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MUNICIPAL COASTAL ENVIRONMENTAL INITIATIVE

DEVELOPMENT ACTIVITY APPROVAL DOCUMENT (DAAD)

January 1998

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Annex

A Accomplishments of IEMP

DEVELOPMENT ACTIVITY APPROVAL DOCUMENT
MUNICIPAL COASTAL ENVIRONMENTAL INITIATIVE (MCEI)

The Municipal Coastal Environmental Initiative (MCEI) is an activity that will supplement the other USAID ongoing natural resources/environmental program initiatives under Strategic Objective No. 4. For program purposes, MCEI will closely complement the strategy of Coastal Resources Management Activity (CRM) by focusing efforts within the Philippine coastal zone to achieve common and mutually supporting objectives. The activity will begin on or about July 1, 1998 and is currently planned to end together with the SO4 Agreement on September 30, 2002. Since the MCEI objectives will require five years to be completed, a fifth year of the MCEI contract is planned for implementation, contingent on approval of a new environmental SO Agreement.

I. BACKGROUND AND PROBLEM STATEMENT

A. *Overview of the Fishery Sector*

The Philippines is an archipelagic country, consisting of 7,100 islands and islets. It has a total coastline of 17,460 sq km. Its marine territorial waters cover around 2.2 million sq km of Exclusive Economic Zone (EEZ), 88 percent of oceanic waters and 12 percent of coastal waters. The coastal zone of the country covers 11,000 sq km of land and 267,000 sq km of coastal waters. About 70 percent of the 1,525 municipalities and 80 percent of the provinces are situated along the coastline.

Seventy percent of the total population resides in coastal communities and dependent upon the coastal waters for their primary livelihood. According to an ADB study, it provides direct and indirect employment to about five percent of the national labor force: 65% in municipal fishing, 25% in aquaculture and 5% in commercial fishing, and 5% in related service activities.

Over a five year period (1991-1995), the fishery sector's contribution to the Gross Domestic Product (GDP) averaged about four percent (Bureau of Agricultural Statistics). Fish production for the same period grew at an annual rate of one percent, from 2.6 million metric tons (m.t.) in 1991 to 2.7 million m.t. in 1995. The one percent growth rate was accounted for by the commercial and aquaculture subsectors. The municipal catch declined from 1.1 to 0.9 m.t.

Despite its relatively small contribution to the economy, the fishery sector's role is important. It is a net foreign exchange earner, providing $497 million in 1995. It is one of the principal sources of food for Filipinos, providing 70 percent of the total animal protein intake and 30 percent of the total protein intake. The fishery is also the main source of livelihood for six million people living along the coastal areas With an annual population growth of 2.3 percent and one percent growth in fish production, measures have to be taken to meet the fish protein requirements of the population.

B. *The Problem*

The country cannot meet its fish requirement because its coastal resources are under stress. Overfishing, destructive fishing techniques, conversion of mangrove forests into fishponds and marine pollution are causing the degradation of the coastal resources.

Marine pollution is increasing rapidly because of inadequate environmental management of the industrial businesses located along the coastal areas and the shipping industry. The Philippines has150 ports and harbors servicing the shipping industry and 75% of industries, including 16 of the 17 Regional Growth Centers (RGCs), are located in the coastal areas. These coastal industries account for about 20 percent of the waste water pollution generated. In 1992, water pollution has caused an estimated loss of earnings in municipal fisheries of about P682 million and P124 million in commercial fisheries. Concern is growing over sea dumping of wastes (i.e., plastics, accidental and deliberate spills of oil, and chemical and toxic substances in coastal waters) which results in fishkill and ecological disasters.

More than 70% of coral reefs are seriously degraded. More than 50% of mangrove forests are destroyed. The effort required to catch the same quantity of fish is increasing. Couple the severely strained coastal resources with a rapidly increasing population needing food, and the result will be more than 50% less fish will be available per person by Year 2025.

C. *Rationale of the Activity*

1. **Relationship to USAID Strategy**

USAID's overall goal, outlined in the 1995 Country Program Strategy, is U.S.-Philippines partnership for democracy and development. Among its six strategic objectives is Strategic Objective No. 4 - enhanced management of natural resources. USAID seeks to foster and enhance the management of renewable natural resources by communities and businesses, and thereby prevent an environmental collapse. The Philippines faces a narrow window of opportunity within which to reverse the rapid decline in the country's ecosystems that provide the food and water essential for economic growth and physical survivial. To meet this challenge, the Philippines must manage its natural resource with strong community-based and enterprise driven approaches. The challenge requires a rapid response by a host of critical public and private users and institutions.

The expected result of MCEI, a minimum of 400 industries within selected sectors located in eight coastal areas, will be a 20% average reduction in current levels of industrial pollution. MCEI will complement Intermediate Result #1, which is 3,000 km of coastlines managed for sustainable harvests by the year 2002. In the areas where MCEI and CRM are co-located, MCEI targets will be integrated to directly support achievement of CRM's a

minimum level of resource management targets established to reach long-term sustainability. The integration of land based industrial pollution management into the CRM program means an application of a unified or "eco-systems approach" and will result in a higher probability of achieving a healthier environment, including biodiversity conservation in the Philippines coastal sector. The ultimate result is increased economic gains through cost saving to the companies and a higher economic returns to the communities through increased fisheries harvests.

In addition to reduction and prevention of industrial pollution, the natural resource management capability of national and local institutions will be enhanced. Targeted local communities and their local officials will systematically manage their coastal resources. Business and organizations (i.e., local chambers of commerce, Pollution Control Association of the Philippines, Inc., Technology Livelihood Resource Center, Small and Medium Enterprise Institute) will train on CP/EM to become the agents in promoting the strategy. Likewise, government agencies such as the Department of Trade and Industry (DTI), the Department of Environment and Natural Resources (DENR), and the Department of Transportation and Communication/Philippine Coast Guard will become effective promoters of CP/EM. At the end of the activity, it is anticipated that these business and trade organizations as well as DTI and PCG will integrate CP/EM in their promotion of business investments and enforcement of environmental regulations.

2. Relationship to GOP Objectives

The Philippine Agenda 21 is the country's framework to attain national progress through sustainable social development. It includes policy statements and implementation strategies on industrial pollution and coastal resources management. The local version of Philippine Agenda 21 is Local Agenda 21 which integrates sustainable development into local development plans. MCEI addresses the issues of pollution from industrial effluents, lack of coordination among government agencies, and coastal and marine ecosystems.

The DENR and the DTI are the lead agencies involved in environmental management and industrial investments. The MCEI design responds to DENR's expressed needs for the following assistance to :

** Promote pollution prevention plans for businesses through business associations
** Help new businesses incorporate CP/EM into their operations at the earliest possible stage
** Implement policy studies recommendations on market-based instruments, programmatic compliance to environmental impact statement requirements, and toxic and hazardous waste management.
** Localize the Philippine Agenda 21 with strong involvement of business
** Assist the local DENR staff in promoting pollution prevention and incorporating it into their activities.
** Coordinate donor assistance which is critical to fill funding and technical gaps and preventing activity overlaps.

The MCEI contractor will address DTI's need to promote environmentally sustainable growth in the Regional Growth Areas. DTI's Board of Investments has an environmental unit which reviews proposed new investments, incentives for purchase of pollution control or cleaner production technology, and collaboration with DENR in investment review. In June 1997, DTI and DENR signed a Memorandum of Agreement that allows BOI to process Environmental Compliance Certificates for proposed new investments with the oversight of DENR. BOI's involvement will reduce DENR's processing of all ECCs and fast-track important new investment projects in the Philippines.

3. Relationship to other USAID Projects, Strategic Objectives and Intermediate Results

IEMP. The MCEI contractor will promote the pollution reduction initiative of the Industrial Environmental Management Project (IEMP: see Annex A for details) at the local or municipal level. IEMP demonstrated that pollution reduction pays. The following example illustrates the kind of success achieved when a waste minimization program is implemented.

> *Polysaccharide Corporation is a carageenan processing facility located in Maasin, Zamboanga City. Carageenan is based on the seaweed Eucheuma, and it has a large demand among food manufacturers in industrialized countries. International market demand and the declining source of raw materials motivated Polysaccharide to seek innovative ways to improve process operations. The company volunteered for the IEMP-sponsored Pollution Management Appraisal (PMA) in August 1994. Polysaccharide's in-house PMA and IEMP consultants set goals which were actually exceeded. Their environmental policy includes PMA as a tool for sustained business growth, and this has resulted into annual savings of of $118,000 from 11% production increase. The company realized a 13% reduction in alkali consumption, 50% bonus reduction in wastewater neutralization cost, and 50% reduction in wastewater generation. These reductions translate into an annual savings of $242,857. By improving the working conditions, they also improved the health and safety of workers.*

An assessment of the PMA participating firms showed that 98 percent of the 143 industries have adopted clean or pollution reduction technologies. The $24 million capital investment in clean technology of these firms resulted in:

** 146% return on investment;
** 26% average pollution reduction; and
** 33 million cubic meters of water saved annually

CRM. Consistent with the Mission's strategy of an integrated approach of achieving SO4 objectives, industrial pollution has to be accounted for in planning for a sustainable management of coastal resources. The MCEI activities will primarily complement the Coastal Resources Management Activity (CRM). The proposed areas of MCEI will be selected regional growth centers and industrial areas in CRM expansion sites.

Other Projects, SOs and IRs. Similarly, the MCEI contractor will have close linkages with USAID's activities such as the U.S. Asia Environmental Partnership (USAEP), SO6's Governance for Local Democracy (GOLD), SO1's Growth and Equity in Mindanao (GEM), SO4's Environmental and Natural Resources Project (ENRAP), and the SO5's Energy Program. Collaboration with USAEP would be along its Clean Technology and Environmental Management action areas in the Philippines. The contractor will work with SO4 and SO6 teams to assist the local government units (LGU) in developing and financing their sustainable coastal resource management action plans. ENRAP's technical expertise will promote the market based instruments (MBI) to help the local governments impose pollution charges or waste disposal fees according to quantity and toxicity of industrial wastes. Collaboration with SO1 will ensure that clean production technology is used to GEM-assisted industries. Along with SO5's Energy Program, MCEI will jointly promote CP/EM and energy efficiency to utility companies.

II. KEY MCEI Customers

The MCEI assistance will target the private sector and the local/provincial/city government of impact areas as key customers. Private sector customers are broadly defined as the proprietors/managers of industries affecting coastal areas, community leaders, non-government organizations, managers of business organizations and trade associations in the impact areas. Community leaders include social workers, educators, and church leaders. For greater chances of attaining sustainability after the project, the MCEI contractor will tap established business organizations and trade associations (national and local) such as the Pollution Control Association of the Philippines (PCAPI), Management Association of the Philippines (MAP), Philippine Chamber of Commerce and Industry (PCCI) and commercial fishers' associations. The contractor will conduct periodic surveys among key customers in the impact areas to assess the effectiveness of overall MCEI technical assistance, ensuring that gender analysis is applied where appropriate.

III. MCEI Partners

The *Department of Trade and Industry (DTI)* will play a major role in promoting and implementing the CP/EM as a tool to improve business performance. DTI's primary concerns of better business performance and the protection of export markets fits the MCEI role quite well. Business adoption of CP/EM will facilitate ISO 14001 (International Standard Oganization series for environmental management) certification, and ultimately attain global competitiveness for Philippine exports. DTI will help the DENR to better understand the constraints and opportunities faced by the business community, and thereby develop and implement more appropriate and "business-friendly" rules and regulations.

The *Department of Environment and Natural Resources (DENR)* is concerned with business compliance to national environmental standards. It will be an MCEI partner by harmonizing its policies with DTI's, and strengthening local capacity in enforcement,

environmental management, and monitoring. Through MCEI, the DENR will help the DTI to better understand the important environmental concerns that must be taken into account with new business development, and to incorporate these concerns into their business promotion activities.

The *Philippine Coast Guard (PCG)* will focus on reducing marine pollution. MCEI will assist PCG to incorporate CP/EM in regulating the shipping industry, including its ports and harbors. One or several maritime training institutes will disseminate information about marine pollution to all the Philippine merchant seamen and Coast Guard personnel.

The *SO4 Team* will provide general guidance, strategic coordination, and performance monitoring of MCEI activities. The team will approve the contractor's Annual Work Plans. The present team is composed of representatives of DENR, DTI, Department of Interior and Local Government (DILG), NEDA, and USAID. The Philippine Coast Guard and selected private sector will be consulted as needed. The USAID SO4 Team (technical and support offices) will monitor and evaluate the contractor's performance and provide contract administration.

The *contractor* will work with *local partners* that have access to and credibility with local industry leaders and local government officials. The objective is for these local partners institutions to continue the CP/EM promotion and training programs that will be developed by MCEI. These institutions could be business organizations, women/people's groups, judiciary/lawyers' groups, banks, or the academe.

IV. International Partnerships and Exchanges

The primary purpose of international partnerships and exchanges is to promote spread and complementarity of efforts. On the local front, the MCEI contractor will coordinate with donors such as the United Nations (Environmental Programme or UNEP, Industrial Development Organization or UNIDO, UN Center for Environmentally Sound Technologies), Japan (Green Aid Plan and Asian Productivity Organization), Australia, and others. Coordination means sharing of resources for the common development goal. Possible areas of coordination are in training, technical assistance, research, data/information management, and information exchange. Donors will be encouraged to promote CP/EM into their programs especially in areas not covered in MCEI. Some of these organizations have CP/EM information or trainings for industry that the MCEI contractor can distribute or adapt. A memorandum of agreement among donors and government partners will define areas of complementarity and follow-up action plans.

The MCEI contractor will work closely with the contractor of the US-Asia Environmental Partnership (USAEP). USAEP's objective is to promote Clean Technology and Environmental Management in Asia. Collaboration with USAEP would be along its action areas and goals in the Philippines which include target industries, ISO 14001 certification, greening the supply chain (e.g Foreign Buyers Association of the Philippines) management, and voluntary business standards. Projected MCEI-USAEP linkage would be in the areas of international business and information exchanges (e.g. for the local chemical industry associations), trainings for the trainors (e.g. ISO 14001 certification for small and medium enterprises), workshops (e.g. Responsible Care Initiative, Financial Environmental Due Diligence Investigations), and facilitation of partnerships between Philippine and US businesses.

The MCEI contractor will collaborate with the US Department of State and its Regional Environmental Hub in Bangkok to strengthen USAID-State Department linkages. Such collaboration will also link MCEI with the US Pollution Prevention Roundtable (NPPR) and selected US Coastal States. NPPR members are implementors and advocates of CP/EM. NPPR can be a source of information on lessons learned in the implementation of CP/EM, technical experts who may be able to provide trainings and or special services to MCEI customers as well as sites where CP/EM is being implemented. The MCEI contractor will take advantage of CRM's initial efforts with several US coastal states (e.g . Florida, Hawaii, Massachusetts and Washington). It will form partnerships with such states through training and information about managing coastal industries. MCEI will link with the US Coast Guard to train the Philippine Coast Guard in effective reduction of maritime pollution.

V. Activity Description

The MCEI will be over a four year activity that will cut across the Mission's environmental initiatives, linking it with other donor agencies and international organizations engaged in similar activities. The overall objective of the activity is to promote the spread of

cleaner production/environmental management in coastal industries. The desired result at the end of the activity is:

> ***A minimum of 400 industries* within selected sectors located in 8 coastal areas will have a 20% average reduction in current levels of industrial pollution.***

(* the final minimum number will depend on the contractor's assessment of the impact areas. The present number is based on the list of top 10 highly polluting facilities in Regions 7 to 12 gathered from the National/Regional Industrial Prioritization Survey in 1994, the number of pollution management appraisals (PMA) conducted by IEMP in the region (68), and the perceived industrial development. IEMP completed 143 PMAs in different parts of the country .)

Subresults are:

* *at least 5 national business and trade organizations and DTI have integrated CP/EM in their promotion of business investments*
* *DENR local officers make regular inspections of industrial facilities and regularly publish results*
* *PCG promotes CP/EM to prevent maritime pollution*
* *at least 25% of participating provincial\city\local governments have incorporated CP/EM strategy into local business requirements and regulations*
* *at least a 25% reduction in production cost of businesses is attributed to CP/EM*
* *a minimum of 4 private sector(environmental management/consulting) companies have the capability of providing CP/EM technologies to industries*

The activity will provide technical assistance to the concerned national government agencies, local government units, NGOs, business organizations and trade associations to strengthen their capabilities to advocate for cleaner technology in industries located along the selected coastal areas. Technical assistance will be in the following areas:

A. *Local Level*

1. **Area Assessment and Analyses**

As stated earlier, MCEI will primarily complement the CRM activities. MCEI areas may be located in selected regional growth centers, industrial areas and key ports and harbors in CRM expansion areas in Cebu, Negros Oriental, Bohol, Davao del Sur, Sarangani, South Cotabato, Batangas, Palawan, and Tawi-Tawi. Regions 7 to 12 may be covered (Visayas and Mindanao islands), depending on the concentration of coastal industries. In order to determine where to focus MCEI assistance, area assessments will be done. Some criteria for prioritizing the local MCEI geographic areas are: regionalized rates of economic development, watersheds as development areas and relative to existing resource impacts, public use of natural resources and public perceptions of pollution problems affecting the resources, presence of toxic and hazardous wastes and effects on natural resources, and flows of waterways and groundwater drainage. Area assessment will be done in consultation with

CRM, community stakeholders, local officials and other concerned organizations. Analyses will depend primarily on existing data, to be supplemented by statistical and ocular surveys of sites.

The LGUs may already have a preferred development scenario, but the MCEI contractor will present alternative scenarios based on industry and environmental analyses related to projected growth rates. The scenarios for industrial development in the area will identify key industries and requirements for long-term sustainable development. The analyses and industrial development scenarios will provide the basis for a risk-based prioritization of MCEI activities including investment promotion for CP/EM in each area. Risk criteria will be developed as appropriate for each MCEI implemention area, and these may include factors such as industry growth rates, pollution avoidance potential, level of toxic and hazardous wastes produced in the area. A framework for quantifying relative risk will be developed to prioritize industrial sectors. The contractor will identify three levels of MCEI action:

1. Industrial sector that must be addressed within three years
2. Industrial sector that should be addressed within five years
3. Industrial sector that should be addressed if project is extended to five years or more).

2. Integrated Environmental Management Advocacy

The main objective of MCEI is to reduce industrial pollution in target areas. Various sectors need to work together to achieve the desired result. The Information/Education campaign of the MCEI will strengthen advocacy for integrated environmental management. This advocacy will focus on the local bureaucracy and judiciary, and NGOs which will push for compliance of the law.

To ensure full support from local government officials (i.e., budget allocation) and attain institutionalization, a technical staff person of the contractor will provide technical assistance on CP/EM to each of the covered provinces or chartered cities. Together with a local institution, the staff person will liaise between the local government, municipalities, NGOs and the business sector both at the regional and national levels. To ensure sustainability, the staff person will work with the local government and private sector to obtain funding for the position from industrial pollution charges.

There is a need to target people's groups and NGOs to be part of the advocacy. Women need to be informed of the health effects of industrial pollution in order for them to advocate for environmental management of the local leadership.

The desired result for the advocacy is developed local capacity for environmental management, and this will be measured by the following indicators:

Local environmentally-friendly enterprises. Potentially high risk enterprises have CP/EM designed into their operations and waste streams are converted into new products or

exchanged with other businesses. New community-based "green" enterprises are developed from recycling and reuse of industrial processing wastes, e.g. organic fertilizer from food processing wastes.

Private sector investments in regional analytical laboratories in key locations in the Philippines will indicate positive business outlook for LGU implementation of IEM. A study conducted by Woodward Clyde, Inc. in 1995 showed the viability of such investments. Promotion of CP/EM, Toxic and Hazardous Waste management, the EIA system and market-based instruments creates a demand for laboratory services that exceeds the supply of laboratories. The growth statistics of industrial growth centers support the establishment of regional environmental laboratories and a need for enhanced statistically based analytical procedures. The private sector will provide the investment for building and operating the laboratory while MCEI will provide advice in the design of the laboratory and limited procurement of equipment. Since DENR enforces environmental regulations, it will provide accreditation to the laboratory and guidance in the analyses. Depending on fund availability, the contractor can provide limited loans for procurement of laboratory equipment. The private investor can repay the loan to an appropriate organization for another laboratory investment. The contractor will develop a scheme of repayment in consultation with the DENR and DTI. Where possible, other sources of funds will be tapped, e.g. donations from successful businesses that implemented CP/EM.

Enhanced LGU capacity for IEM. Since they usually lack sampling and testing equipment, manpower, and expertise needed to manage regulatory enforcement, LGUs need other methods to persuade businesses to reduce pollution discharges. Market-based instruments (MBIs) are an ideal method. Under the Local Government Code, LGUs can institutionalize precautionary measures against marine pollution. MCEI assistance to LGUs will lead to the development of MBIs such as:

-- pollution charges or waste disposal fees based upon quantities and toxicity of waste. Revenues from pollution fees will be the source of funding for the LGU's program on CP/EM.
-- eco-labelling rating system with clear criteria and guidance for improving the ratings. LGUs will be encouraged to promote ISO 14001 certification or require certification from businesses generating serious pollution problems.

Strengthened local capacity for enforcement. DENR shall have increased efficiency in monitoring and enforcing the industries' compliance with the environmental standard requirements through a partnership with the LGUs, NGOs, and the Philippine Coast Guard. This partnership could be formalized by a memorandum of understanding, and regular joint inspections. Provincial and community environmental and natural resources officers (PENROs and CENROs) are advocating for CP/EM. A majority of citizens view DENR as a business friendly agency. DENR shall also have a working partnership with the local DTI. The judiciary and lawyers are aware of CP/EM that can help them in deciding cases of environmental pollution.

Integrated environmental management councils. Local leadership councils shall have local plans for management of industrial pollution and coastal resources. Where CRM has established local councils, CP/EM is included in the scope of concern of the councils.

3. Local Investment Packages for Environmental Infrastructure

Industries need toxic and hazardous waste treatment and/or disposal facilities. The shipping industry needs bilgewater, solid waste and sewage treatment. LGUs need communal waste treatment facility to improve their environmental management. With USAEP assistance, the MCEI contractor will identify priority environmental infrastructure for the area and develop investment packages for interested parties.

B. *National Level*

1. Institutionalization of CP/EM into DTI/DENR and National Organization Programs

This sub-activity's objective is to institutionalize CP/EM into the Department of Trade and Industry (DTI). Since DTI, to a large extent, has the oversight over businesses and new investments, it has an advantage in becoming an advocate for CP/EM strategy. A full-time policy expert will work closely with the DTI to facilitate the incorporation of CP/EM strategy in its programs. Assistance may be in the form of policy analysis and advocacy, training, information sourcing and international partnership promotion. To promote broader private sector involvement, wider options on technology, and formation of joint partnerships, the MCEI contractor will use comparative analysis to identify the most appropriate CP/EM technologies being advanced by the US, ASEAN, EU and other countries/regions. A major opportunity is to help the DTI and the Bureau of Product Standards ensure that Cleaner Production is strongly promoted in the ISO 14001 series. DTI will be DENR's partner in promoting CP/EM and facilitating the EIA process for new investments.

The contractor will also facilitate the operationalization of an existing Memorandum of Agreement between DENR and DTI. This is a first-time partnership between the two agencies. Assistance will be provided to integrate and align key DENR and DTI policies and programs that affect business investments and environmental management. Assistance will also be in the development of clear guidelines of the EIA process, industry prioritization relative to critical pollution impacts, and formulation of an effective incentive system for environmental investments. The partnership between DENR and DTI will effectively blend DENR's environmental regulatory functions with DTI's private sector mandate and help to resolve the conflicts arising between private sector investment demands and environmental impacts from industrial development.

DTI will facilitate the promotion of CP/EM to national business organizations (e.g. the Pollution Control Association of the Philippines) and financial institutions. To ensure successful CP/EM promotion and adoption, the MCEI contractor will link with USAEP's

work with the financial institutions (banks, insurance companies, etc.) that can provide local investment funds. CP/EM helps these institutions reduce the risk of their investment in a company. Local banks will be involved in the development of investment packages for local business and governments.

Indicators of success for this activity are listed in Table 1.

2. Reduction and Prevention of Maritime Pollution

The MCEI contractor will support a CP/EM expert within the Philippine Coast Guard. The expert will help select PCG districts and stations (out of 8 districts, 41 stations and 138 detachments) incorporate CP/EM into their regulation of maritime pollution. The expert will work closely with directors of ports and harbors to assist them in developing projects/programs aimed at reducing pollution in the ports and pollution generated by many ships sailing throughout the Philippines. In addition, the expert will facilitate the linkage of the PCG with the US Coast Guard for training purposes. Another potential activity is to support maritime pollution treaties and international conventions to which the Philippines has made agreements to, such as MARPOL. Such support will include policy analysis, training, or information dissemination to the PCG.

3. Support Services for Promotion

For an effective promotion of CP/EM, the MCEI contractor will provide support services in the form of multi media promotion, trainings, and research.

a. Focused media coverage will be done to build national awareness and enhance decision making of the advantages of CP/EM in a cost effective way. In coordination with CRMP media network, the MCEI contractor will work with the media to promote successful Philippine CP/EM projects, the importance of pollution prevention, health issues in relation to industrial pollution, and related CP/EM topics such as policies and ISO 14001. Limited number of promotion materials will be produced for distribution to appropriate audience, ensuring no overlaps with existing publications.

b. Training and services will be priced according to the ability to pay. Businesses will be accordingly charged for training and assistance. Technical assistance will be provided to have firm commitments in working with MCEI. The following are indicative trainings which are applicable at national and provincial/local levels:

Tailored CP/EM trainings. For business organizations, accountants, and environmental management consultants, focus will be on management issues such as full cost assessment of existing waste streams, financial evaluation of recommended improvements, employee empowerment, development of information acquisition systems, and long term strategic environmental planning. Where appropriate, comparative analysis of CP/EM technologies of different countries will be provided in the trainings. Examples of business

organizations are Management Association of the Philippines, Philippine Chamber of Commerce and Industry, and Philippine Business for Social Progress. The Philippine Institute of Chartered Public Accountants is interested in conducting training on CP/EM financial analysis for its 150,000 members.

For CP/EM awareness training, target groups will be community, government and civic leaders. For women to become effective advocates for clean environment, they should be given trainings on health issues related to industrial pollution and how waste minimization can help clean up environment. Judiciary and lawyers can also become effective advocates if they are given information or trainings on the importance of CP/EM

The contractor will gather baseline data from participating businesses and monitor their progress in order to ascertain the reduction in pollution. There will be collaboration with businesses that participated in IEMP's Pollution Management Appraisal (PMA) and which are located in MCEI implementation areas. The PMA participants will be requested to host on-site training for business assistance organizations and community\business leaders. Their progress will be monitored to serve as continuing models for PMA.

Train-the-Trainer for Business Assistance Agents and new busines gatekeepers. *Business assistance agents* are private sector organizations or NGOs that provide training, technical assistance, information and financing to business. Examples of these agents are the Pollution Control Association of the Philippines, Inc. (PCAPI), Technology Livelihood Resource Center (TLRC) and the Small Enterprises Research and Development Foundation (based at the University of the Philippines, Diliman campus). The objective of training select business assistance agents is to help them integrate CP/EM into their own activities and training, thereby lead to sustainability of CP/EM advocacy. Training will focus on management, information analysis, basic CP/EM opportunity assessment and information resources. Other business assistance organizations will be encouraged to form partnerships with the Philippine Business for the Environment (PBE) for information resources and training.

Once a group of local business assistance providers are trained on the basics of CP/EM, they will conduct demonstration CP/EM assessments paid for by the business establishment. The result will be action plans for the local businesses. Priority will be given to high risk businesses considered under the risk management analysis. The financial impacts of existing waste and pollution on the businesses will be documented and the savings from CP/EM implementation will be measured.

The *business gatekeepers* are government agencies that issue licenses or permits to new or existing businesses. New businesses to be established in coastal areas will know the advantages of CP/EM from multiple sources in the course of obtaining licenses and permits. Selected business assistance organizations will be assisted in developing short training programs and brochures for the licensing agents. The training programs will explain the benefits of CP/EM and help develop systems for distributing CP/EM information during the

course of processing new business applications or advising entrepreneurs. The training will focus on demonstrated CP/EM successes in the country, the financial and strategic advantages of designing CP/EM into new business, and CP/EM information sources.

Leadership Training. CRM conducted a Leadership Training program for its target communities. The MCEI contractor will assess the effectiveness of the training program and develop a joint training module with CRM to train community, business and government leaders in the concepts of CP/EM as they relate to sustainable development. The training will include visualizing future scenarios of zero waste production through cleaner production and waste exchange. The leadership training is envisioned to help the local government create local ordinances that promote CP/EM and to foster visible and committed leadership.

c. Environmental Research Agenda

The contractor will assist DENR, DTI (Bureau of Product Standards) and the Department of Science and Technology (DOST) through its Industrial Technology and Development Institute develop an applied environmental research agenda or framework, in collaboration with appropriate international organizations and program, i.e., USAEP, US Environmental Protection Agency (EPA), the Board of Science and Technology for International Development (BOSTID) of the US National Academy of Sciences and selected US universities. A successful research agenda shall address the following:

* how to manage data efficiently to generate information as needed and strengthen the decision making of LGUs and businesses
* how to disseminate information effectively on clean technologies
* how to adapt clean technologies from other countries in the local setting
* how to work with local universities in modelling programs on industrial pollution effects

VI. Implementation Plan

A. *Organizational Structure*

The implementation of the MCEI will be contracted to a U.S. private firm, competitively procured. Initially, the contract will be for 24 months and it can be expanded to 51 months depending on the availability of funds, approval of the extension of SO4, and the Contractor's performance. The contractor will be based in Manila with a separate office from DTI and DENR. CRM and MCEI site coordinators will be co-located, where appropriate, to enhance synergy and reduce costs. The MCEI will have three levels of action: national, local/provincial and international.

1. **National** -- At the national level, MCEI will focus on helping organizations understand CP/EM and facilitate its incorporation into their policies and programs. The target organizations are those with direct environmental management or business promotion and assistance responsibilities. Assistance will include training, policy and program

consultations. TA will be provided by a full-time CP/EM advisor who will work closely with DTI and short-term consultants. In addition, the DTI advisor will provide national level coordination with DENR, other organizations and donor agencies. MCEI will also provide assistance to a Coast Guard Officer at the Philippine Coast Guard to help select PCG stations increase their environmental management effectiveness, and coordinate related activities with the US Coast Guard.

The NRM Project Steering Committee will provide coordination, monitoring and management of the MCEI. Its members are representatives from DENR, DA-BFAR, NEDA, DILG, NGOs, private sector, and USAID. With its major role in MCEI, DTI will be the additional member of the committee.

2. **Local** -- The MCEI contractor will provide technical assistance to eight offices of the appropriate provincial/city/local government unit of the impact areas. Together with a host local institution, a technical staff person will coordinate activities between municipalities, provincial/regional public and private organizations and national organizations. The staff will be responsible for ensuring that by the middle of the second year of the project, the local government will fund their position to allow for transition before the project ends. The basis for this requirement is UNDP's experience in their "Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas." The Batangas City government was so committed to the program that they created an Environmental Unit and supported it with their own budget.

Most MCEI activities will be at the local level. The implementation areas will be the expansion areas of CRM. TA will be provided to the LGUs and other private organizations to establish sustainable CP/EM promotion and assistance program. It is anticipated that about 70% of the project's resources will be spent at the local level.

3. **International** -- The MCEI contractor will develop partnerships with international projects/programs for information exchange and complementation of resources.
It will coordinate with the donor programs and draw up an action plan that defines areas of complementarity.

The contractor will work closely with the US-Asia Environmental Partnership (USAEP) in the areas of international business and information exchanges, trainings, workshops, and facilitation of partnerships between Philippine and US businesses. It will also link with the US Pollution Prevention Roundtable (NPPR) and selected US Coastal States.

B. *Workplans*

Within 60 days after the arrival of the team, the Contractor will submit a final Life of Contract Milestone Plan. The workplan sets forth the major results and activities, within the statement of work, towards which the contractors will work. Annual Work Plans feed into the Milestone Plan and provide further detail of how the targets for the particular year will be

met. They include the activities to be undertaken each calendar year in order to reach the annual milestones and/or benchmarks; a discussion of how the activities contribute towards achieving MCEI Activity objectives; the completion date of the activities, cost estimates for major categories of activities, and critical assumptions or support needed from USAID and GOP agencies to accomplish the work.

C. *MCEI Funding*

The funding for this initiative will be come from the Natural Resources Management Program (NRMP) which is governed by the SO4 Agreement. USAEP will also provide some funding which will be defined in a memorandum of agreement.

VII. Feasibility and Risk Assessment

The likely benefit of MCEI is greater than the risk of not achieving the objectives set for this initiative for the following reasons:

1. MCEI will take full advantage of the resources developed by IEMP. Data from businesses that received pollution management appraisals under IEMP will help MCEI target high-risk industries for targeting and improve training programs. The IEMP experience in assisting businesses with the programmatic compliance of the Environmental Impact Statement System (EISPC) will be used to develop a rapid area assessment method that follows the outlines of EISPC but does not collect new primary data on natural resources. IEMP policy studies and recommendations will be followed when MCEI works with the LGUs to develop local programs and policies to promote CP/EM using MBI. Over 2,600 people have been trained by IEMP in industrial environmental management including pollution management appraisals (PMA) methods. These people will be tapped as resources for training and advocates of CP/EM.

2. MCEI is timely. The accession of the Philippines to the World Trade Organization has increasingly subjected domestic business industries to global competition. Any assistance that will decrease the cost of doing business and increase profits will be welcomed. The benefits derived from reducing and preventing pollution will convince firms to use the CP/EM strategy. IEMP had over 100 success stories from those firms that participated in IEMP's PMA. A number of international business organizations have proven and promoted the merits of the CP/EM strategy.

MCEI will also provide assistance in clarifying policies. Although the Local Government Code allows LGUs to collect fees and penalties from polluters, DENR still maintains control over these fees. There are also conflicting policies between investments and environmental regulations. MCEI's timely assistance will clarify these vital policies.

DTI is planning to have the MCEI contractor provide data for the proposed Land Use Code. The area assessment and risk management analyses will help DTI determine suitability

of industries in an area.

3. MCEI will be integrated into the CRM activities. This integration will facilitate implementation. Getting the desired results on time is highly likely. MCEI will build on the CRM experience of working in coastal communities, thus MCEI will not have to lay down the basic ground work. MCEI will contain funding for CRM activities such as training, area assessment, and IEC. The basic concept of integrated environmental management, for example, already would have been introduced by CRM. In addition, MCEI does not have to establish new environmental councils. It will work with councils that were established or assisted by CRM and other projects like GOLD.

4. The probability of a positive response to MCEI is high. The implementation of local Agenda 21 requires that economic development plans incorporate environmental concerns. The capability of local government to implement the Agenda 21 is limited because of the local staff's technical inadequacy. MCEI's intervention will fill the technical gap.

The risks associated with the MCEI design are the following:

1. LGUs may not give top priority to environmental concerns in passing ordinances because of lack of capable staff, and fear of political repercussions. Commitment of the current set of officials may not be shown by future officials.

2. Business establishments generally are not inclined to share information resulting from pollution management appraisals, or they may keep successes to themselves as trade secrets. Secrecy is predicatable because the PMAs result in substantial savings in production and material costs to the company. Business organizations may not initially participate without material support, i.e. computers, staff from the project.

3. Business may not be able to invest in new clean technologies in case of economic slow down. Also, it may be difficult to persuade business to pay for the cost of pollution management appraisals, considering that each appraisal can cost a minimum of $2,000.

4. GOP's counterpart funding may not be sufficient for supporting joint activities.

VIII. Monitoring and Evaluation

The performance indicators of the MCEI will be an assessment of the results stated in the Contractor's workplan. Assessment will be a combination of qualitative and quantitative indicators. The main performance indicator is:
A minimum of 400 industries within selected sectors located in 8 coastal areas will have a 20% average reduction in current levels of industrial pollution.

Illustrative performance indicators for three to four and a half years implementation of MCEI is listed in Table 1.

Table 1. Performance objectives and indicators for MCEI.

Objectives	Indicators (2001)	Cumulative Indicators (LOP: 2002)
A. Promote spread of CP/EM in LGUs, local agencies, and local businesses	1. Targetted LGUs passed ordinances/resolutions on pollution charges; ecolabelling system and local awards for business with best CP/EM practice; set up trust funds for the local CP/EM staff advocate 2. DTI and DENR are promoting ISO certification. 3. Integrated environmental management councils have the capacity to develop and approve IEM action plans	1. LGU environmental action plans which incorporates CP/EM concepts and in coordination with other government agencies being implemented. 2. 20% reduction of current levels of industrial pollution in target municipal waters 3. 420 kms (cumulative) of coastal lines with integrated environmental management plans in place
	4. 25% of CP/EM business participants incorporated CP/EM concepts in business plans	4. 20% reduction in production cost of businesses due to CP/EM
	5. Two new local waste exchange/recycling enterprises/target community.	5. Communities, NGOs, LGUs and businesses are jointly working on 50 environmental enterprises.
	6. Regional laboratory designed, constructed and functioning. 7. Administrative Order on CP/EM enforced by PCG; ongoing CP/EM projects of local ports and harbors.	6. Laboratory trust fund repayment scheme in place. 7. 20% reduction in pollution load of participating ports and harbors.

B. Promote CP/EM to national agencies/ organizations/ donors	1. DTI programs with CP/EM: CP in ISO 14000 2. DTI and DENR approved recommendations for integrated policies. 3. DTI approved recommendations for incentive system for environmental investments 4. Business organizations promoting CP/EM to its business members 5. Financial institutions (banks and insurance companies) developing investment packages with CP/EM requirements for local business and government 6. Philippine Coast Guard enforcing Administrative Orders on CP/EM and regularly inspecting port facilities and ships. 7. Environmental research agenda approved 8. Action plans for donor coordination approved	1. DTI actively promoting CP/EM to new investments (records of seminars, newsprints, brochures). 2. DTI and DENR AOs on implementation of integrated policies. 3. DTI/BOI incorporates incentive system for environmental investments. 4. 400 (incl. ISO certified business members, ports, ships) industries practicing CP/EM 5. Local banks and insurance companies promotes investment packages. 6. 20% reduction in pollution load of selected ports and harbors. 7. DENR has an effective data management, disseminating information on CP/EM and have tie-ups with universities on modelling programs. 8. Donor programs have a working complementation.

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Annex A

Accomplishments of IEMP

Pollution Reduction Initiative

This initiative differs from the traditional method of control and clean up of waste. Pollution must be avoided at source and before it is generated. The pollution management appraisal (PMA) seeks to identify industry-wide and firm-specific solutions to environmental management problems. PMAs are carried out voluntarily. DENR's DAO 17 gives a one-year moratorium to participating firms from enforcement of environmental regulatory standards. The order enabled DENR and industries to make voluntary agreements to participate in the PMA process.

At the start of the project, IEMP conducted an Environmental Risk Assessment or the National/Regional Industry Prioritization Survey. It investigated the compliance record of 3,328 industrial firms (about 33% of the entire country) on file with the DENR representing 156 industrial categories. The survey identified 867 facilities and 28 industrial categories that presented the greatest risk to the surrounding environment (Table 1). Industrial categories were prioritized per region according to their relative potential risk to public health, and it established priorities for IEMP.

IEMP introduced the concept of waste minimization to over 400 industrial firms and conducted 143 PMAs with agro-industrial firms since 1993. That PMAs are successful can be gleaned from the following statistics:

**98 percent of PMA firms have adopted pollution prevention technologies and methods
**$21 million capital investments in pollution prevention technology and equipment
**146% return on investment
**29% average reduction of pollution load
**33 million cu.m water saved annually

IEMP developed a reliable local data base on industries and has elicited significant interest from other countries. The data base allows users to search for any waste reduction technologies documented by IEMP.

IEMP was able to demonstrate that waste minimization pays, through increased profits and efficiency, reduced waste, fewer problems with DENR, and a better image with NGOs and local community. The success of the PMAs have been recognized by President Ramos, the Senate and the Congress.

The IEMP mid-term evaluation in September 1994 showed that companies volunteer for PMAs because of the threat of cease-desist Orders, not as a business opportunity. Technical personnel of participating firms are highly supportive of the PMA process because

it creates an increased awareness of pollution issues. On the other hand, LGUs and NGOs do not appear to fully appreciate the role of PMAs as a tool for pollution management to complement CDOs. PRC-EMI conducted special workshops targeted at LGUs and NGOs, but participation was minimal. To reach more industries, IEMP directly supported the Davao City Chamber of Commerce and Industry in 1996. As a result, the local chamber was able to establish an Industrial Environmental Management Council, and devised a plan to implement the program.

The evaluation also pointed out that the Philippines lacks analytical laboratory facilities required to adequately support an expanded pollution control program. This deficiency is particularly serious outside of Metro Manila.

The evaluation outlined the following recommendations for the institutionalization of pollution reduction:

- o encourage industries to develop and expand baseline data on the current levels of pollution.

- o develop sustainable inter-regional network of environmental laboratories. A study conducted by the Environmental Primemover of Asia, Inc.(EPAI)/Woodward Clyde, Inc. in 1995 showed the viability of investing in environmental laboratories. The demand for environmental analysis being created by various policies on RA 6969 (toxic and hazardous waste management), waste minimization, and PD No. 1586 (EIA System) far exceeds the supply of laboratories. The growth in industrial growth centers supports the establishment of regional environmental laboratories and an enhanced, statistically based analytical procedures (Table 2).

- o involve the regional offices in periodic evaluation of the performance of PMAs. DENR participated in on-site PMAs to the degree allowed by volunteer firms and provided resource persons for PMA workshops.

- o design and carry out a special project based on environmental risk assessment and PMAs in a coastal zone with high potential for industrial growth. IEMP conducted an ecoprofile for the PHIVIDEC industrial estate, baseline water quality studies for Sarangani Bay and Olango Island in Cebu, and pollution source survey in CRM municipalities around Bais Bay.

Table 1. Regional distribution of facilities by NRIPS score. (Higher relative score means greater risk to public health).

Subsectors	Ave. Score	Exist-ing	Scored	No. of facilities					
				CAR,R1 -R3	NCR R4	R5-9	R10	R11	R 12
Gold ore mining	62.6	185	21	6	0	13	2	164	0
Coal mining	62.3	7	6	0	0	6	0	1	0
Steam heat and power generation	60.8	3	3	0	1	1	0	0	1
Sugar milling and refining	59.1	40	39	6	4	27	2	1	0
Mfg. pulp, paper and paperboard	55.9	34	27	6	20	2	2	3	1
Mfg. dessiccated coconut	53.8	13	12	0	8	0	2	3	0
Malt liquors and malt	52.9	7	6	1	3	2	1	0	0
Nickel ore mining	52.6	6	4	0	1	3	2	0	0
Copper ore mining	51.3	8	4	6	1	1	0	0	0
Mfg. carpets and rugs	51.3	7	2	0	7	0	0	0	0
Non-ferrous smelting and refining (except precious metals)	51.0	10	11	3	5	2	0	0	0
Distilling,rectifying and blending spirits	50.1	19	17	7	7	5	0	0	0
Mfg. cement	50.1	18	16	5	5	2	3	1	2

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Laundries,cleaning and dyeing	50.0	31	31	1	28	2	0	0	0
Mfg. Vegetables, animal oils and fats	48.5	48	35	1	21	14	8	0	4
Gold and other precious metal refining	46.9	39	39	2	2	3	3	29	0
Tanneries and leather finishing	45.8	31	31	30	1	0	0	0	0
Spinning and finishing textiles	45.4	59	51	8	49	1	0	1	0
Soft drink and carbonated water mfg.	45.0	45	40	13	9	16	3	4	0
Mfg. elec. wires and wiring devices	44.9	42	33	1	39	2	0	0	0
Steel works and rolling mills	44.5	68	66	8	42	11	5	1	1
Prodn. crude coconut oil, cake and meal	43.8	40	31	1	18	8	6	7	0
Hog raising	43.3	1,110	235	747	159	138	10	51	5
Seafood canning, preserving, and processing	43.0	91	66	4	21	54	4	8	0
Basic ind. chem. (except fertilizers)	42.7	73	41	5	49	8	4	7	0
Total		2,034	867	861	500	321	57	281	14

Table 2. Demand-supply scenario for environmental analysis/monitoring in two regions.

Monitoring targets	DENR Target analy-sis/yr	DAO require-ments	Total no. of firms	Deficit	
				No.	Percent
Water quality monitoring					
Region X	318	7,260	355	6,942	95.6
Region XI	60	24,892	872	24,832	99.8
Air quality monitoring					
Region X	3	3,972	331	3,969	99.9
Region XI	15	9,600	800	9,585	99.8

Policy Studies

IEMP assisted DENR in policy studies directed to minimize conflicts between the industrial development and the need for environmental protection. The studies include:

-- **Funding Environmental Investments.** This study addressed the problem of limited investment in pollution prevention; determined the type and amounts of environmental investments needed. Recommendations included industry specific incentives/subsidies, technical assistance e.g. PMAs), reforms in financial institutions, and development of a clean fund.

-- **Standards and Guidelines for Republic Act 6969 (Toxic Substances, Hazardous Wastes and Nuclear Wastes Control Act).** IEMP assisted in the development of Proposed Standards for Characterization and Registration of Hazardous Wastes. An action plan for the management of toxic chemical substances and hazardous wastes presented a series of requirements, procedures and standards for the implementation of the Department Administrative Order (DAO) No. 29. The plan provided DENR with standards for classifying hazardous wastes and helped the Environmental Management Bureau (EMB) develop the guidelines to gather information on hazardous waste management. The Philippines Inventory for Chemicals and Chemical Substances was completed, providing DENR a database for monitoring of over 22,000 chemicals. Only the Philippines and Japan have a comprehensive chemical list in Asia.

The inventory prioritized 28 hazardous chemicals which are highly toxic and carcinogenic. A detailed compliance monitoring program for DENR inspectors and program managers was developed. Training materials were developed and used in

workshops and seminars attended by 800 participants from Manila, Cebu, Batangas, and Cagayan de Oro. The requirements and standards were tested in Batangas City which demonstrated the applicability of waste characterization and quantification, generators' requirements, and the manifest system. Meeting the requirements for on-site facilities may take longer. The study concluded that pertinent standards should be tested over time as facilities are developed in the future.

Among the recommendations in the RA 6969's Action Plan are: organizational expansion of EMB, formation of a foundation to use the funds collected through fees and fines for the purpose of RA 6969 implementation, close coordination between DENR and other government agencies (such as the Bureau of Customs, Food and Drug Administration, and Fertilizer and Pesticide Authority), training and technical assistance, and information dissemination.

-- **Review of Pollution Management Regulatory Programs**. This study identified gaps in air, water and waste programs and weaknesses in jurisdictional arrangements. IEMP analyzed financial responsibility options, fines and penalties and development of fund options. DENR is drafting an Administrative Order on Permits and Sanctions to rationalize existing permitting, fines and penalties, and the system of issuance of cease-and-desist orders. The Congressional House Bill no. 4, "An Act Revising the Philippine Environmental Code," integrates key recommendations of the study.

-- **Strengthening of the Environmental Impact Statement (EIS) System**. Issuance of the Environmental Compliance Certificate (ECC) is a continuing source of conflict between the DENR, community and business. The Marcopper mining accident which led to the pollution of the Boac River, is blamed on the inadequacy of safeguards in the ECC. Potential investors are discouraged of the slow issuance of ECC and high costs involved in getting an ECC. Businesses also complain that DENR gives confusing interpretation of guidelines. A general conclusion is that ECC management is poor and need further improvement.

The policy study resulted in the issuance of DAO 11 in April 1994, which deals with the programmatic compliance procedures of the Environmental Impact Statement (EISPC) System. The DAO provides the necessary policy reform in the planning, siting, and environmental management of industrial establishments in the country. The following changes in the current EIS result in new institutional requirements and arrangements:
(1) DENR prepares ecological profile ("ecoprofile") of the RGCs officially designated by the DTI.
(2) Development constraints or limits are incorporated into Comprehensive Land Use Plan of LGUs concerned.
(3) The cumulative impacts of existing and planned development on the natural systems and social-economic conditions in a given geographic area are assessed prior to issuance of an ECC.

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(4) DENR streamlines the issuance of ECCs for an RGC or other type of industrial development area (IDA), including components or phases of a project. Consistency is determined based on review of "Supplemental Environmental Assessments" required of all new industries and/or expansions of existing industries.
(5)Acceptance of a project is enhanced through public and local government involvement in scoping, ecoprofiling, public hearings, and multi-sectoral monitoring.
(6) Formal planning, policy making and coordinating bodies are instituted at the national, regional and local level.
(7) Environmental management responsibilities are shifted from DENR to the Industrial Development Administrator of a contiguous area (e.g. industrial estate). This arrangement leads to faster decion-making.
(8) Ecoprofile and Programmatic EIS are used to determine total allowable loading of regulated pollutants and allocation among individual sources (existing, planned, and prospective). Discharge allocations will be incorporated into annual discharge permits enforceable under PD 984 and other statutory authorities.

The goals of DAO 11 are to promote environmentally sound and socially acceptable industrial development and to provide incentive in locating industries within government-sponsored Regional Growth Centers (RGCs). Guidelines were developed covering administrative and technical procedures, EIS preparation and review and environmental compliance certificate (ECC) issuance and post-ECC procedures. The draft guidelines on social acceptability under the EIS System were subjected to a nationwide dialogue. Among the recommendations of the study are: full scale testing of implementation guidelines, capacity building for DENR and RGCs, ecoprofiling of eco-zones as a requirement for issuance of environmental compliance certificate, and providing stronger legal basis and political support for EISPC.

-- **Decentralizing Environmental Resources and Enforcement**. This study reviewed the basis for decentralizing and devolving environmental management functions, and the legal/regulatory framework for environmental management protection by DENR and LGUs. The study recommended ways to clarify policies such as resolving conflicting statutes, and political and administrative authorities. It pointed out the need for strengthening program administration (through DENR management diagnostic and training programs), organizational development of LGUs, and facilitating multisectoral participation for strengthening environmental protection and management through decentralization/devolution. While no specific DENR initiative to implement the policy recommendation has taken place, the policy study has assisted the completed Local Development Assistance Project (LDAP) and the ongoing Governance on Local Democracy (GOLD) by providing an institutional framework on devolved environmental functions.

-- **Market-based Instruments to Promote Pollution Reduction in the Philippines.** This study analyzed the suitability and ranked six market-based instruments (financial incentives, creating market for waste, user fees, pollution charge, risk and liability

system, and deposit refund system) on 10 priority industries (pig farming, electroplating, coconut oil, fish canning, semi-conductors, sugar milling, tannery, textiles, pulp and paper, and cement).

IEMP implemented a pollution charge system for the Laguna Lake Development Authority. The system is using pollution load factors (PLF) based on industry production capacity and treatment methods. The factors will be used in validating permit applications and determining the pollution charges. The study resulted in an industrial effluent guide based on compiled load factors, applicable end-of-pipe control technologies and expected pollution reduction for each industry subsector. The pollution charge system is considered a prototype for a national system to be implemented by DENR.

-- **Importation of Recyclable Materials**: the study was the basis for the issuance of DAO 28 that governs the importation of recyclable materials. Guidelines were formulated on the importation, processing, and disposal of recyclable materials containing hazardous substances which are recycled in the Philippines. DENR requested for this study in response to the blockage in February 1994 by Greenpeace of shipments for recycling in the Philippines. The President of the Philippines approved the guidelines. The study also analyzed theregulatory programs of the recycling industry in the country and the development of national recycling program.

Contribution of IEMP Policy Studies:

The IEMP midterm evaluation showed that the policy studies contributed directly to the industrial environment management framework and strategy of the country:

(1) Strengthening and streamlining the EIS system
(2) Moving toward market-based instruments mode to complement command and control interventions
(3) Increasing reliance on LGUs and NGOs in environmental monitoring and management.

Policy-oriented recommendations of the IEMP evaluation include the following:

- o strengthen public advocacy and distribution on the policy, institutional and administrative reforms. A public awareness strategy was prepared for DENR policy implementation.
- o build up DENR's in-house policy analysis capability on brown issues
- o strengthen linkages between ENRAP and IEMP policy studies to bring out the macroeconomics perspective to the country's emerging industrial environmental management framework and strategy. ENRAP conducted Sectoral Studies on Pollution, using IEMP data.
- o coordinate with other donor-funded projects (especially MEIP and UNDP country

program) which have projects in MBIs to integrate their insights into the public advocacy and policy support of the IEMP

- o factor into PMAs the social benefits of pollution reduction through pollution prevention and the private benefit to the firms of improved community relations. The PMAs need to estimate the upstream, downstream and coastal interactions within a given ecosystem. It should also examine the interlinkages in coastal industrial zones.

DENR and PRC-EMI addressed the issues on linkage with ENRAP and other donor-funded projects. DENR has to address other recommendations and initiate institutional changes.

Capability Building

IEMP trained 2,601 participants on pollution management appraisal, environmental risk/impact assessment, compliance monitoring/audit, and data collection, sampling and sample analyses (Table 3). The main participants of the workshops were the industry (36%) and DENR (31%), followed by the LGUs (18%), the academe (5%), NGOs (3%) and others (7%).

Table 3. Number of IEMP-trained professionals.

Trainings	No. of persons trained	Regions			
		CAR,1-3	NCR,4	5-9	10-12
Pollution management appraisal workshop	923	91	259	285	288
Environmental impact assessment workshop	771	162	164	130	315
Environmental risk assessment/NRIPS workshop	140	28	64	28	20
Compliance monitoring workshop	230	54	71	69	36
Compliance audit workshop	225	33	74	83	35
Data collection, sampling and sample analysis workshop	200	44	73	50	33
Train the trainers workshop	112	9	59	32	12
Total	2,601	421	764	677	739

The IEMP midterm evaluation reported that most of the project's training was on target, particularly in the public sector. Training for the regional DENR staff was relevant and routinely applied on the job except when equipment shortages prevented application to the training. Participants of the Data Collection Sampling and Sample Analysis Workshop reported the futility of training on collection and monitoring, since equipment and laboratory facilities are not available in the country.

To expand the base of trainers and PMA consultants, subcontractors participated as observers in some PMA surveys. The training for trainers improved training and presentation skills. Selected DENR regional staff were trained on PMA process.

The IEMP evaluation also pointed out the lack of an effective approach to generate adequate NGO involvement. From 1993 to 1995, 82 participants representing 57 NGOs

participated in IEMP training. About 15% of workshop invitations have been allocated for NGO participants, but only 5% or less actually showed up. NGO involvement is important for IEMP to make the NGOs aware of the need to balance economic growth and environment. They need help on how to work with industry to become better advocates for sustainable development.

Sustainability

The IEMP mid-term evaluation reported that IEMP, as designed, contains no explicit strategy or mechanisms for continuing project-initiated activities beyond the life of the existing project. Further, no significant increase in the GOP's capacity was observed to sustain project activities with their own resources. As a result, the options of project sustainability are quite limited. Among the recommendations for sustainability are allowing private sector to provide its own training.

IEMP implementation produced changes in DENR and the environment sector that are encouraging indicators of sustainability. For example:

- DENR has started a systematic dialogue with the regulated communities. It recognizes companies that contribute to the protection and preservation of the country's environmental resources during Environment Month.
- DENR is promoting an integrated approach to brown, blue and green sectors.
- DENR has considered promoting and monitoring waste minimization programs as a Key Result Area (KRA). Regional offices will include monitoring of PMA volunteer firms in their regular activities and will promote waste minimization through their information programs.
- The proposed Environmental Code will offer market-based incentives for industries adopting waste minimization programs. The Code will also change environmental quality standards basis to load-based instead of concentration-based.

LIST OF ACRONYMS

CDO	-	Cease and Desist Order
CRM	-	Coastal Resources Management Activity
DAO	-	Department Administrative Order
DENR	-	Department of Environment and Natural Resources
DTI	-	Department of Trade and Industry
ECC	-	Environmental Compliance Certificate
EIS	-	Environmental Impact System
EISPC	-	Environmental Impact Statement Programmatic Compliance
EMB	-	Environmental Management Bureau
ENRAP	-	Environmental and Natural Resources Accounting Project
ENRO	-	Environment and Natural Resources Officer
GOP	-	Government of the Philippines
IEM	-	Industrial environment management
IEMP	-	Industrial Environment Management Project
LGU	-	Local government unit
MBI	-	Market-based instrument
NGO	-	non-government organization
NRMP	-	Natural Resources Management Program
PBE	-	Philippine Business for Environment
PCAPI	-	Pollution Control Association of the Philippines, Inc.
PCG	-	Philippine Coast Guard
PMA	-	Pollution Management Appraisal
PRC-EMI	-	PRC - Environmental Management, Inc.
RA 6969	-	Republic Act 6969 (Toxic Substances, Hazardous Wastes and Nuclear Wastes Control Act)
RGC	-	Regional growth center
UNDP	-	United Nations Development Programme
UNIDO	-	United Nations Industrial Development Organization
UNEP	-	United Nations Environmental Programme
USAEP	-	United States Asian Environmental Partnership
USAID	-	United States Agency for International Development
USCG	-	United States Coast Guard