

ASEP NEWSLETTER

The Impact of the Imminent Environmental Management System ISO 14000 *How to Cope with It*

by


C.M Lin

Principal Consultant, Environmental Management Division
Hong Kong Productivity Council

There is growing awareness that environmental management must be among the highest priorities in doing business. This environmental consciousness is the result of a large number of factors such as increased media attention, tougher environmental legislation, green consumerism and environmental disasters. The worldwide movement towards maintaining and improving the quality of the environment will soon gain bigger impetus under the influence of a major new series of international standards.

To be designated ISO 14000, the series is being prepared by the International Organization for Standardization (ISO) to provide organizations with guidance on managing environmental impact through management functions. The management functions can include how an organization designs its organizational structure; how it assigns responsibility to its managers, staff and workers; how it allocates resources; how it evaluates practices; how it controls documentation and so on.

ISO 14000 series includes a broad range of environmental disciplines encompassing environmental management system, auditing, labelling, life-cycle assessment and product standards. The standards can be classified

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into guidance standards and specification standards. ISO 14001 is the specification standard to which companies register, the other standards in ISO 14000 series are not prescriptive but serve to provide guidance. More than thirty countries are involved in the preparation of ISO 14000 which will very possibly have a significant influence on international trade. This paper examines the possible impact and discusses action that can be taken to help cope with the standards.

Significance of the ISO 14000 Series

ISO 14000 is a new series of voluntary environmental standards and is unlikely to be made mandatory by any government. Despite its voluntary status, the series is being prepared with the participation and support of more than thirty countries, encompassing most of the important trading nations, such as the United States, the United Kingdom, Singapore, Korea, Japan, Germany, France, the People's Republic of China and Canada. Once the ISO 14000 series becomes finalized, it is envisaged that the governments of many of these countries will encourage and support its adoption within their borders. It is also highly probable that when the government organizations of these countries conduct transactions with business organizations, they will take into consideration whether the latter comply with ISO 14000 standards. In this way ISO 14000 will receive indirect, but very important, backing from many governments.

Many powerful businesses are also planning or beginning to impose their own environmental standards on trading partners. Despite the effort and resources needed to set environmental standards, these firms are not intimidated by the requirements and are willing to proceed on their own. This phenomenon is not confined to developed countries in North America or Europe. In Asia, the Hong Kong Productivity Council was commissioned by a purchasing firm to assess the environmental performance of its suppliers, with a view to setting environmental standards for them. This has become a common scenario, even before the emergence of ISO 14000, when companies will have to make extra efforts to implement environmental management.

After the publication of ISO 14000, companies need not devise their own standards, because ISO 14000 will

provide the necessary reference and guidance. Companies committed to environmental management can simply adopt ISO 14000, or request that their suppliers and contractors adopt it. A widespread adoption of ISO 14000 is envisaged. The more proactive and environmentally conscious sector of the business community will quickly follow the ISO 14000 standards and create a "pull" factor by requiring others to follow suit. ISO 14000 will very possibly become the *de facto* commercial standard for environmental management.

An organization that cannot comply with the standard may lose potential business partners, limiting its ability to form strategic alliances. Furthermore, it will run the risk of damaging its standing with banks and creditors. This may be true for both SMEs and large companies, although the magnitude of impact on large companies is likely to be greater. Banks and insurance companies will become reluctant to lend money or underwrite risk if an organization's business potential is curtailed or its environmental liability is high. Take the example of a chemical company approaching a bank to finance its expansion program. It is entirely possible that the bank may decide that a chemical business, without a certified environmental management system, will experience greater difficulty in marketing its products and thus may be less likely to make the loan.

Impact of the ISO 14000 Series

The reaction to ISO 9000 can help to predict the impact of ISO 14000. ISO 9000 was published in 1987. Today more than 70,000 companies are registered to ISO 9000 standards in more than 75 countries. Bearing in mind the fact that the interest in and the attention being paid to quality management issues before the introduction of ISO 9000 in no way matched current interest in environmental management issues, it is logical to predict that the impact of ISO 14000 will at least match that of ISO 9000.

It is envisaged that ISO 14000 will be a very significant development and will exert tremendous influence at various levels: *company, industry and national*.

At the *company level*, it will affect the ways in which an organization conducts its dealings with suppliers, contractors, customers, bankers, creditors and other parties. It will affect the ways in which the company operates and manages internal procedures. Production processes, use of materials, management practices and employee relationships can all be affected.



At the *industry level*, ISO 14000 will exert great pressure on industrial or business sectors that cannot meet the environmental standards. ISO 14000 will also produce opportunities for the creation of new industries that conform to higher environmental expectations. Using the phasing out of CFCs as an example, it can be seen that an entire industrial sector in this case, producers of CFCs can be swept away if it is incompatible with the environment.

Accompanying the demise of the CFC production sector is the emergence of an industry involved in the production of CFC substitutes. CFC production workers have much to complain about, such as the perceived severity and unreasonableness of environmental pressure, workers in the rising new industry will undoubtedly herald the correctness and wisdom of environmental management. ISO 14000 will prompt people to look more deeply into the environmental reasonableness of individual companies as well as groups of companies of the same type. It will not do this in a single step, but it will facilitate the examination process by providing a more effective and systematic tool to carry out the examination. It will become easier to identify environmentally unsound industries, which may be driven out of business at a pace proportional to the extent of harm they do to the environment.

On a *national level*, ISO 14000 can affect international trade. We have seen that companies are beginning to exert influence on their business partners because of environmental considerations. This is happening in the absence of ISO 14000. The introduction of ISO 14000 will make it much easier for companies to exert their influence in the future. If a country is slow to follow ISO 14000, it seems highly plausible that business firms within that country will find it increasingly difficult to do business in other countries. The country's competitiveness may drop, and it may find itself in the awkward position of having its business opportunities snatched away by other countries that are better prepared for the adoption of ISO 14000.

Some people are highly suspicious of ISO 14000. The creation of a World Trade Organization will bring the lifting of tariff barriers, and industrialized countries will soon lose their competitive edge. Is all the discussion about environmental management simply a ploy to create non-tariff environmental trade barriers that will enable developed countries to maintain their competitive edge? ISO 14000 drafters strongly deny that this is the case and emphasize that the standard should not be used to create non-tariff trade barriers. However, it would be exceed-

ingly difficult, if not impossible, to prove or disprove the presence of such an intention. From a pragmatic viewpoint it does not serve any useful purpose to argue whether developed countries are exploiting concern for the environment to create non-tariff barriers. It is important to recognize that ISO 14000 will become a reality, regardless of whether one likes it or not. It is also important to appreciate the great significance of this new series of standards and to prepare for their imminent introduction.

How to Cope with ISO 14000

As has been discussed, preparations to meet this new environmental challenge will be necessary. But who should make the preparations and what preparations should be made? Obviously company managers, being responsible for the well-being and prosperity of their organizations, must do their homework properly. In addition, government officials and policy makers, especially those involved in trade and industry matters, must start to take action.

Government Officials and Policymakers

The first important action for policymakers to take is to keep a close watch on the development of the ISO 14000 standards and fully understand their implications. It will not be essential to know every detail of the new standards, but a sound knowledge of the broad requirements will be necessary. Once those requirements are understood, policymakers will need to assess the ways in which conscientious companies and industries in their particular country will be able to cope with the requirements, before formulating any intervention policies.

In order to make this assessment, policymakers must adopt a proactive role and consult industry representatives. They should ascertain whether industries and businesses are aware of ISO 14000 developments and understand the implications. If the subject is not adequately understood, it may be necessary to plan programs to raise awareness of ISO 14000 and to disseminate information to the appropriate sectors.

In Hong Kong, the Hong Kong Productivity Council took the initiative to plan an awareness program when it became apparent that the local business community had very little information or knowledge about the emerging ISO 14000 standards. The council chose to organize a chief executive officers' (CEO) luncheon about ISO

P2 A Noteworthy Approach to Pollution Control

A Report of the Training Course on Pollution Prevention during the 1995 Pacific Basin Conference on Hazardous Waste

7-12 May 1995, Edmonton, Canada

by

Dr. Shen-yann Chiu

Argonne National Laboratory
Argonne, Illinois, USA

Pollution prevention (commonly referred to as P2) received special emphasis at the Conference. Five technical sessions and a training course explored this popular topic. Representatives from 12 countries and territories, including Australia, Canada, China, Hong Kong, India, Indonesia, Philippines, Republic of Korea, Singapore, Taiwan, Thailand, and the United States, presented technical papers that described P2 programs. These papers showed that P2 is actively promoted in the Pacific Basin. Worth mentioning are the many successful P2 case studies in Asian countries.

The P2 method of multimedia pollution control and management reduces the generation and discharge of pollutants (gaseous, aqueous, and solid) at their source to avoid subsequent handling, treatment, and disposal. Industry is encouraged to use P2 rather than to treat and dispose of pollutants in the environment. This strategy for dealing with chemical pollutants is often referred to as the "environmental management option hierarchy".

Until now, P2 has not attracted much public attention, although its numerous advantages are noteworthy. For example, in some parts of Europe, interest in source reduction and low-waste technologies has been evolving over the last 20 years. Industrial

firms in Germany, Sweden, and the Netherlands have demonstrated the benefits of P2 approaches. In the United States, P2 received serious attention in the 1980s, following the promulgation of the Resource Conservation and Recovery Act and Superfund Act. The results have been positive. Well-known companies such as 3M, Dow Chemical, and DuPont have used P2 approaches successfully. Most US industrial firms have adopted P2 techniques and many have also established specific programs to implement P2 measures over the long term.

Encouraged by the results in developed nations, many developing countries in Asia have initiated activities to promote the P2 concept and encourage domestic industries to adopt P2 measures.

On the basis of papers presented in Alberta, programs implemented in Asian countries to promote P2 can be grouped into six categories. These are discussed below.

1. Awareness Promotion

Promoting awareness is the first and least expensive step to encourage industry to adopt P2 measures. Most countries included in this analysis have specific programs to educate industry and the general public about the P2 concept. Booklets, journal

and newspaper articles, posters, and videos promote this concept. These media define P2, explain its importance, and suggest additional sources of P2 information.

Some countries, such as India, Korea, the Philippines and Taiwan, promote awareness by presenting awards to organizations that have made outstanding achievements in P2.

2. Training and Education

The P2 concept is relatively new in many developing Asian countries. Training and education for industry workers and government officials are important. Education and training on P2 techniques for industry workers are generally implemented in classrooms. Managers and in-plant workers sometimes receive training at their work sites. In the Philippines, government workers receive P2 training and education while in the Republic of Korea and in Thailand, P2 courses are being introduced in higher education classes.

3. Information Transfer

General information on the nature and benefits of P2 technologies for specific industrial sectors is necessary for user communities. In particular, examples are needed that illustrate technical methods and economic benefits. This type of information, commonly found in P2 guidance manuals, fact sheets, and computer databases, is available to developing countries from international organizations such as the United Nations Environmental Programme (UNEP), and from developed countries such as the United States, Germany, and the Netherlands. In Taiwan, guidance manuals and fact sheets are tailored to its language and culture. In India, representatives of the industries in identified clusters



are forming waste minimization cycles for transferring information and identifying P2 opportunities.

Industrial waste exchange programs offer another opportunity to transfer information. Through newsletters, magazines, and electronic mail, these programs match waste generators with potential users or buyers of their waste. Industrial waste exchange programs in the Philippines and Taiwan work quite well and contribute to waste reduction and environmental protection.

Technology Development

Many Asian countries focused on developing detailed case studies that illustrate P2 technologies that are suitable for their domestic conditions and the way in which P2 projects have been successfully implemented. Most of these projects emphasize testing imported P2 technologies at domestic firms. Some cases require research and development of special equipment to meet specific needs. For example, developing equipment that fits into very tight space restrictions has been a major focus in Hong Kong. Development and demonstration studies generally also include information on costs and benefits of projects. Table 1 shows the industries that have conducted local case studies of P2.

5. Technical Assistance

Technical assistance is provided, especially to small- and medium-sized firms, to identify cost-effective P2 opportunities. The assistance generally involves on-site services (1) to collect data on the sources, amounts and composition of waste (or pollutant) and (2) to provide information on available P2 options. When P2 opportunities involve extensive projects, such as changing raw material or modifying unit processes, technical assistance also pro-

Table 1. Industrial Sectors in Selected Countries That Have Tested, Demonstrated, or Applied Pollution Prevention Technologies

China	Petrochemicals, Chemicals, Pharmaceutical, Textiles, Metal Finishing, Distilleries, Breweries, Cement, Tanneries, Food Processing
Hong Kong	Electroplating, Surface Finishing, Printed Circuit Boards, Textiles
India	Pulp and Paper, Textile Dyeing, Printing, Pesticide Formulation, Leather, Jute
Indonesia	Textiles, Electric Utility, Leather, Battery, Tapioca
Philippines	Sugar Milling, Pulp and Paper, Vegetable and Animal Oil Processing, Tanneries, Leather, Food and Beverages, Fish Canning, Industrial Chemicals, Pig and Poultry Farming, Meat Processing, Cement, Metals, Mining, Wood, Electroplating
Republic of Korea	Fine Chemicals, Textile Dyeing, Steel, Glass, Electroplating, Metal Processing, Food Processing, Printed Circuit Boards
Taiwan	Printed Circuit Boards, Pesticides, Leather, Paper, Textile Weaving and Dyeing, Electroplating, Brewery, Pharmaceutical, Chemicals, Seafood, Food Processing, Rubber/Plastics, Painting and Paint Manufacturing, Electronics, Pottery, Defense
Thailand	Pulp and Paper, Textiles, Metal Coating, Electroplating, Food Processing, Tanneries, Leather

vides a feasibility study for a company.

Hong Kong, India, Indonesia, the Philippines, and Taiwan are receiving on-site technical assistance services. In recent years, 93 companies in Taiwan and 80 in the Philippines have received assistance in identifying and implementing P2 options.

6. Financial Incentives

Financial incentive programs enable government agencies in Hong Kong, Indonesia, the Philippines, and Taiwan to provide free on-site technical assistance to industries that implement P2 programs. Indonesia, Taiwan and Republic of Korea provide low-interest loans for implementing

P2 and end-of-pipe treatment projects. Indonesia and Taiwan offer additional financial incentives (grants, investment tax credits, exemption from import duty, and accelerated depreciation of equipment). In the Philippines, a different incentive program is being implemented - all firms that volunteer to participate in the P2 promotion program are allowed a one-year moratorium for issuance of cease-and-desist orders by the environmental regulatory agency. This promotion directly encourages participating firms to adopt P2 measures.

Source: Newsletter of the Pacific Basin Consortium for Hazardous Waste Research and Management, Vol 6, No.2, November 1995.

What's Up ...

A Call for Action Against the Proposed Small Hydropower Plant in Langogan, Palawan

Barangay Langogan

Barangay Langogan, about 85 kilometers northeast of the city proper of Puerto Princesa, is home to one of the last remaining old-growth forest of the city. Forest lands in fact dominate the area. Much of the indigenous biodiversity of Palawan resides and flourish extravagantly in the various ecological niches of langogan's wilderness. Somewhere in the thick jungle, approximately midway between the Langogan coast of Palawan and its west coast is "Cleopatra's Needle" which is in the center of perhaps the most treasured portion of Puerto Princesa's wilderness, the part which Palawenos would desperately want to preserve. Likewise found on that west coast is the famous St. Paul Subterranean National Park.

About 12 kilometers upstream, from the mouth of the Langogan River, is Sitio Manggapin where a permanent settlement of the Batak tribe is situated. The Batak community is dependent upon the Langogan River for much of its sustenance, including about one third to one half of their protein food.

Proposed Small Hydropower Project

At a total cost of US\$ 20.7 million, P252.6 million of which will be shouldered by the Philippine Government, the National Power Corporation (NAPOCOR) proposes to build a hydroelectric power generating complex in the heart of Langogan's wilderness, some 22 kilometers upstream of Barangay Langogan.

About seven and a half (7½) hectares of virgin forest will have to be cleared

for the construction not only of the dam, but also the canals, pipelines and other structures which will take the impounded waters to the "powerhouse" several kilometers away from the pond which the dam will create. More forests will have to be violated, however, because a 69 KV transmission line will be set up to take the electricity generated to the city of Puerto Princesa where it will be used. Then, a 19 kilometer access road, a continuation of the feeder road from Sitio Macanring where the Batak settlement is located.

Alarming Effects

The set-up proposed by NAPOCOR is alarming. The consequences of cutting trees cannot be adequately measured by merely counting how many trees can be considered dispensable. In a single tree, hundreds of various organism can be found living in symbiotic relationship. Their symbiosis is beneficial for the forest environment to sustain living and non-living organisms.

The creation of the access road will not only mean cutting hectares of trees but also opening the forest and the life within it to possible human exploitation and intervention. In their EIS, NAPOCOR admitted its inadequacy in further studying the impact of the clearing to be done in connection with the construction of the hydropower project on the notable species found in the area. NAPOCOR has no detailed survey of the flora and fauna in the area, so they cannot account for rare, threatened and endangered species in the area.

The opening of the access road may also have a significant impact on the Batak community's health and well-

being. No Batak settlement has yet survived a construction of a road through its center and the influx of lowland migrants such a road inevitably brings. Such change is overwhelmingly devastating for the Batak indigenous community. Moreover, the proposed project site is included in the ancestral domain claim of the Batak tribal community which means that the NAPOCOR project will prejudice their efforts.

NAPOCOR itself worries about the siltation of their Langogan dam and even concedes that this will eventually be the biggest problem of the dam, albeit, as they say, a "hidden" one. The EIS predicted that the construction of the 19-km access road will result to soil erosion due to the cutting and filling of the hillsides and the valley slopes that may be traversed by the road, and that the excavation of the pipeline route, barrow and quarry areas can also contribute to the sediment load of the river.

NAPOCOR failed to consider the significant impact of the project on the marine life within the river and the coral reefs in Honda Bay. Up and down the coast from Langogan mouth are extensive reef system which are essential to the integrity of our marine environment. Heading down the east coast of Palawan from the mouth of Langogan, one will notice that the stones from the channel of Langogan are carried out to sea (in Honda Bay, particularly) by the river.

Urgency for Better Alternatives

There are better alternatives to the Langogan Hydropower project.

It may be worth looking into the possibility of tapping two or three small

...in the Philippines

...in Thailand

Breakthrough in Sewerage Sectors in Thailand --- Establishment of Wastewater Management Authority for BMR

by

Dr. Pakit Kiravanich, Director General
and

Dr. Yuwaree In-na, Senior Officer, Water Quality Management Division
Pollution Control Department (PCD),
Ministry of Science, Technology and Environment (MOSTE)

As in the case for practically all capital urban centers in developing countries, severe pollution of the riverine waterways in the Bangkok megalopolis (termed the Bangkok Metropolitan Region or BMR), has been steadily increasing. With the growth of population and industry certain to continue on and on in the foreseeable future, it has become apparent that a bold and innovative approach must be developed to prevent the problem from getting out of control. The BMR already includes some 8 million population and more than half of the total industry in the country, and degradation of the region's waterways has long gone beyond the "acceptable" level. There are serious water pollution problems elsewhere in the country, but the BMR problem has been No. 1. The Chao Phya river system is badly polluted and most of the associated *klongs* have become sanitation messes.

Detailed studies on how to control water pollution in BMR date back as early as 1969, but only recently, over the past several years, have actual investments made. The first of these is a group of three sewerage treatment plants now being implemented by the City of Bangkok (BMA), at the core of BMR, but these have been planned only to meet BMA needs. The actual problem is regional, covering BMA and five surrounding provinces as shown in Figure 1. Planning activities for BMA and five surrounding provinces carried out by the Government up to 1992 have been essentially "piecemeal" in concept. Hence, this planning does not realize the

large-scale benefits which can result from the economy of scale possible with a carefully planned regional system. The new Thai National Environmental Quality Act, promulgated in June 1992 (NEQA/92), established a new Pollution Control Department (PCD), within a new Ministry of Science, Technology and Environment (MOSTE). It also powerfully upgraded the National Environment Board (NEB, with the Prime Minister and Chairman), with MOSTE/PCD serving as NEB's "working arm" in the field of pollution control. It also established an Environment Fund with very sizeable resources for financing environmental improvement projects.

In recognition of the urgent need to tackle the BMR water pollution problem on a comprehensive cost effective basis, in March 1994 PCD completed (with World Bank assistance) a special report which proposed establishment of a new BMR regional agency, called the Waste Management Authority, with responsibility for developing effective water pollution management throughout the BMR. This will utilize a minimum of a relatively few central treatment plants for meeting all BMR needs, in lieu of the some 46 plants proposed by earlier studies.

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Fig. 1 Map of the Bangkok Megalopolis



Current and Forthcoming Events

GEMI Conference '96 **Agenda for a Changing Environment** 20-21 March 1996 Arlington, Virginia, USA

The Global Environmental Management Initiative's (GEMI) 1996 Conference will be held on 20-21 March 1996 at the Ritz-Carlton, Pentagon City in Arlington, Virginia. The theme for this year's conference is "Agenda for a Changing Environment".

GEMI '96 will highlight three major components of environmental management: the regulatory framework in which businesses operate; the emerging global marketplace, focusing on specific geographic regions; and environmental health and safety management practices. Sessions will focus on how these elements influence business functions, and how corporations and their stakeholders can interact in a flexible, positive manner to achieve mutually beneficial goals in the coming decades. Sessions of the conference will focus on specific regions of the world: the Pacific Rim, Mexico, and South Africa.

As in past years, the GEMI conference will also have two pre-conference workshops. This year's workshops will focus on Community Relations, and ISO 14000. The workshops will feature the perspectives and experiences of GEMI members and other industry representatives, as well as interactive learning opportunities.

For more information, contact: GEMI, 2000 L Street, NW, Suite 710, Washington, DC 20036. Tel: 202-296-7449; Fax: 202-296-7442.

EEAT Conference '96 12-13 May 1996 Bangkok, Thailand

The annual conference of the Environmental Engineers Association of Thailand (EEAT) will be held on 12-13 May 1996 at the Queen Sirikit National Convention Center in Bangkok, Thailand.

The objectives of the conference are to: disseminate results of relevant researches/studies to those who are involved in pollution control; provide a forum for exchanging knowledge and information among environmentalists and exhibitors that can be effectively put to practice; encourage additional research advancement among researchers; provide technology transfer to the entrepreneurs; and provide an avenue for exhibitors to exhibit and advise on modern technologies on water and wastewater equipment.

An international exhibition on environmental technology or ENTECH ASEAN '96 will also be held separately by exhibitors from 9-13 May 1996 at the same venue.

The conference and exhibition will be of interest to environmental specialists, scientists, engineers, technicians, industrial officers, consultants, business owners, local government officials, the academe and the general public. Attendance will be limited to 600.

For more details, please contact: Dr. Suchint Phanapavudhikul, Director, Water & Environmental Consultants Corp. Ltd. (WEC), 312/27 Nang Linchi Road, T. Chong Nonsi, A. Yannawa, Bangkok 10120, Thailand. Tel: (2) 285-4926; Fax: (2) 285-4890.

The Sixth ISEEQS International Conference in conjunction with the Eighth Regional IUAPPA Conference 30 June - 4 July 1996 Jerusalem, Israel

The Sixth International Conference of the Israel Society for Ecology and Environmental Quality Sciences (ISEEQS) with the theme "Preservation of Our World in the Wake of Change" will be held from 30 June to 4 July 1996 at the Jerusalem International Convention Center in Jerusalem, Israel. The Conference will be held in conjunction with the Eighth Regional Conference of the International Union of Air Pollution Prevention and Environmental Protection Associations (IUAPPA)

The conference will provide a multi-disciplinary framework for the exchange of professional knowledge, experience and research results in all facets of ecology and environmental protection, with a special emphasis on air pollution prevention and control.

Authors are invited to submit papers, for both oral and poster presentations, which will be published in the Conference proceedings. The Conference Advisory Committee has decided on a long abstract as the format for papers to be submitted for peer review and publication in the conference book. This will enable authors flexibility in expressing new ideas without compromising on scientific accuracy. The deadline for the receipt of the manuscripts is 29 February 1996.

For more information, contact the Conference Secretariat, OTRA Ltd., P.O. box 50432, Tel: 972-3-5177888; Fax: 972-3-5174433.

1996 Pacific Basin Conference on Hazardous Waste November 1996 Kuala Lumpur, Malaysia

The Seventh International Conference on Hazardous Waste in the Pacific Basin



will be held in November 1996 in Kuala Lumpur, Malaysia.

Papers are being solicited on the following topics: Technology Research and Development; Pollution Prevention; Integrated Assessments; Effects Research; and Management Issues.

Conference details and abstract submission forms will be available soon. To receive more details, contact: The Secretariat, Pacific Basin Consortium for Hazardous Waste Research and Management, c/o East-West Center, Program on Environment, 1777 East-West Road, Honolulu, HI 96848, USA. Tel: (808) 944-7224; Fax: (808) 944-7298; e-mail: nishiokj@ewc.bitnet.

World Conference on Green Productivity 4-6 December 1996 Manila, Philippines

The Asian Productivity Organization (APO) and the Development Academy of the Philippines (DAP) are organizing a World Conference on Green Productivity with the theme, "In Pursuit of New Strategies for Better Quality of Life". The conference will be held on 4-6 December 1996 at the Shangri-La's EDSA Plaza Hotel in Manila, Philippines.

The conference is expected to bring together top government officials, officials dealing with productivity promotion and environmental management, representatives from industry, agriculture, labor unions, academe, mass media and NGOs. It aims to: (i) facilitate sustainable socioeconomic development of the Asia-Pacific region through Green Productivity (GP) promotion; (ii) assess the current GP practices in the industrial, service and agriculture sectors as well as obstacles for their promotion and dissemination; (iii) examine the ways and means for creating GP awareness within society especially among small and medium enterprises (SMEs); (iv) clarify the roles of governments, industries, labor unions, academe, NGOs, mass media and international organizations for promoting GP; (v) encourage the development,

application and dissemination of cost-effective pollution prevention and control techniques and management practices for industries and communities; (vi) discuss the implications of forthcoming environmental management and control systems, such as ISO 14000, on GP; and (vii) enhance new business opportunities for providing environment-friendly goods and services.

For more information, please contact: Office for Environment, Asian Productivity Organization, 8-4-14, Akasaka, Minato-ku, Tokyo, 107 Japan. Tel: (81-3) 3408-7221; Fax: (81-3) 3408-7220; e-mail: apo@gol.com.

First WEF Specialty Conference on Beneficial Reuse of Water and Solids April 1997 Marbella, Malaga, Spain

The Water Environment Federation (WEF) is seeking abstracts of technical papers for presentation at its first European specialty conference, entitled "Beneficial Reuse of Water and Solids" to be held in April 1997 in Marbella, Spain.

This specialty conference is sponsored by the Asociacion para la Defensa de la Calidad de las Aguas (ADECAGUA), the WEF Member Association in Spain with support from the WEF Residuals and Biosolids International, and Water Reuse Committees. The object of the Confer-

ence will be the exchange of information from across the globe, although areas of emphasis will include the latest requirements of the European Union (EU) and other Mediterranean countries on beneficial reuse of water and water conservation, as well as beneficial use of wastewater sludges (also called solids or biosolids). The conference will provide information on water conservation and the health aspects of water reuse, as well as general information on water and solids reuse projects in order to encourage communities of all sizes to consider the benefits of such projects.

Technical sessions will be developed from papers in areas such as: direct and indirect potable reuse; health aspects of water reuse; water rights, water reuse in integrated resources planning; solids/biosolids processing and recycling; regulatory issues; status of regulations in EU member countries; new technologies; reuse for agricultural, recreational, urban, and industrial applications; and more.

The abstract submittal deadline is 8 March 1996. For a complete Call for Papers, contact WEF at 1 (800) 666-0206 (from the U.S. and Canada); 1(703) 684-2452 (elsewhere in the world); fax: 1(703) 684-2492; or email dttrouba@wef.org. For instant information, call WEF's Fax-On-Demand service at 1(800) 444-2933 or 1(908) 885-6417 and request item "16".

Other Forthcoming Events

15-17 February 1996, Thiruvananthapuram, India, **Indo-British Workshop on Biodiversity**. Contact: Tropical Botanic Garden and Research Institute, Palode, Thiruvananthapuram 695 562, India; Fax: 91 471 431 178.

18-29 March 1996, Malaysia, **Teaching Workshop in Environmental Economics**. Contact: Karl-Goran Maler, The Beijer Institute, Box 50005, S-104 05, Stockholm, Sweden; Tel: 46-8 673 9500; Fax: 46-8 15 2464; e-mail: beijer@beijer.kva.se.

7-9 April 1996, Kathmandu, Nepal, **Second International Seminar on Water and the Environment**. Contact: Mohan Singh Khadka, Ground Water Development

Project, Kathmandu, Nepal; Fax: 977-1 231 979.

25-28 June 1996, Hong Kong, **Asia-Pacific Conference on Coastal Environment**. Contact: Dr. Yuk-Shan Wong, c/o Research Center, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong; Fax: (852) 2358 1334.

July-October 1996, Adelaide, Australia, **International Graduate Certificate in Environmental Management**. Contact: Dr. Jan Carey, Mawson Graduate Centre for Environmental Studies, The University of Adelaide, South Australia 5005; Tel: 61-8 303 3084; Fax: 61-8 303 4383; e-mail: jcarey@arts.adelaide.edu.au.

Environment News

Printing Inks: Environmental Problems and Solutions

Companies can easily overlook the environmental effects of the printing inks used in their publications or packaging. But tougher legislation, combined with improved ink formulation and printing techniques, mean that solutions continue to be developed to reduce the environmental problems of solvent emissions, dust and waste ink disposal.

The main environmental problem areas are:

- the loss of solvents into the atmosphere during manufacture and application of liquid inks;
- dust production during manufacture;
- waste ink disposal, and
- disposal of general printed waste.

Different printing processes involve subtle differences in liquid ink composition, but the four principal components are: solvents, coloring matter (pigments), binders (resins) and various additives. In the other major sector of paste inks, volatile solvents are replaced by non-volatile mineral oil and distillates.

Solvents

Solvents used in liquid inks include low-boiling ester and ketone solvents like acetone, methyl ethyl ketone and ethyl acetate and -increasingly - water. In recent years there has been some reduction in solvent loss to atmosphere by the use of enclosed dispersion machinery and piped solvent dispensers.

At the printing stage, solvent recovery systems and the increased use of after burners on large heat-set presses have reduced volatile or-

ganic compounds passing into the atmosphere.

Coloring matter (pigments)

The UK industry's code of practice recommends the exclusion of toxic heavy metal pigments for packaging, and although lead pigments are still used in limited quantities - mostly in screen-printing - these two are being phased out.

Improved dust collection facilities are being used, but - more significantly - lower-dusting pigments have been developed. With the large, automated production facilities now in use, the dust problem has almost been eliminated.

Some companies have developed techniques for dispensing pigments into a concentrated wet paste form, which is used by ink manufacturers to produce their finished products.

Binders (resins) and additives

Binders are normally a low toxicological hazard and do not cause a problem during ink manufacture or use. Additives are used in small quantities to impart specific properties to particular formulations, and cause few problems if handled properly.

Waste disposal

Fortunately, most printing inks being of low hazard, disposal of waste ink and products is not a major issue.

Incineration of the raw materials used in inks and varnishes gives oxides of carbon and nitrogen, water, compounds of chloride and various inorganic metal oxides. In landfill disposal

of waste ink and varnishes, the long-term effects of water, air and light cause decomposition of the organic components of the products and lead eventually to complete degradation. The inorganic components remain unchanged and in general do not contain any toxic metals. Waterborne inks require chemical treatment to produce phase separation. After a settling period, the water can be decanted off and the ink sludge disposed of.

Printed paper products are de-inkable to varying degrees. Generally, sludge from de-inking goes to landfill. Various end uses for the recovered waste ink sludge are being studied, from production of colored house bricks to fertilizers.

Alternative inks

Ultraviolet curable inks and coatings are increasingly used in letterpress, offset and screen-printing applications. These are 100 per cent reactive inks, and like conventional paste inks, emit no solvents into the atmosphere. Demand for UV-curable inks is expected to grow as markets develop, since they are non-air polluting, biodegradable and of low toxicological hazard.

Major reductions of the solvent entering the atmosphere have been achieved by the development of waterborne inks for the flexographic printing of paper and film packaging and the printing of newspapers.

For more information on recent advances in printing, contact the following trade associations:

British Coatings Federation, Tel: ++44-1372 360660, Fax: ++ 44-1372 376069;

British Printing Industries Federation, Tel: ++44-171 2426904, Fax: ++44-171 405 7784.

Source: TPI News, December 1995.



The United Nations Environmental Programme's mandate is to inspire, inform and enable nations and people to better care for the environment and thereby improve their quality of life without compromising that of future generations and to undertake assessments of the environment, to provide policy responses and to catalyze action to that end.

To fulfill this mandate, UNEP has developed the following areas of expertise: environmental education; integrated and specialized management training; management of fresh water resources; integrated coastal area management; national biodiversity planning; biotechnological applications; impact assessment of climate change and adaptation strategies; management of dryland resources; desertification & land degradation monitoring and assessment; environmentally sound management of human settlements; toxic chemicals and hazardous waste management and chemical risk assessment; industrial pollution management; cleaner production; prevention of industrial accidents; sustainable tourism; state of the environment reporting; environmental and sustainable development indicators; geographical information system and remote sensing; international environmental law and national legislation and institutions for environmental management; economic instruments; environmental impact assessment; environmental and natural resource accounting; and integrated trade and environmental objectives for sustainable development.

With respect to human resource development, UNEP provides training in almost all the areas of expertise as well as specialized environmental management training.

A very high proportion of training activities are conducted with partners such as UNDP, UNESCO, ILO, UNIDO, UNITAR, FAO, WHO and other organizations. UNEP's education activities focus on the enhancement of the capacity of tertiary institutions to help meet the education and

training demands associated with efforts to achieve sustainable development.

UNEP also assists governments in strengthening their environmental institutions. Specific institutional support is provided in the areas of environmental law, data and information management, information exchange on relevant chemical and hazardous waste and cleaner production.

Other areas of capacity building include provision of policy advice and technical information, including on environmental quality, environmental policy tools, and environmental monitoring, assessment and management technologies. In the context of its capacity building efforts, UNEP furthermore provides general and specialized information packages for promotion of public awareness and mobilization of environmental actions.

In selected areas of expertise, UNEP organizes and conducts workshops and meetings facilitating consensus building. In a few selected areas such as information networking to mandated national and subregional bodies, UNEP provides equipment.

Most of UNEP's capacity building programs are undertaken in partnership with other UN organizations and institutions, and delivered through UNEP's Regional Offices, its Industry & Environment Office in Paris, its International Environmental Technology Centre in Japan, UNEP's Regional Seas Programme and Environmental Assessment Programme Offices.

UNEP is represented at the country level by the UNDP resident representative and support for capacity building at the country level is mostly coordinated with the UNDP Country Offices.

UNEP Elaborates Partnership in Capacity Building

Examples of UNEP's recent and ongoing activities in capacity building are:

Regional Environmental Training Networks

Regional Environmental Training Networks have been or are in the process of being established in Asia and Pacific, Latin American and Caribbean, West Asia, and Africa. They were created to establish an integrated network for cooperation among the institutions of the region concerned with high level environmental training activities with the purpose of Bringing about an exchange of information, experience and training among various countries in one area and thereby facilitate coherent approaches, methods and experiences for a permanent exchange of knowledge and provision of environmental training and education.

Network Building to Improve the Environmental Content in Engineering and Science Curricula

Recent initiatives by UNEP in partnership with WHO, UNIDO and ILO and other international bodies, have involved network building and regional workshops for university and other tertiary institutions, and in industry associations and corporations, to improve the environmental content in engineering and science curricula, with a particular emphasis on Agenda 21 issues. Extensive training material has been prepared to support the introduction of new curricula. Training materials includes manuals in various industry sectors and issues, and in environmental management systems.

Source: NETTAP News, Vol. 3 No. 3, December 1995.



*The Impact of the Imminent EMS ...
from page 3*

14000 to address local CEOs. A press briefing about ISO 14000 was organized immediately after the CEOs' luncheon to publicize the emergence of the new standards. The subject generated much interest and received strong media coverage.

Policymakers must possess a sound knowledge of the environmental performance of businesses and industries in their own country and the capability of these industries to follow ISO 14000 guidelines as a way of improving their environmental performance. This knowledge is important in planning future programs. If no direct information is available, a survey should be made to provide it. If the environmental performance of industries is quite satisfactory, then complying with ISO 14000 should not be very difficult. What will be probably lacking is formalized management systems and proper documentation to help industries to attain steady and continual environmental improvement.

In this favorable scenario it is probable that very little government intervention will be needed. However, if the environmental performance of some industries is known to be poor, then policymakers will need to pay more attention to these industries. Policymakers will face a formidable task in helping industries to improve their environmental performance without compromising their competitiveness. They must ask themselves: Why is this unsatisfactory situation happening? What is being done by the same type of industry elsewhere? Is it possible to alleviate the situation? If the answer is yes, what should be done? If the answer is

no, what will happen to the industry and what impact will it have on the economy? Policymakers must be sensitive to change and plan quickly enough to help industries to respond to change. Policymakers will also need to consider how to train up sufficient ISO 14000 experts to help companies obtain ISO certification and to set up certification bodies.

Corporate Managers

Corporate managers will be on the frontline, fighting for the ISO 14000 certification cause. They must be familiar with the requirements of the standards and fully appreciate all their implications. After corporate managers have clearly understood ISO 14000 requirements, they must make a decision: Do their organizations need ISO 14000? If the answer is affirmative, corporate managers must motivate and lead their employees into the ISO 14000 process, demonstrate their full commitment and act as mentors.

It is likely that SMEs might find it difficult to obtain ISO 14000 compliance. It may require improvement or rationalization of technology, and SMEs usually do not have sufficient resources to do this. SME managers may consider joining forces to collectively hire consultants or research institutions to help. Compliance may require the support of employees, but employees in SMEs are usually less skilled. SME managers must pay great attention to training and coaching their employees.

Managers should not forget that they can join forces to solve a difficult problem. Where necessary, they should make the government aware of the difficulties being encountered collectively, and seek assistance or support in working out the solution.

Conclusion

ISO 14000, an emerging international system of environmental management standards, is likely to gain wide recognition in the global business community. It does not serve any useful purpose here to debate whether the motive of the standards is to create non-tariff barriers or to protect the environment. It is far more productive to focus our efforts on preparing for the changes resulting from the standards. Corporate managers and policymakers in government ministries, NPOs, and trade associations must take heed of the new standards and prepare to respond to their possible impact.

ISO 14000 is a continual improvement process requiring commitment. Investment will be necessary during the ISO 14000 process, but it will pay off. Companies that are successful in implementing ISO 14000 will find that commitment and investment in this program will improve their environmental performance, and they will reap tangible benefits and achieve green productivity.

Source: Green Productivity, September 1995.

The ASEP Newsletter is published quarterly by the Asian Society for Environmental Protection.

Editor: Ma. Doreen B. Canillas
Asst. Editor/Typist: April S. Conui

The ASEP Newsletter publishes newsworthy articles on Environmental Protection, including research or project summaries, news reports, notices of current and upcoming events, and other interesting and relevant articles about the environment.

The Editor
ASEP Newsletter
Rm. B219, AIT Center
c/o Asian Inst. of Technology
GPO Box 2754, Bangkok 10501
Thailand, Tel.: (66-2) 524-5245
Fax: (66-2) 524-5236

Call for Action Against the Small... *from page 6*

rivers as mini-hydropower projects. This would in totality be less costly than the entire Langogan project.

Or else, has anybody thought of harnessing solar energy instead? The alternative to the Langogan Hydropower project might indeed be found in the sun and the sun shines everywhere in Puerto Princesa. For less than twenty (20) million dollars the Government should be able to set up much closer to the urban center a respectable solar power station which will adequately substitute for the Langogan Hydropower Project and be a model for the country. That should give added pride for the province. With the twenty million dollars the province may even have enough to invest on an environmentally friendly combination of these two alternatives to the Langogan Hydropower Project.

Action Needed

Environmental NGOs, international support groups and affected barangays are enjoined to write the following

agencies calling for the cancellation of the proposed Langogan Small Hydropower Project and the identification of other energy sources:

Palawan Council for Sustainable Development (PCSD)

Provincial Capitol
Puerto Princesa City, Palawan

Protected Areas Management Board

St. Paul Subterranean National Park
Manalo St., Puerto Princesa City
Palawan

Mayor Edward S. Hagedorn & Sanggunian Panglungsod

City of Puerto Princesa
Tiniguiban, Puerto Princesa City
Palawan

National Power Corporation

Cor. Quezon Avenue & Agham Road
P.O. Box 10183
Diliman, Quezon City

Secretary Victor Ramos

Department of Environment and
Natural Resources
Visayas Avenue, Quezon City

Source: Publication of the Environmental Legal Assistance Center-Protestant Lawyers' League of the Philippines (ELAC-PLLPP)

Breakthrough in Sewerage Sectors ... *from page 7*

The recommended comprehensive system, based on extensive regionalization experiences in the USA, would achieve very large-scale savings both in capital costs and in O&M and management costs. Total costs would be at least 30 percent lower than the piecemeal approach, resulting in literally huge savings, in the hundreds of millions of dollars. The March 1994 report included a draft Royal Decree, based on NEQA/92, which would legally establish WMA with all needed powers. In addition, PCD, had prepared Terms of Reference for preparing the needed comprehensive regional plan and this study which, with ADB assistance began in August 1995.

On 11 April 1995, the Cabinet approved the draft Royal Decree, which was reviewed and approved by the Judicial Council on 23 June 1995. The Royal Decree was signed by King Bhumibol Abulyadej on 20 July 1995 and published in the Royal Gazette on 14 August 1995. This means that the new WMA would be operative by 1995. The WMA's program design, including realistic cost recovery from both people and industry, training in WPC technology especially O&M, meaningful monitoring and enforcement, plus provisions for utilization of privatization.

One segment of the WMA regional program, namely a sub-regional project covering Samut Prakarn province, has already been prepared by PCD and is ready for RTG/ADB financing in the amount of some \$500 million. This sub-project is described in the December 1993 issue of the ASEP Newsletter. Project implementation is expected to get underway by December 1995, and this experience should produce many findings for guiding the overall BMR planning.



New Publications:

Waste Management: The Year in Review

For policy makers, lawyers, consultants, business executives and other professionals who are concerned with waste policy, *Waste Management: The Year in Review* is a vital one-step resource.

The report includes copies of all the important EU waste-policy documents, including the complete text of the long-awaited packaging waste directive.

Topics covered include: packaging; electrical & electronic waste; wastepapers; end-of-life vehicles; used tires; construction waste; batteries; metals; hazardous waste; landfill standards; and waste shipment regulations.

Price: US\$ 105

Contact: Cutter Information Corp., 37 Broadway, Suite 1, Arlington, MA 02174-5552, USA. Tel: (617) 641-5125; Fax: (617) 648-1950.

Recycling of Plastics

Recycling of Plastics, an International Techno-Economic Report by **Vladimir M. Wolpert**, contains the latest information on recycling of commodity and engineering plastics. Practices in Europe, U.S.A., Japan, China, and Australia are also featured.

Price: US\$ 490.-

Send orders to: Vladimir M. Wolpert, Hunters, Holly Hill, Colemans Hatch, East Sussex TN7 4EP, England. Tel/Fax (44-342) 824937.

Environment News from all over ...

TERRA is for:

Towards Ecological Recovery and Regional Alliance

A Project for Ecological Recovery (PER) was established in Thailand in 1986. This Project was founded as a result of the clear need for a base to support local communities within Thailand in protecting rivers, forests, land and livelihoods. Presently, PER is working in cooperation with upland, ethnic minority farming communities in northern Thailand and fishing communities on the major rivers of the North-east.

In 1991, a sister organization was established, which, together with PER, is registered as the Foundation for Ecological Recovery.

This second organization was named as *Towards Ecological Recovery and Regional Alliance* or *TERRA*. It is intended to focus on issues concerning the natural environment and local communities within the region. TERRA works to support the network of non-governmental organizations and people's organizations in Burma, Cambodia, Lao PDR, Thailand and Vietnam.

The organization encourages exchange and alliance-building, drawing on the experience with development and environment issues that PER has been involved with in Thailand.

TERRA's objectives are to:

- identify root causes of the ecological crisis and raise public awareness about its threat to the communities, cultures and societies in the region;
- support initiatives or existing regimes of local communities, systems of knowledge, and cultures which manage and protect the natural environment upon which local people depend;
- strengthen the capacity of local organizations to address ecological issues within their own political context;

- support research and analysis which can illustrate and strengthen use and management of the natural environment by local communities and cultures;
- build public participation and influence in policy and decision making processes affecting the natural environment and local people; and
- advance a strategic, holistic and participatory approach to environment and development issues, the ecological crisis, and strategies for recovery.

TERRA publishes a quarterly journal, the *Watershed* which aims to provide a people's forum on ecology focusing on Burma, Cambodia, Lao PDR, Thailand and Vietnam. The journal will contain news and commentaries regarding developments in the region, a forum for debate, the views of local people and features on technical and policy aspects.

For more information on the activities of TERRA and PER, contact: Mr. Witoon Permpongsachorn, TERRA, 409 Soi Rohitsook, Pracharaj-Bampen Road, Huay Khwang, Bangkok 10310, Thailand. Tel: (66-2) 691-0718-20; Fax: (66-2) 6910714; e-mail: terraper@comnet.ksc.net.th.

EnTA is for:

Environmental Technology Assessment Programme

UNEP's EnTA (Environmental Technology Assessment Programme) aims to encourage the use of environmental technology assessment as a policy tool to help support the development and application of environmentally sound technologies. Environmental technology assessment is a process by which the environmental aspects of a technology are explicitly analyzed and expressed.

Two main tasks for the EnTA program in its early phases are:

- to create awareness of the need and value of environmental technology assessment; and
- to build capacity in applying environmental technology assessment.

The main objectives are to stress the importance of environmental considerations in technology assessment, and to provide all those involved in making technology choices with appropriate tools and methodologies for carrying out environmental technology assessments. Stakeholders in the EnTA program include government agencies with responsibilities for environmental and industry programs, industries and trade associations, technology suppliers, scientific institutions and financing organizations.

Priority will be given to the needs of developing countries with respect to the environmental assessment of new or transferred technologies. EnTA will start with sharply focused and feasible activities. It will build on the experiences of others worldwide and cooperate with other organizations to achieve maximum possible leverage for the program.

In the first phase, the program will focus on the impacts of technologies on the physical environment and highlight the information needed to carry out comparisons between technologies. The program should identify and make available the best environmental information from existing data bases and information sources.

In 1995-1996, EnTA will focus on awareness raising and capacity building and will develop a series of case studies, information documents and other publications for these purposes. The documents will be developed as source material for training courses and workshops. Based on the recommendations of the EnTA Advisory Group, the program activities will be as follows:

Awareness Raising. The objective is to raise awareness of the need and



Environment News from all over ...

value of environmental technology assessment. This component will involve:

Case studies. Using existing demonstration projects and case studies in developing countries as sources of information, several case studies will be developed to: demonstrate the linkages between economic and environmental benefits; and illustrate both good and bad technology choices from an environmental point of view.

The EnTA Newsletter. The EnTA Newsletter will continue to be published and distributed to include news on the program's development and ways of linking to it.

Capacity Building. The objective is to build capacity for carrying out and applying environmental technology assessments.

Manual/primer. A manual or primer will be developed that outlines the concept, needs and benefits of environmental technology assessments and provides guidance on how to carry out assessments, including: information on environmental technology assessment methodologies and the data and information needed to apply these methodologies; and directories of technology assessment institutions and sources of data, information and training resources. The goal is to identify and make available the best environmental information from existing databases and sources.

Technology Transfer Environmental Guidelines. Guidelines will be developed for environmental assessment of technology transfer. The guidelines should be a vehicle for clarifying the environmental implications of different technology choices. The guidelines are not meant to be legal instruments but should serve to build consensus on the need and methodologies for conducting en-

vironmental assessment of technology transfer activities. The guidelines should be structured to address each of the stakeholders, outlining their responsibilities and indicating approaches to fulfilling them, as well as identifying the minimum set of technical data needed.

Eventually, and based on this experience, a broader scope EnTA program can be developed for future years. For more information, contact UNEP IE, Tour Mirabeau, 39-43, quai André-Citröen, 75739 Paris Cedex 15, France. Tel: (33-1) 4437 1450; Fax: (33-1) 4437 1474. E-mail: unepie@unep.fr.

Poster And Booklet for Raising Awareness on Desertification

Desertification is a very serious problem, affecting the livelihoods of millions of people who live in dryland areas, and especially in Africa. One of the best ways to combat desertification is to create as much awareness as possible about the causes of and potential solutions to the problem.

The Environment Liaison Centre International (ELCI) has published a full color, A1 size poster entitled "The Struggle Against Desertification", a print of a beautiful cartoon drawing by Kenyan artist Anthony Mwangi. Using humor, color and unique images, the poster depicts some of the major causes of desertification in Africa, such as monoculture and cash cropping, privatization of communal land, blocking pastoralists' access to rivers and riverine forests, misguided projects and programs, deforestation, and the introduction of energy efficient technologies.

A booklet with the same title is now being produced to explain in detail the images found in the poster. The booklet discusses in simple terms the underlying causes of desertification, outlines the history and goals of the Convention to Combat Desertification, and provides useful information about how to get involved with RIOD (Réseau International

des ONG sur la Désertification), the international network of NGOs working to help implement the Convention.

The poster and booklet are published in English and French, and are designed as tools for NGOs and community based organizations to raise awareness about the problem of desertification, especially in Africa.

The poster and booklet were made possible by the generous financial assistance of the British Overseas Development Administration.

If your NGO or CBO would like to use the poster and booklet in your awareness raising campaigns, ELCI will send you a package containing 25 copies of each (in English or French) free of charge. ELCI only requires you to send a request to them which provides the following information:

1. How is your organization engaged in combating desertification, or in improving the living conditions of people in dryland areas?
2. Who is the target group of your awareness raising activities?
3. How will you use the poster as part of your awareness raising campaign?

If possible, please send copies of your own awareness raising materials as well. Please send your requests and inquiries to Heinz Greijn, IBN Manager, ELCI, P.O. Box 72461 Nairobi, Kenya, fax: 254-2-562175; e-mail: elci@elci.gn.apc.org.

From the ASEP Secretariat

Due to the closure of CDG-SEAPO and the establishment of the new ASEP Office (please see ASEP News in p. 16), we decided to merge the September and December issues into this single issue.

Distribution of the regular issues will resume starting with the March 1996 issue.

ASEP News

CDG-SEAPO Ceases Operations in the Region; ASEP to Carry On SEAPO's Meaningful Activities

The Carl Duisberg Gesellschaft-South East Asia Program Office (CDG-SEAPO) has 'contentedly' closed down on 9 September 1995, exactly 11 years after its establishment in the premises of the Asian Institute of Technology (AIT) in Bangkok, Thailand.

CDG-SEAPO's main thrust was to initiate, launch and implement professional training projects and programs grouped under the eco²-development theme (ecologically-sound economic development). This was achieved by embarking on a number of complex training projects such as environmental management, small water resources development and small entrepreneurship development.

Within the timeframe of 11 years and a total project budget of DM 15.5 Mio plus another 10%, i.e. DM 1.5 Mio, for SEAPO operations, a small multinational, multicultural and multidisciplinary team of - on average - 15 international or local professionals and support staff under the able leadership of Dr. Guenter Tharun, reached out together with its numerous partner institutions to train altogether more than 67,000 participants of different background and educational level, primarily on adequate planning and decision-

making efforts, but, likewise, on relevant technical subjects. The bulk of which was trained in 3,829 courses of its small water resources development project alone and, to a much lesser extent, in 208 courses of the other three more complex training projects on industrial pollution control applications for SMI (11), the biotechnology transfer for SMI development (172) and small entrepreneurship development (25). Additionally, another 47 courses and workshops were held in various parts of the region on different subjects, ranging from technology transfer and dissemination over project management to hazardous waste management, green productivity, biodiversity conservation and coastal zone environmental planning, etc. which involved slightly more than 1,400 trainees.

The overall assessment of CDG-SEAPO amazingly showed apparent success and proven effectiveness within its lifespan of eleven fruitful years. Results of the projects ranged from development of printed materials consisting of detailed technology information, completion of special studies and research programs, generation and expansion of small and medium scale entrepreneurs, to a multitude of training courses conducted in other regions.


CDG-SEAPO has indeed been instrumental to the establishment of the Asian Society for Environmental Protection. ASEP was conceived by the participants of the *Workshop/Study Tour on "Asian-Bavarian Cooperation in Environmental Management,"* which was a follow-up activity for outstanding participants in CDG's environmental management seminars held at AIT during the period of 1978-1982. The Society, since then, has been growing steadily and has been gaining more and more recognition in the region through the publication of its ASEP Newsletter.

It is worthwhile mentioning that CDG-SEAPO's role in ASEP was indeed very valuable - from administrative tasks to the printing and distribution of the Newsletter.

ASEP, now on its own, will carry on a number of CDG-SEAPO's most meaningful functions. The future activities of ASEP will be discussed further in the ASEP General Assembly Meeting which will be held sometime in July 1996. Further details of this Assembly will soon be sent to all ASEP members.

INVITATION FOR MEMBERSHIP

We are happy to invite you to be a member of our Society and to join hands with us for better management of the Asian environment and its development.

Just fill out the application form below and send it to: 
or fax (66-2) 524-5236



MEMBERSHIP APPLICATION FORM

Annual membership fee:	US\$ 20 (individual)	US\$ 60 (institutional)
Life membership fee:	US\$ 200 (individual)	US\$ 600 (institutional)
plus Registration fee:	US\$ 4	

I am/We are interested to join as an individual/institutional member of ASEP

Name

Job Title

Agency/Organization

Mailing Address

The Secretary-General
ASEP
Rm. B219, AIT Center
Asian Institute of Technology
GPO Box 2754, Bangkok 10501
Thailand



Nationalty Japan

Name-Surname	Code	Organization	Room	in-out	Hotel
Country :Japan					
Mr. Akira Hirano	JP-18	Ant.Inst. of Agro-Environmental Science	S	19-23	S1
Mr. Akira Mukaida	JP-44	RESTEC	S	19-24	R
Ms. Chiwako Fujino	JP-02	Univ. of Tokyo	S	18-25	S1
Mr. Eiji Kodani	JP-25	Forestry & Forest Products Research Inst.	T	19-23	R
Mr. Fumiro Komagate	JP-		S	16-25	ST
Mr. Genya Saito	JP-19	Ant.Inst. of Agro-Environmental Science	S	19-23	S1
Dr. Haruo Sawada	JP-10	Forestry & Forest Products Research Inst.	S	19-23	R
Mr. Hideki Saito	JP-11	Forestry & Forest Products Research Inst.	T	19-23	R
Miss Hideko Kasahara	JP-42	RESTEC	S	19-22	R
Mr. Hideyo Yokotsuka	JP-35	Tokai Univ.	S	19-24	S2
Mr. Hiroshi Yamakawa	JP-45	Asia Air Survey	S	18-25	S1
Mr. Imakire Tetsuro	JP-		S	19-24	R
Mr. Junichi Suzuki	JP-06	Univ. of Tokyo	T	18-25	S1
Mr. Katsuhiko Hayasshi	JP-54	NADSA		-	NO
Dr. Kazue Fujiwara	JP-21	Yokohama Nat. Univ.	S	18-24	S1
Dr. Kazuhiro Sato	JP-23	Univ. of the Ryukyus	T	19-24	S1
Mr. Kazuo Oki	JP-12	Univ. of Tsukuba	S	19-25	ST

7 MAY 1996

Return-Path: <narumon@ait.ac.th>
Date: Tue, 7 May 1996 14:40:58 +0700 (GMT)
From: Narumon Wangnai <narumon@ait.ac.th>
X-Sender: narumon@rccsun
To: cenintaf@ccs.sut.ac.th

Dr. Ruben C. Umaly
Director
Center for International Affairs
Suranaree University of Technology

Dear Dr. Umaly,

Further to your discussion with Dr. Nicanor C. Austriaco on 30 April 1996, following are the names of resource persons on waste water treatment (recommended by Mrs. Suselo):

Dr. Ajit P. Annachhatre
B Tech, IIT Kanpur, Ph.D., IIT Bombay
Assoc. Prof. (Industrial bioprocesses; aerobic and anarobic waste treatment processes; simultaneous nitrification and dentitrification systems; in situ bioremediation of contaminated land sites; nutrient removal from wastewater)
Tel: 524-5644

Dr. Chettiyappan Visvanathan
B. Tech, IIT Madras, M.Eng, AIT; D. Eng, National Polytechnique, Toulouse
Assoc. Prof. (Water and wastewater treatment [physico-chemical]; solid/liquid separation; membrane technology)
Tel: 524-5640

With best regards.

Bee/CEC