



EDITORIAL

In recent years, a number of studies have been published on development aspects of developing countries. But most of the studies do not take into consideration, the depreciation of the natural capital. If the studies are adjusted for ecological costs, the development statistics will show a downward trend, may be a negative indicator in cases of developing countries. It is precisely for this reason, that the World bank recently organised a Conference in Washington on "Valuing The Environment".

As recently pointed out in the Editorial by the 'Down to Earth' magazine, there is probably no other way that market economists can deal with the environment, except by treating it as an externality, that ought to be internalised through suitable valuation and appropriate fiscal intervention in the market place. The prices that we pay do not reflect the ecological costs of our production or consumption and these get passed on to the poor of the current generation or to the unborn generation.

It is now well accepted, that it is the rich that consumes most of the world's economic resources, and it is obvious that most of the world's rich live in the industrialised countries, while most of the world's poor live in highly degraded regions, particularly in developing countries. Rich of the South, too, owe their responsibility to the full economic cost of food, electricity or timber they consume.

If ecological costs have to be incorporated in market prices, then it is imperative that the exercise begins with a global structural adjustment, so that the northern consumers and producers begin to pay ecological costs of the consumption. The North ought to pay between US \$ 50 billion and US \$ 100 billion every year, for the use of the South's share of global atmospheric benefits.

Keeping tropical forests as an insurance against global warming and erosion of biodiversity, will ultimately benefit the global automobile, oil, gas, food and pharmaceutical industries. Taking an annual rent of US \$ 40 per annum per hectare of tropical forests, we get another ecological subsidy of the order of about US \$ 80 billion a year. In addition, the North should pay royalties on the use of the South's biodiversity, and damages for the destruction of the ozone layer. Finally, there are all those economic costs that ought to be paid for production of internationally traded commodities, such as bananas, tea, coffee, cocoa, chocolate, peanuts, prawns and pineapples.

The North is already beginning to charge the South for the ecological cost of their products and it is not happening the reverse way. Therefore, there is a need for global, ecological and structural adjustment. The route for the developing countries to attain this, should be a political rather than a technical approach. This does not mean that the States should not hire experts to determine ecological values. In finality, this kind of exercise only will reflect correctly, the balance of trade between the countries.

It is now more than a year after the Rio Conference, which discussed Agenda 21. It is time to look back and see the progress on the follow-up of Agenda 21. The Global Environmental Facility (GEF) was the outcome of the Rio Conference, but, as the threat to the Global Biodiversity and the Atmosphere increases, GEF has frozen all ongoing projects and postponed decisions pertaining to others till November 1993, when the Independent Evaluation Committee will submit its Final Report. The interim report of the functioning of the GEF has suggested mismanagement, wasteful expenditure, bad decisions and use of unqualified people as Consultants in the implementation of GEF's progress.

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It is very distressing to note, that such a laudable scheme should get bogged down with these kinds of avoidable problems.

It is however, apparent, that a very conscious effort, on the part of the States and the UN System, is being made, to follow up action on Agenda 21. Perhaps it will take some more time for them to achieve concrete progress. However, it is heartening to note, that within the UN System and among few countries, an effort is being made to develop few environmental indicators, like GNP and GDP in economics, to tell the "Health of the Environment". These will be Environmentally Sound and Sustainable Development Indicators" (ESSDI). This would be a useful exercise to assess the real growth of a Country or a region, duly taking into consideration, the environmental aspects.

In this context it will be apt to quote 'The Bulletin' published by The Centre for Our Common Future. "How soon should we expect tangible change? Judged against Stockholm, it took five, may be ten years, before that Conference could reasonably be judged a success or a failure. Five year honeymoons are neither politically, socially nor environmentally acceptable any more. Rio's honeymoon will have to be much shorter. It may be unreasonable to expect material changes after only one year, but at least there must be expectations of change. And these expectations of change must become more widely visible, not just to the eco-lite."

Editorial Board



COUNTRY NEWS

BANGLADESH

NEW RULES FOR NGOS

The Bangladesh Government has modified rule for Non Governmental Organisations (NGOs) in order to simplify procedures and establish their accountability. The step followed allegations by the NGO Affairs Bureau that leading NGOs were violating rules.

Under the new rules, the Ministry of Home Affairs will decide whether the NGOs were engaged in anti-state or anti-social activities; whether they were taking part in political activity, and whether they were against religious, moral and social values.

DISASTROUS DYKE

Bangladesh's second largest water body, **Beel Dakatia**, once a 31,566-ha tract of flourishing agricultural land and balance ecology, has been flooded with brackish water for the past decade. A dyke built to contain the 24 km long and 16 km wide waterbody, as part of ambitious Coastal Embankment Project, is to blame for choking its drainage system and increasing brackishness. The rich flora and fauna in the region has also been destroyed.

This has affected half a million small-scale farmers and agricultural labourers, who had been attracted to the area soon after the dyke was built by promises of higher productivity.

Reports also blame the dyke for the silting of drainage channels, compounded by the outlet mechanism of sluice gates failing because of lack of maintenance.

WORKSHOP ON WOMEN AND ENVIRONMENT

As an attempt to respond to Chapter 24 of Agenda 21, relating to Women, Environment and Development, the National Association for Resource Improvement (NARI) in Bangladesh, held a Workshop On Women and Environment on 7 September 1993.

Its objectives were to adopt Agenda 21 in the context of Women in Bangladesh, to

Co-ordinate with Women's Groups involved in Environment and Development; to adopt an Action Plan that takes Project/Skill Sharing approach and to form a Task Force of Women, Environment and Development in order to have an institutional framework to implement Agenda 21.

WORKSHOP ON ENVIRONMENT AND POVERTY

Over 100 delegates from all over the world met in Dhaka in July this year to discuss linkages between Poverty and Environment. This follow up Meeting to the Earth Summit, inaugurated by the Prime Minister of Bangladesh and Chairperson of the South Asian Association for Regional Co-operation (SAARC) Begum Khaleda Zia, reinforced the need for a Global Convention on Poverty.

The International Workshop was organised by the Global Forum on Environment and Poverty (GFEP), which was set up in Rio by over 400 NGOs who mandated the Bangladesh Centre for Advanced Studies to act as the Secretariat for the GFEP.

World Experts on the different linkages between Environment and Academia, Governments, NGOs and International Agencies presented over 25 papers, covering such concerns as the Role of the Poor in the Regeneration of Environment, Employment, Population, Empowerment, Knowledge Systems and Traditional Knowledge, Innovation, Coping Strategies, Militarization, Natural Resources Accounting and Eco-systematic Planning.

This was followed by Group Discussions, covering the Three Conference Themes: Linkages between Environment and Poverty; The Poverty Convention: What is it and How to Achieve it? and An Action Plan and research Agenda for Resolving Problems connecting Poverty and the Environment. The Meeting recommended that each of these themes be addressed in greater detail through separate meetings of GFEP on each issue.

INDIA

CLOSURE OF 190 UNITS ORDERED

The Supreme Court of India has ordered the immediate closure of 190 industrial

units situated on the banks of river Ganga in Uttar Pradesh for their failure to install Effluent Treatment Plants to check the pollution in the holy river.

This directive was given by the Court during the resumed hearing of a Public Interest Petition which is seeking directions to the State Governments of Uttar Pradesh, Bihar and West Bengal to ensure that industries in the Ganga Basin stop polluting the river by discharging untreated effluents.

The break down of the industries which were ordered to be closed down are as follows: Sugar (1), Paper (59), Tannery (2), Chemical (14), Pharmaceutical (2), Engineering (17), Textile (66) and others (29)

The Court has also requested the Home Secretary of the Uttar Pradesh Government to personally supervise the execution of the Apex Court Order.

NATIONAL DATABASE ON ENVIRONMENT

Scientists are preparing a **National Database on the Indian Environment** to help speed up decision-making and remedial action on pollution and other environmental issues.

The ambitious **Environmental Database and Mapping through Geographic Information System (GIS) Project** is conducted by the **National Institute of Science Technology and Development Studies (NISTADS)**.

A Computer Centre in NISTADS will continuously receive data on Air and Water Pollution and other environmentally-related parameters from several hundreds of monitoring stations run by the Pollution Control Boards.

This vast pool of information will be integrated with images sent by the Indian Remote Sensing Satellite, Maps and Socio-economic data generated from the ground.

The database could be used to identify the sources of pollution, determine the impact of a specific polluter in a given situation and help Policy-Planners and Administrators to take quick decisions.

CFC SUBSTITUTES - INDIGENOUS EFFORT BEARS FRUIT

India's commitment to phasing out ozone-depleting substances received a fillip when scientists at the Indian Institute of Chemical Technology (IICT) in Hyderabad developed a process to manufacture HFC-134a, an Ozone friendly refrigerant. HFC-134a will be a substitute for CFC-12, which accounts for more than 50 percent of the harmful CFCs being phased out worldwide. HFC-134a does not release any chlorine atoms that damage the ozone layer.

The ability to manufacture HFC-134a indigenously will help India's phase-out schedule considerably. The three international chemical giants that have developed ozone-friendly substitutes - Hoechst of Germany, DuPont and Dow Chemicals of USA - prefer to sell developing countries finished products rather than transfer their manufacturing technology.

According to IICT Director Mr A.V. Rama Rao, within a year they will be able to produce HFC-134a at pilot plant level and Government and Industrial Agencies have placed orders worth Indian Rs 1 Crore with IICT. A prototype plant is being set up at a cost of Rs 6 crore and commercial production is expected to begin by 1996.

ANIMAL POWER

The Union Ministry of Non-conventional Energy Sources (MNES) plans to increase exploitation of the country's draught animal power (DAP) potential. A report prepared by a MNES Committee, in consultation, with the Bangalore-based Centre for Appropriate Rural Transportation and Management (CARTMAN), suggests the Government increase its annual spending on technology development and popularisation in this sector from about Rs 25 lakh now to more than Rs 100 crore by 1998-99.

The report says there are 84 million draught animals, such as bullocks and camels, in the country, representing "energy assets" worth nearly Rs 25,000 crore. The animals are estimated to be capable of ploughing, hauling and transporting with a total energy equivalent of 30,000 MW of power annually. Presently, less than 40 per cent of DAP potential is used. Even this, argues a spokesman of

CARTMAN, "represents petrol and diesel substitution worth nearly Rs 4,000 crore every year".

The report suggests an investment of about Rs 6,000 crore in Technology Development Programmes could create tillage and ploughing facilities for the 60 million farms of less than four ha each, which is considered to be the minimum area for economically viable use of tractors. Also, DAP potential utilisation could provide Rs 30,000 crore worth of "truck-substitutes" over short distances (upto 15 km) in areas that are not serviced by motorable roads.

NEPAL

OPPOSED TO POWER

According to a Panos Features Report from Nepal, environmentalists are opposing the Arun III Hydro-Electric Power Project in East Nepal on the grounds that there are "more practical, cost-effective and environmentally sound" alternatives.

The Kathmandu-based Alliance for Energy says the project "will be built entirely using foreign money, foreign technologies and foreign contractors. Hence the exorbitant cost of the scheme: higher per unit cost of unit power generation than in almost any country in the world".

The Alliance argues the "small is powerful" approach will enable Nepal to become independent and undertake projects that would help the nation.

NEPAL GOVERNMENT ANNOUNCES POLICY ON ENVIRONMENT

Prime Minister Girija Prasad Koirala, who is Chairman of the Nepal Environment Protection Council, recently announced the much awaited Environmental Policy of the Nepalese Government which envisages the maintenance of the balance between economic development and environment conservation on the country.

According to the new policy, proper management of the forest and water resources is essential to guarantee and enhance the continued productivity of agriculture. Soil erosion and deforestation could be checked only if the farmers are provided the alternate sources of energy by the Government.

One of the major factors contributing to the environmental problems in Nepal have been Urbanisation and Industrialisation. Unplanned construction in the Kathmandu valley has led to congestion which needs to be regulated through stringent measures. Government feels that local bodies must be involved in the maintenance of cleanliness which is deteriorating with every passing day. The use of Environmental Impact Assessment (EIA) has been recommended for identification of adverse environmental impacts and remedy such problems. Suitable legal measures are to be taken to ensure the policies of the Government. The Government has also been decided to ban the import of vehicles which are more than five years old.

LETHAL STORES

More than 36 tonnes of highly toxic chemicals are stored even after their date of expiry in the godowns of the Agriculture Inputs Corporation at Amlekhgunj, in Central Nepal.

The Nepal Forum of Environmental Journalists (NEFEJ) says these pesticides were supposed to be burnt in the kiln of the Hetauda Cement Factory in August 1991, but the plan was abandoned following protests by the Nepali Press and Non Governmental Organisations.

The report contends private firms overcome the problem of disposing the chemicals by merely changing the date of the expiry label.

PAKISTAN

DESCONAP FOCAL POINT RECEIVE TOP AWARD IN PAKISTAN

Dr Noor Muhammad, the designated official responsible for ESCAP activities within the Pakistan Agricultural Research Council (PARC) was recently awarded the **Tamgha-i-Imtiaz Award** in the field of Range Science.

Dr Noor Muhammad is an eminent scientist and acknowledged authority in the field of Range science. He has worked with dedication for the promotion of scientific management and conservation of natural resources in Pakistan and for the improvement of the most depressed pastoral communities of the desert and arid rangelands of the country.

In recognition of his outstanding services, this high civil award was conferred on Dr Muhammad by President of the Islamic Republic of Pakistan at a investiture ceremony on Pakistan Day, 23 March 1993.

PARASITE-STRUCK

Pakistan's **Juniper Forests**, the second largest in the world, have been struck by the dwarf mistletoe. This has been revealed by the Pakistani Scientists. The mistletoe is a parasite that hampers the growth of the host, seriously affecting seed development and leading to premature death.

Vast stretches of the forest have been affected and the scientists fear entire areas may be wiped out as the parasite continues to spread relentlessly.

ENDANGERED FISH

The popular fish, Palla, or liish as it is known in Bangladesh, is an endangered species according to Mirza Arshad Beg, former Chairperson of the Pakistan Council for Scientific and Industrial Research.

According to him dams have restricted the movement of fish in the last few decades and, as a consequence, its numbers have dropped considerably. He also points out that sediment deposits in the rivers have reduced drastically over the last 50 years. This coupled with over-fishing, has endangered the fish, which feeds at the bottom of the river.

BETTER LIGHT

Lighting offers much scope for improving energy efficiency in Pakistan, according to the country's National Energy Conservation Centre (ENERCON), which says the energy savings potential in lighting excess 50 per cent nationwide.

Using a World Bank Format for planning, ENERCON is seeking funding to implement a five-year energy efficiency improvement programme that envisages handing over the the whole efficient-lighting movement to the private sector. ENERCON has successfully persuaded the Government to lower import duties on products rated energy efficient from 100 per cent to 20 per cent.

After conducting a survey of lighting audits of selected commercial buildings,

ENERCON says though daylight is an excellent resource in Pakistan, it is poorly utilised. Architects, for example prefer to use tinted glass in windows. rather than selectively-coated glazing, which let light through, but not heat. The result is an unnecessary dependence on electric lights during normal working hours.

STUDENT TEACHES GREEN

A Pakistani student has single handedly started a plantation drive in Karachi. **Imran Sultan** has planted nearly 70 **Neem** saplings in the past five months in the Karachi Administration Employees' Housing Society Complex, and spending US \$ 600 on pits, earth, fertiliser, and the wages of a part time gardener, in the process.

"When people realise how important trees are in providing good, clean air, they will see how important it is to protect them" says Sultan.

The Karachi Administrative Women Welfare Society has installed 40 tree guards to save his saplings from cattle.

THREATENING MONSOONS

The Director of the Pakistan Institute of Environmental Development Action Research fears that Pakistan's agriculture dominated economy may be crippled by increased variation in monsoons over the next 50 years as a result of global warming.

With the expected doubling of atmospheric Carbon, average monsoon rainfall in the region could increase by 17 to 59 per cent, resulting in unprecedented floods.

OPTIMISTIC TARGET FOR COTTON CROP

According to the country's Central Cotton Committee Pakistan's cotton crop will reach the target of 960 million kg despite the locust threat and reports of a virus attack.

The final output will depend on the extent to which Pakistan is able to mitigate the damage from the locust attack. Though at least 47,000 band locusts had been eliminated by the middle of September by spraying insecticides over a 12,000 sq km area, at least 50,000 sq km remained as a breeding ground for the pests.

SRI LANKA

THE FIRST NATIONAL ENVIRONMENTAL BALLET 'RANDIYA'



The Ministry of Environment and Parliamentary Affairs were actively involved in producing the First National Environmental Ballet "RANDIYA" with a student cast of 60 chosen from schools in and around Kandy. The theme of the ballet was "Water and Environment" and was primarily undertaken for the promotion of environmental awareness.

The Choreography, Direction and Production was done by Mr Premakumar Epitawala who is a very distinguished artiste and environmentalist who provided his services free of charge whilst the other expenses were met from Norwegian Aid.

Already performances have been held in Colombo, Kandy and Kurunegala. It is hoped to stage this ballet in other major towns in Sri Lanka. An edited version of this ballet will also be telecast over the National Television.

RESEARCH AND DEVELOPMENT PROGRAMMES AND OTHER ADVANCEMENTS IN THE AREA OF BIOTECHNOLOGY

A Steering Committee on Biotechnology has been formed at Natural Resources Energy & Science Authority (NARESA) to co-ordinate all activities in the area of biotechnology at National Level. This Committee will also act as a monitoring body for genetically modified organisms. The members of the committee are specialists in different areas of biotechnology, including representatives from the private sector.

A Workshop on "Research and Training Needs of Biotechnology" was held in NARESA recently. This was jointly organised by the Institute of Fundamental Studies (IFS) and NARESA and funded under the IFS Biotechnology Programme.

The Programme of the Workshop included Overview Presentations on University Undergraduate Courses relevant to Biotechnology and Specialised Aspects of Biotechnology that could be developed by Industry. The Workshop was attended by representatives from relevant Private and Public Sector Industrial and other organisations in the country.

NATIONAL TREE PLANTING MONTH CELEBRATED IN SRI LANKA

The Cabinet of Ministers of Sri Lanka decided to designate 17th September as the National Tree Planting Day and the month following as the National Tree Planting Month. It was further decided that this would be an annual feature in the calendar of National Events.

The aim of the National Tree Planting Day and the National Tree Planting Month was to create awareness amongst the people of the importance of conserving the topsoil. Attention was also paid to induce people to plant trees by way of convincing them of the necessity and the value of trees and human welfare. Special attention was also paid regarding the protection and after care of the newly planted trees.

ROAD TO DISASTER

According to a Panos Report, Ecologists in Sri Lanka have opposed the proposed 31 km Colombo - Katunayake expressway. They claim it will dislocate approximately 2,500 families, affect the livelihood of 2,000 fisher folk and destroy 35 ha of biologically rich marshland. The environmentalists contend the flood problem will be aggravated as the expressway will cross two flood plains, preventing rainwater from flowing into the flood basin.

NO DANGER TO DOLPHINS

Sri Lanka's National Aquatic Resources Agency (NARA) has said there is no need to impose a total ban on dolphin fishing. A NARA Study shows that such a ban would endanger the livelihood of the country's fisher folk.

While admitting that accurate information on the size of the dolphin population is not available, the study says that the numbers landed are so small, dolphins are in no danger. NARA, however, advises continuous monitoring of dolphin and urges further studies to establish stock size.

WORLD BANK REVIEWS DONOR ASSISTANCE FOR NATIONAL ENVIRONMENTAL ACTION PLAN

The National Environmental Action Plan (NEAP) prepared by the Ministry of Environment and Parliamentary Affairs (MEPA) in 1991 is currently being developed by the World Bank for donor assistance.

A World Bank Task Team visited Sri Lanka in November 1993 to review the National Environmental Action Plan with officials of the MEPA and other sectoral agencies and ministries. A Workshop was also held to discuss the NEAP proposals.

The World Bank Mission met Hon. Dr Wimal Wickremasinghe, Minister of Environment and Parliamentary Affairs and finalised these proposals also in consultation with Dr Mohan Munasinghe, Division Chief for Environmental Policy of the World Bank.

The project development will provide donor opportunities in several sectors. All the 9 sectors outlined in the National Environmental Action Plan will be studied for donor assistance by the World Bank contractors NORCONSULT in association with the local contractor, Engineering Consultants Ltd, within the next five months.

Project Development for funding will be undertaken in Land Resources, Water Resources, Urban and Industrial Pollution, Coastal Resources, Educational and Institutional Capacity Building, Forestry and Biological Diversity, Wildlife, Energy and Mineral Resources.

GREEN TECHNOLOGY

URBAN RUBBISH GIVEN A NEW LOOK BY THE PRIVATE SECTOR (INDIA)

With Government efforts proving inadequate, private organisations recycle the lions's share of urban waste in India.

The biggest recycling programme in New Delhi is conducted by **Development Alternatives (DA)**, a voluntary organisation that recycles 200 kg of waste every day. DA employs women to make products for Automobile Filter Manufacturers, Printers and Suppliers of

Coasters out of the waste that they collect from Embassies, Associations and Educational Institutions.

Delhi's **Jan Sewa Ashram** conducts Environment Education Programmes and runs a Paper Recycling Unit. It also offers consultancy services to set up units to manufacture 'Handmade Paper' and helps market products through its outlet, Environmentally Appropriate Recycling Technology for humanity. The Ashram is now setting up a recycling factory in Parwanoo in Himachal Pradesh.

The Tamil Nadu Newsprint and Papers Ltd converts bagasse, a waste product of the sugar industry, into newsprint and writing paper, thus helping to conserve forests while aiding waste management.

The Indian Sugar and General Corporation in Yamunanagar, Haryana is one of the largest companies manufacturing Solid Fuel Briquetting Plants for the conversion of Agricultural wastes in to briquettes for fuel.

Daurarala Sugar Works in Meerut District of Uttar Pradesh has set up a plant for the production of Methane gas from effluents discharged by their factory, reducing toxicity of the effluents as well as producing energy.

Among the government enterprises, **The Indian Renewable Energy Development Agency (IREDA)** provides technical and financial assistance for setting up projects in the fields of Bio-energy, Methane Recovery from distillery and industrial effluents and manufacture of Solid fuels from municipal and Agricultural Wastes. IREDA has started a series of Entrepreneurship Development Programmes to motivate potential entrepreneurs to undertake ventures in methane gas recovery. It arranges technical consultancy services and provides loans at concessional rates.

The Khadi and Village Industries Commission Ltd collects raw materials from government organisations and private sector and converts it into paper. It helps conserve forest resources by not using wood pulp in the recycling process.

TISSUE CULTURE IN A PRESSURE COOKER (INDIA)

"If tissue culture companies can make profits, why can't villagers?" asks C.R. Raju, who has developed tissue

culture technique that he claims is cheap and easily transferable to the people, a feat research laboratories are still to achieve. Raju developed the "Low Cost Technique" as part of the voluntary work he does for the Centre of Science and Technology for Rural Development (COSTFORD), an NGO based in Mavelikara in Kerala.

The tissue culture technique developed requires simple equipment such as a small balance, a hood, a pressure cooker, a heater, a tube light and small room that could be made air tight while culturing. Plants selected for tissue culture were those that could tolerate temperatures of 20-30° c and expensive borosilicate glassware was replaced by cheap colourless bottles. Chemicals of low purity levels were used.

The cost reduction achieved was enormous. The culture space of bottles worked out to less than 1 paise per sq cm as compared to Rs 250 per square cm of culture space in the case of borosilicate glassware.

BIOCHEMICALS vs PETROCHEMICALS (USA)

US Environmental regulation to check industrial pollution and technological advances are causing a shift from petrochemicals to eco-friendly compounds, called biochemicals, which are obtained from plant matter such as wood and cellulose.

According to Morris and Ahmed, apart from a few chemicals and adhesives, there were virtually no plant derived industrial products in the US market a decade ago. But today, such products compete with those derived from petroleum in just about every major category. Bio-paints have captured about 3 per cent of the paint market; vegetable oil-based inks account for 6 per cent of the printing ink market; more than 10 per cent of detergents are plant based; bottles are now made from a plastic manufactured by a bacteria; most US newspapers use vegetable oils instead of mineral oils for their colour sections and vegetable oils and flower fragrances are being used in shampoos.

COPY ERASER (JAPAN)

Tired of waste paper baskets full of photocopied waste? Now, you can reuse those sheets of paper, thanks to a machine that erases clean photocopied documents. But Ricoh Co of Japan, which has developed the erasing technique, say their copy eraser is still at a the prototype stage.

To reverse the process used in a photocopier, first a chemical solution is applied to the printed page to loosen the toner. Then, a heated roller is used to peel off the toner, leaving the page clean.

The prototype, however, can erase only three pages a minute and will be effective only about 10 times on the same sheet because the chemicals damage the paper slightly each time.

TOWER POWER (ISRAEL)

Israeli scientists claim to have devised a cheap way to generate electricity in coastal deserts using sea water. The method can also be modified to desalt sea water and use it for desert farming.

The scientist say in this process, sea water is pumped to the top of about a kilometre high, hollow, cylindrical tower and is sprayed into its centre, where the water rapidly evaporates in the dry desert heat. As the air is cooled by evaporation, it grows denser and heavier and begins descending and by the time it hits the tower bottom, it's travelling at 80 kmph. This powerful downdraft can be piped into tunnels to drive wind turbine electric generators. By one estimate, one such tower could produce 40 billion to 80 billion kilowatt hours of electricity a year. but there is still one problem to be solved, disposing the salt that evaporated sea water leaves behind.

SMALL WIND ELECTRIC GENERATOR

Description

A small, low cost wind electric generator has been developed and extensively tested. The design employs time tested automotive alternator series and does not require any conventional manufacturing facilities. An innovative blade making technique has been performed which allows the user of the technology to tailor the system to any given wind and other operating conditions. The know-how is imminently suitable for any small workshop with spare capacity.



Advantages

- Low cut - in and rated wind speeds
- Suitable for moderately windy places
- Furling mechanism protecting the machine in case of high winds
- Supplementary source of income for small and medium scale industries

Areas of application

- Adoptable to variety of generators and environment application

Degree of development

- Pilot plant. Know how transferred to medium scale industry in India

Terms of transfer

- Licensing

Remarks

A clean technology with no pollutants

***But you aren't made like a money plant, or a croton, or a flower bed.**

Watering a plant with a sprinkler make good sense. Since that enables water to reach different parts of its complicated, leafy body. However, the same doesn't hold true for the human body. Which makes your ordinary bucket bath as functional as any shower bath. And, of course, a lot less wasteful. What with water scarcity all around, any water- specially tap water- saved can be used elsewhere. To greater benefit, Particularly, in localities deprived of it. Please! Try to forego wasteful luxuries. So that someone less privileged may have some water to drink. Or to bathe with ...

You'll help save water. We hope.



WASTE MANAGEMENT

TUBELIGHTS GIVE MORE THAN LIGHT TO LABS (INDIA)

Scientists at the **Gandhigram Rural Institute (GRI)** in Tamil Nadu have found that used tubelights can be recycled into inexpensive laboratory apparatus, which will cost just one tenth of what such apparatus costs in the market.

B.V. Appa Rao, Head of the **University's Science Instrumentation Centre** and his team have been able to develop from used tubelights more than 25 pieces of Laboratory Equipment such as Measuring Cylinders and Beakers that are as good as those made in factories. The GRI has been set up mainly to undertake research on appropriate technology for rural areas.

This method will not only solve the problem of getting rid of used tubelights but will also benefit thousand of students.

In the recycling process, first one end of the tubelight is heated. After the wax and aluminium plugs are removed from both ends and the gas escapes, the tubelight is cleaned so that it becomes a transparent glass tube. Liquid petroleum gas-fed burners, oxygen and glass blowers are needed to shape the glass into laboratory apparatus.

BOOKS RECEIVED

- **Low-Cost Housing in Developing Countries**
G. C. Mathur
Publisher : Centre for Science & Technology of the Non-Aligned and Other Developing Countries
- **Business Strategy for Sustainable Development: Leadership and Accountability for the '90s.**
Publisher: International Institution for Sustainable Development, Canada.
- **Global Programme on AIDS: The Costs of HIV/AIDS Prevention Strategies in Developing Countries**
Publisher : World Health Organisation
- **Exploding Freedom**
Sam Pitroda
Publisher: Allied Publishers Ltd. India
Price: Ind Rs. 200.
- **Who Will Save The Forests? Knowledge, Power and Environmental Destruction.**
Tariq Banuri & Frederique Apffel Marglin.
Publisher: Zed Books, London and New Jersey & UNU/WIDER

- **Economics of Health Care Financing: The Invisible Hand**
Cam Donaldson and Karen Gerard
Publisher: Macmillan, UK.
- **Our Planet, Our Health - Report of WHO Commission on Health and Environment**
Publisher: OUP, India
Price: Ind Rs. 150.
- **Floods, People and the Environment**
Shapan Adnan
Publisher : Research and Advisory Services, Bangladesh
- **International Environmental Negotiation**
Gunnar Sjostedt
Publisher : International Institute for Applied Systems Analysis
Price : US \$ 45
- **An Introduction to Health Planning in Developing Countries**
Andrew Green
Publisher : Oxford University Press, UK.
- **Environmental Law and Policy in India**
Armin Rosecranz & Martha Nobel
Publisher : Tripathi Publications, India
Price : Ind Rs. 115.
- **Green Architecture**
Brenda and Robert Vale
Publisher : Thames and Hudson, UK.
Price : Pounds Sterling 18. 95
- **Meeting the Challenge - Report Of the Independent South Asian Commission on Poverty Alleviation, November 1992**
Publisher : SAARC
- **Tropical Forestry - Third World Priorities Versus Western Concerns**
Nick Pyatt and Jeremy Williams
Publisher : School of Agricultural and Forest Science, UK.
- **User-Friendly Irrigation Designs**
Nirmal Sengupta
Publishers: Sage Publications, New Delhi
Price: Ind Rs. 185.
- **Man and Environment in India Through the Ages**
D. P. Agrawal
Publisher : Books and Books, New Delhi
Price: Ind Rs. 1,000.



Charcoal produced from sawdust briquettes in Northern Thailand A new market for "wood waste"



•HEART-FRIENDLY WALNUTS



Want a healthy heart? Then eat lot of walnuts. Just 28 grams of walnuts a day would be perfect, recommends a recent study that found that nuts to be an excellent source of heart-friendly fatty acids. Also, walnuts do not contain any cholesterol.

Researchers at California's Loma Linda University put 18 male volunteers on two cholesterol-lowering diets, one rich in walnuts and the other without walnuts, without increasing the proportion of calories the proportion of calories from total dietary fat. They found the cholesterol levels in the men put on a walnut-rich diet were significantly lower than the other group.

BIODIVERSITY CONVENTION IN FORCE BY END OF 1993

The Biodiversity Convention will come into force on 29 December 1993, following the 30th ratification - by Mongolia - just days before the opening of talks in Geneva to discuss the scope and responsibilities of the Conference of Parties (COP) to the Convention.

The Intergovernmental Committee on the Convention on Biological Diversity (ICCBD) met for one week from 11-15 October. Several issues came up for consideration. These included Funding, Biosafety Issues, The Conference of Parties and Methods for Achieving Conservation and Sustainable Use of Biological Diversity including Technology Transfer and Capacity Building.

The Meeting was opened by UNEP Executive Director Elizabeth Dowdeswell and was addressed by an NGO Representative of the Global Biodiversity Forum.

The Meeting was divided into two Working Groups. The First Group discussed the Conservation and Sustainable Use of Biological Diversity whilst the Second Group looked into the Institution(s) Operating the Financial Mechanism, the Development of an Evaluation Framework to Recommend to the Conference of Parties and Technology Co-operation and Capacity Building.

SACEP NEWS

SACEP SIGNS MEMORANDUM OF UNDERSTANDING WITH UNEP/GRID

SACEP recently signed a Memorandum of Understanding with UNEP's Global Resource Information Database, Bangkok for a Project titled "Regional Environment Information Network for Asia and the Pacific" (RENRIC). The value of the project is US \$ 142,000.

Under this project, the existing RENRIC Centre at SACEP Headquarters in Colombo would be strengthened in terms of Hardware, Software and Trained manpower. In addition RENRIC Cells in Member Countries of SACEP would be established with necessary infrastructure and will be networked with Centre at SACEP Headquarters.

The Project will use Geographical Information System (GIS) Technique for Information Exchange among the Member Countries as well as other institutions. The Centre will not only act as a source of information but will also act as a useful advisory service for Member Countries for their Environmental Management.

REGIONAL TRAINING COURSE ON CENTRIFUGAL CHILLERS FOR SOUTH ASIA

The Ozone Action Programme (OAP) of UNEP has scheduled a Regional Training Course on Centrifugal Chillers for South Asia sometime in March 1994.

The objective of this Training Course is to promote recovery and recycling as well as better practices in the field of centrifugal chillers. The Training Course is meant for Service Technicians, Technical Managers and Instructors from Technical Training Institutes who are expected later on to undertake the training of additional similar staff.

As requested by OAP, SACEP has informed its Member Countries to nominate 4 Participants each for this Training Course. The expenses of all SACEP Country participants will be met by OAP.

IMPORTANT VISITORS TO SACEP SECRETARIAT JULY - NOVEMBER 1993

IDRC, New Delhi

1. Mr. Vijay Pande
Regional Director,
South Asia Regional Office,
New Delhi.
2. Mr Michael Loevinsohn
Principal Programme Officer

ASIAN DEVELOPMENT BANK, Manila

1. Mr. J. Wartiovaara
Environment Specialist
2. Mr C. R. Rajendra
Executive Officer,
Programs Department (West)

UNEP, Bangkok

1. Mr Surendra Shrestha
Director, GRID
2. Dr Reza Amini
AG Co-ordinator,
East Asian Seas Programme

EEC, Brussels

1. Mr Erich Muller
Head, Unit for South Asia
Brussels.
2. Mr Michael Stibbe,
Desk Officer Sri Lanka.

ESCAP, Bangkok

1. Mr Brij Kishore,
Senior Expert on Environment
2. Mr Bent Nielsen
International Consultant
3. Mr Giuseppe Daconto
UNIDO Assistant Expert
Environmental Co-ordinating Unit

FORTHCOMING CONFERENCES

DATE	EVENT	VENUE
29 Nov - 17 Dec 1993	International Centre for Research In Agroforestry: Training Course on Experimental Design and Analysis on Agroforestry Research.	Nairobi, Kenya.
6 - 10 Dec 1993	Preliminary Meeting of Experts to Assess the Effectiveness of Regional Seas Agreements.	Nairobi, Kenya.
20 - 23 Dec 1993	ESCAP/UNEP/SACEP' Workshop on Management Strategies For The Protection of the Coastal & Marine Environment in the South Asian Seas Region	Colombo, Sri Lanka.
17-18 Jan 1994	Intergovernmental Negotiating Committee for a Convention to Combat Desertification. Third Substantive Session.	New York U.S.A.
March 1994	ESCAP/UNEP/SACEP Evaluation and Review Meeting on Capacity Building on Planning and Management of Coastal Areas of South Asian Seas Region	To be Decided
21-31 March 1994	Intergovernmental Negotiating Committee for a Convention to Combat Desertification. Fourth Substantive Session.	Geneva, Switzerland.
6 - 9 April 1994	Society for International Development: World Conference on People's Rights and Sustainable Development	Mexico City, Mexico.
11 - 12 April 1994	Third Substantive Session of the Preparatory Committee for the International Conference on Population and Development	New York, U. S. A.

SACEP NEWSLETTER is distributed free of charge to National Environmental Agencies, Non Governmental Organisations, Citizens' Groups and Mass Media. It welcomes news items, short articles, and viewpoints on environmental issues from readers in order to promote environmental awareness in the South Asian Region. The Editor reserves the right to edit and publish manuscripts in accordance with the editorial requirements of the publication.

All enquiries related to SACEP NEWSLETTER should be addressed to SACEP Secretariat, 84 Lorensz Road, Colombo 4, Sri Lanka.

The presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of SACEP concerning the Legal Status of any Country, Territory, City or Area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The Printing of this Newsletter, from its inception in January 1984, has been solely due to the assistance received from the UNEP Regional Office, Bangkok. The SACEP Secretariat wishes to place on record its deep appreciation for this very kind gesture.

STORIES OF SUCCESS

SACEP intends to bring out a compendium of Stories of Success in the field of Environmental Management in the South Asian region. It welcomes informative articles from all interested parties. The Editor reserves the right to edit and publish manuscripts in accordance with the editorial requirements of SACEP's Publications. No honorarium will be paid by SACEP for any articles that will be published.



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