support for their own cause even from some developing countries and their own civil society. The governments and civil society of the developing countries should work together to stand as strongly in the next round, to continue the battle. •

Lack of transparency in the WTO processes helped destroy any chances of the 135-member countries coming to an agreement.

Are Taxis Alone Responsible for Mumbai's Pollution?

Sixty seven per cent of air pollution in Mumbai is attributed to vehicles of which about 55,000 are taxis. Other contributors include trucks and autorickshaws. Responding to this state of affairs the Transport Commissioner of Mumbai, Vinay Mohan Lal had banned the use of the Premier 137D diesel engines in taxis. He said that his department's action against polluting taxis, particularly diesel run vehicles was in keeping with the High Court's directives on a recent petition. According to Lal, a workshop recently conducted by the car manufacturer, Premier, had found that the existing taxis were poorly maintained and emitted thick black smoke.

Courtesy : *Down to Earth, December 31, 1999*

In Defence of the Ban

The age profile of the vehicles showed that 70% were over 15 years. According to Lal, these vehicles had long outlived their lives and continue to emit black

Waiting for a Clean Breathing Space

The three-day-strike of the transport unions in Mumbai had to be called off amidst less of sympathy and more of contempt from the citizens. The strike has apparently given a foretaste of how a pollution-free metropolis would look like. Newspapers report 'relief as the reaction to the strike from most citizens, despite much inconvenience. They would like the taxi, auto-rickshaw and truck drivers to get their vehicles a pollution check. After all, 'the right to clean environment is right to life under Article 21'. The citizens cannot do away with the concerns of the transporters though. If the government orders are strictly implemented one lakh auto-rickshaws and 22,000 thousand taxis will have to be banned out of use, rendering as many people jobless.

The transporters' unions argue that pollution is caused by adulterated oil. Surely there is more than one way of polluting. They also feel that more economical and less polluting means would be the consumption of Compressed Natural Gas (CNG) which is unfortunately not available in plenty. While no compromise would be possible on the issue of pollution, it is also imperative that the government should encourage the transporters by various means to gradually switch over to a less polluting system instead of slamming a ban out of the blue.

smoke. Thus, Lal issued directives to three Road Transport Officers to recall taxis over 15 years old for rigorous inspection. Lal denied the allegations that the motor vehicles department was targeting old taxis. He has reportedly said, They are doing it for a good cause, the trucks are being targeted too, but at the border check-posts.'

In a Supreme Court judgement delivered in 1998, and applicable to the National Capital Region of Delhi, it was laid down that after a cut off date, no commercial vehicle operating in the National Capital Region should be older than 15 years. When this was implemented in Delhi without much difficulty then why not in other metros. The Motor Vehicle Department claims that its intention is to look after the fitness of the vehicles older than 15 years and not to scrap them. They said that in the prevalent taxi trade in Mumbai, the owners are not necessarily drivers. Since the driver has to pay a considerable amount to the owner, the driver has little interest in maintaining the vehicle. The question remains as to who is responsible for the maintenance of the vehicle.

"Can they ban the private cars, which are as old as these taxis?"

Manufacturer's Reaction

In response to the ban, Premier Automobile Limited (PAL) has filed a case in the Bombay High court against the Transport Commissioner. S. Balasubramaniam, the Vice President of PAL, said, "We filed a petition since the Commissioner had acted arbitrarily and banned engines without even informing us. However the ban doesn't apply to 137-D engines fitted in the private cars". He said, presently there are approximately 11,000 taxis using 137-D diesel engines in the city. The 137-D engines make up less than 10% of the diesel taxi fleet, the rest are fitted with 'Chor Bazaar' diesel engines. He said this ban is not backed by proofs but was largely based on generic observations. According to PAL, the fault lies not with the engines but with the poor maintenance of the cars by the taxi drivers. Diesel engines when not maintained properly are prone to deterioration because they operate on high temperatures.

The Difference in One Day

	Monday 27th Dec.	Monday 3rd Jan.	Decrease
Respirable Suspended Particulate Matter in air	489	328	32%
Carbon Monoxide	11	8.9	19%
Nitrogen Dioxide	555	429	22%
Sulphur Dioxide	50	46	8%

Source: BMC (Courtesy: *The Times of India*, 5/1/2000)

Economy Vs. **Pollution**

According to an expert in this field the enemy is not the taxi but the diesel engine. He said that 98% of the taxis in Mumbai are Premier Padminis. The reason is that out of the available models, the 1100 CC 4-cylinder petrol engine was considered the most economical, giving a kilometreage of 12 to 14. Once upon a time diesel engine cars were not available, nor were diesel cars manufactured in India. Diesel engines were mainly designed for heavy duty. The concept of used car engines was essentially a factor of foreign entrepreneurship with an eye on the middle economic strata of the society, and the business flourished in the United States, Japan and European countries, bringing down prices of used cars drastically. With auto emission standards becoming more stringent, export of these used engines began and a Mumbai entrepreneur was quick to take advantage of the market longing for extended kilometreage per litre of fuel consumed. Diesel prices being lower than that of petrol, the rat race began.

Cheap diesel engines were imported and refurbished. Premier Padmini petrol engines began to be fast replaced by the three-cylinder 1000 cc engine. The difference was telling. Padminis were now giving a mileage of 20 to 25 kms per litre of diesel. There was a catch however. Padmini had an 1100 cc 4-cylinder petrol engine. For economy this was replaced by a Daihatsu 3-cylinder engine whose power was only 1000 cc. In addition to this loss of 100 cc, the gearbox also consumed a lot of power. Thus it played havoc

with combustion efficiency. But the cabbie was happy. He was now getting a kilometerage by about 10 to 12 kms on an average per litre of diesel. Thus Mumbai slowly started seeing black fumes coming out of the exhaust pipes of Padminis.

Used imported Japanese engines contribute half of the vehicular emissions, which account for 60% of Mumbai's air pollution. The Pollution Under Control (PUC) certificate is mandatory for a refill. But getting a fake PUC certificate is not so difficult.

Rajaram H. Upadhay, who is engaged in converting car engines to diesel engines says that the cabbies ask the garage to adjust the flow of diesel but constrict the nozzle. With this the speed decreases drastically but he gets a PUC certificate because not enough fuel has suffered combustion to produce unacceptable level of emissions.

Later, he returns and gets the nozzle readjusted, or he may not be able to drive at speeds greater than 20 kms per hour.

Gross negligence of the engine to save money is another reason why the diesel Padminis are causing pollution. For example the oil and diesel filter needs to be changed every 3,000 km. Replacing it costs only Rs.600/- but cabbies do not change this even after 10,000 kms.

What does the immediate victim have to say?

We spoke to some of the taxi drivers to check what they have to say about this. A taxi driver said that they know the taxis are causing pollution, they are also suffering because of it and want to get rid of it, but the way the government wants to handle it is not correct. The taxi has been their only source of income for years, now suddenly if they are banned they do not know what to do. The government should think of an alternative and then ban these taxis. A cheap loan for a new taxi is O.K. with them.

Another young cabbie said, "So what if the taxis are causing pollution, there are other vehicles, which are also causing pollution, can the Government ban these? Can they ban the private cars, which are as old as these taxis. Now that Congress has come to power no more action will be taken against the taxis". When asked about the maintenance of the taxi, he reacted fast and said that in Mumbai 60% of the taxis are not owner driven. The contracted driver with a taxi badge pays Rs. 3.80 per kilometer to the owner. He is left with approximately Rs. 1.50 to Rs. 2.00 per km, but often he has to travel empty, covering kilometres for which he has to pay the owner anyway. Under these circumstances how much can he spend on maintenance.

It is not only the question of banning a few taxis but also a question of livelihood of thousands of people.

The taxi union did seem little more balanced. They said that Lal's directives will adversely hit the poor self-employed taxi drivers. The General Secretary of the Union A.L. Quadros has reportedly said that taxis are being singled out despite the fact that they have co-operated with the authorities and taken active steps to reduce pollution. He said that the taxis were the first to go in for eco-friendly fuels like Compressed Natural Gas (CNG) in the early 90s, despite its irregular availability. Quadros said, "We spent over Rs. 18 crores from the union in these last few years while everyone including private car owners refused to switch over to this fuel. All petrol and diesel taxis would eventually switch over to CNG engines, but this would take a few years."

Livelihood Issue

In this tussle, somewhere down the line the human element gets lost. It is not only the question of banning a few taxis but also a question of livelihood of thousands of people. The actual problem is that the number of vehicles in the metropolis is beyond the carrying capacity of the place. All private and commercial vehicles add to the problem. Under these circumstances targeting taxis alone is not fair. •

***Leni,* Justice and Peace Commission, Mumbai**

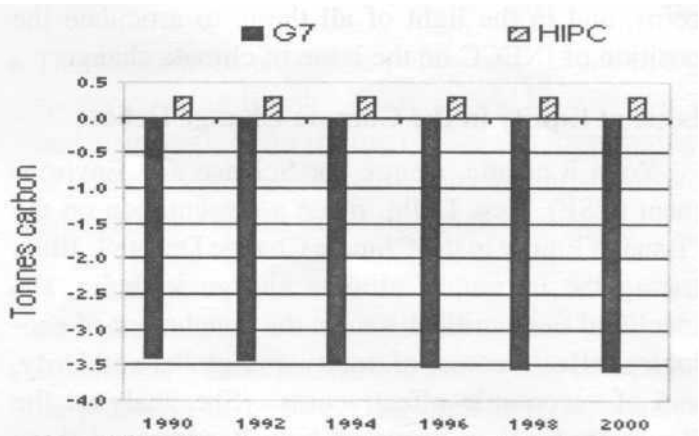
Who is Indebted to Whom?

What is debt? Rich countries pursue highly indebted poor countries to service their foreign financial debts, at great cost to the millions who subsequently go without vital health and education services. But industrialised countries are themselves responsible for a much larger debt to the global community. Their reckless use of fossil fuels has helped create the spectre of climate change - a storm cloud which hangs over everyone's future. And it is poor people in poor countries who suffer first and worst from both extreme weather conditions connected to climate change, and from the struggle to service unpayable foreign debts. Our understanding of debt, and who owes it, is horribly wrong and needs changing.

Geological history shows the earth gripped by natural cycles of cooling and warming. Whatever the distant future holds for our climate is hard to predict. But today, and looking forward through the next century, the lives and livelihoods of more than one billion people are threatened by the effects of global warming, increased by human activity. Many of those most at risk live in poor counties. By 2025 the UN estimate that over half of all people living in developing countries... will be 'highly vulnerable' to floods and storms. Already development work has been affected in many countries from Bangladesh to Tanzania and Honduras.

To solve the problem or, at least, mitigate its worst effects, we will all have to live within our environmental budget. The atmosphere can only absorb a certain amount of greenhouse gases before disruption begins. So, their emission needs controlling. As, each day, industrialised countries delay action on the 60-80 per cent cuts that are needed, they go over-budget and are running up an environmental or 'carbon' debt. Ironically those same countries today stand in judgement over much poorer countries who have comparatively insignificant conventional, financial debts.

The real carbon debt is the accumulation of surplus carbon dioxide beyond the capacity of the environment to absorb. But...the G7 (are) running up carbon debts in economic efficiency terms of around $13 trillion each year. On the same calculation the group of highly indebted poor countries (HIPCs) are running up credits between $141-$612 billion because of their under use of fossil fuel resources and the climate. At the higher end of the scale this gives a credit three times the conventional debt of the HIPCs, which stands around $200 billion. Not only does this question the continuing legitimacy of poor countries struggling to service debts which they cannot afford, it also points to the responsibility of the industrialised nations to reverse declining flows of resources and contribute far more toward sustainable development in developing countries.



G7 and HIPC nations shown per capita against the IPCC threshold for sustainable consumption of fossil fuels. The HIPCs are in credit, while the G7's debit is clear. (*Sources:CDIAC,UNFCCC,IPCC,GCI*)

With or without climate change and the carbon debts owed by rich countries...unpayable poor country debts should be cancelled, to achieve the global poverty reduction which the whole international community is committed to. Most of that community, through a series of international agreements, is also committed to controlling global warming and cancelling poor country debt. But, the carbon debt makes two clear points:

- rich countries' huge and growing debt to the global community for climate change, removes the last shred of moral legitimacy to keep holding poor countries hostage to their own much smaller, but still unpayable, financial debts
- responsibility for climate change, and ability to pay, means industrialised countries should commit significant new resources and technology to help poor countries affected by the increasingly volatile and uncertain global environment •

(Excerpted from *Who owes who?: Climate change, debt, equity and survival*, Christian Aid, London, 1999)

Climate Change and Citizens' Concerns: Report of a Workshop

Indian Network on Ethics and Climate Change (INECC) organised a workshop on "Climate Change and Citizens' Concerns" at village Mohuda, near Berhampur on October 6-7, 1999. About 30 individuals - teachers, scientists, NGO activists, mostly from Orissa and Andhra Pradesh - participated in this workshop to explore the issues of equity and sustainable development in the context of climate change, to share experiences from the field, to review the policy concerns, and in the light of all these, to articulate the position of INECC on the issue of climate change.

Issue of Equity in the Climate Change Debate

Yoga Rangatia, Centre for Science and Environment (CSE), New Delhi, made a presentation on the "Issue of Equity in the Climate Change Debate". Illustrating the impact of climate change in India, she identified three critical issues: the benchmark of ecological effectiveness, of equity and global solidarity, and of economic effectiveness. She analysed the Kyoto Protocol in terms of how it addressed these issues and showed how the flexibility mechanisms enshrined in the Protocol would benefit the US and what they would mean to India. She suggested the following proactive strategies that could be adopted by G-77 and China:

- **Lobby for inclusion of the principle of equitable entitlements.**
- **Reject flexible mechanism options if the principle of equitable entitlements is not accepted.**
- **Adhere to the principle of convergence as stated in the Kyoto Protocol framework.**
- **Insist on non-carbon energy option.**

According to Rangatia, energy efficiency changes are not enough to prevent global warming. Trade in non-carbon energy will promote an energy efficient growth path for developing countries and a global solar energy market may be created.

Environment as People's Livelihood

Dr. Walter Fernandes, Indian Social Institute, New Delhi, spoke, reacting to the issues raised in the earlier discussion. **Dr. Fernandes said that we have to take a double position of joining the government in our fight against the developed countries and fight against the government for the right of the poor for sustainable development and their right to live with dignity.** The developed nations have no right to point out the inequity in our country until they withdraw their own forces that contribute to such inequity here. He made a distinction between luxury emissions and survival emissions and emphasised the need to understand environment as people's livelihood. He advocated a three-fold network, that is, between activists and advocacy people, the latter and the researchers and between different disciplines of research, to curb the division among these sections and to challenge the anti-poor policies with technically accurate data. Such networking would facilitate search for alternatives. He also stressed the need to link macro-level knowledge to the realities at the grassroots for documentation and research. At the international level India should work at the SAARC level first and then move up, instead of acting as a big brother among them and losing out in the process.

Local Initiatives in Sustainable Development

Four presentations were made on local initiatives in sustainable development in Orissa and Andhra Pradesh. William Stanley, Development Information Documentation (DID) Centre, Semiliguda, spoke about the micro-hydel power project, that has come up recently in Koraput district, Orissa, with people's initiative. Manoj Pradhan, Council of Professional Social Workers (CPSW), Bhubaneshwar, presented a case study of an experiment in Sustainable Slope Agriculture Land Technology (SSALT) in Kondhmal district of Orissa. L.V. Prasad, Laya, Visakhapatnam, presented the case study of an experiment (5% model) in effective water conservation for sustainable agriculture in the East Godavari district of Andhra Pradesh. Sudhakar Reddy, Andhra University, Visakhapatnam, spoke about a hand-made paper unit in Visakhapatnam district that created employment to the villagers making use of only local resources.

What is to be done?

Three groups addressed the above question each looking at a different level: individual, local and

national. Following is a summary of their observations presented in the plenary.

Individual Level

Each individual should make a conscious attempt to look for alternatives to the present unsustainable lifestyles. The traditional knowledge/community practices that are harmonious with environment should be revived. **Individuals should re-examine their need hierarchies and make a distinction between luxuries and essential needs.** One could switch over to practices like: using public transport, degradable packaging, non-CFC emitting gadgets, demand for re-cycleable plastics if one cannot do away with plastics altogether. Information on climate change, individual responsibility and alternative lifestyles should be disseminated through booklets, community debates and consumer forums.

Local Level

Some problems at the local level: Depletion and commercialisation of natural resources, land degradation and soil erosion, change in cropping pattern, deforestation, creation of reserve forests and sanctuaries restricting the access to resources, adverse changes in climate, displacement, inadequate rehabilitation, migration of people, industries that are ecologically destructive and loss of indigenous technology.

Alternatives

- Institutional forms of interfacing between government, NGO repesentatives and other members of civil society should be planned.
- External technical support should only supplement traditional knowledge and technology
- People-oriented alternatives should be worked out by redefining resources, and demanding people's rights over resources and creating local data banks for networking.

National Level

- Research in India on greenhouse gas emissions is not adequate, hence should be encouraged. The position of Government of India should be based on indigenous studies and not on research done elsewhere.
- There should be a definite policy to monitor GHGs in the atmosphere but according to regional differences the urban and the rural areas, the coastal, arid, mountainous and tribal areas.
- There should be a better policy on the regeneration of forests, reforestation and reclaiming wastelands. There should be a genuine Joint Forest Management (JFM).
- There should be a definite policy on coal and other matter creating flyash. There should be incentives and disincentives for the use of coal and for cleaning of coal and legal measures to ensure buying of the by-products like bricks made of flyash.
- There should be a definite policy on the public transport that is causing GHG emissions in all the urban areas. There should be a monitoring of vehicular pollution in the urban and rural areas separately. Separate norms should be worked out within each region for rural and urban areas with a focus on public transport.
- India should support the island states' position on GHG reduction with new demands like faster reduction by rich countries and per capita norms. More research is required on the implications for the coastal areas of India and India's position should be based on the understanding of India's coastal areas regionally. There is no single set of implications for all regions.

The two most immediate needs that emerged from the discussions during this meeting were: Networking (among people from various disciplines) and documentation (of grassroots alternatives, impact of macro processes on local communities and technical data on climate change).

The meeting generated enthusiastic response from the participants hailing from diverse disciplines. It was heartening to see that they volunteered to take up research studies, and documentation and dissemination activities through informal networking. •

Living Religion

Buddhist Thought in Ladakhi Life : Seeds of Sustainability

As in all Tibetan Buddhist societies, the highly developed monastic system is the most prominent feature of Ladakhi culture and social organisation. The massive presence and role of the monasteries reflects the society's priorities — virtually all the resources and energies of the people beyond the satisfaction of their daily needs is sunk into these storehouses of learning and wisdom. It is a culture in which the higher values of Buddhism are prized above all...

Beyond the monastery, Buddhist symbols and objects of devotion are found everywhere in people's houses and scattered across the landscape... In the course of everyday life in Ladakh the people are constantly reminded of the higher truths of Buddhist philosophy: the interdependence of all things, the ultimate emptiness of apparently separate, independent beings. These sophisticated theories of reality and the lofty values of the scriptures are not confined only to the lamas who are versed in them, but, to a great extent, shared by all.

For me the most profound expression of Buddhism lies in these more subtle values and attitudes among the people. Although deep meditation is rarely practised outside the monastic community, people spend significant periods of time in a semi-meditative state. Older people in particular recite prayers and mantras as they walk and as they work — even in the middle of conversation. Recent research in the West suggests that during meditation a person enters the state of mind that perceives in wholes and patterns rather than by isolating and itemizing things. This may explain the holistic or contextual world view characteristic of the Ladakhis, even those who have little knowledge of the teachings.

It could be argued that there are traces of Buddhist awareness even in the Ladakhi language. There is a greater emphasis on relativity than in any Western language I know. The language obliges you to express the context of what you are trying to say. Most strikingly the verb `to be' has more than twenty variations, depending on, for example, the relative intimacy of both speaker and listener with the subject matter and the relative certainty with which something was stated. How I say `it is milk' will depend on whether it is my milk (if not, then whose), whether I can see the milk, and so on. And if I ask someone, for instance, `is it a big house?' he or she is likely to answer `it seemed big to me'.

It could be argued that there are traces of Buddhist awareness even in the Ladakhi language.

The same relativity or contextuality occurs on a conceptual level. The Ladakhis do not share our enthusiasm for categorizing and compartmentalizing the world... For example, good and bad, fast and slow, here and there are not sharply differing qualities but aspects of a continuum, a matter of degree...

Also reflecting the Buddhist view of reality, the Ladakhi sense of self is based on a complex web of interconnection and constant change, rather than a notion of static isolated individuality...

Ladakhi attitudes to life and death are imbued with an intuitive understanding of impermanence, from which a lack of attachment grows naturally... They may be unhappy to see a friend leave or to lose something valuable, but not *that* unhappy.

The same sincere acceptance of worldly impermanence is apparent in their acceptance of death. Life and death are known to be a single process of constant renewal and return. Ladakhis do value life highly, but they see the present life as only one of many, and will not cling to it in dread of death... •

(Excerpts from Helena Norberg-Hodge's "May A Hundred Plants Grow From One Seed: The ecology tradition of Ladakh meets the future", ***Buddhism and Ecology,*** Cassel, New York, 1992)

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