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SUSTAINABLE FINANCING MECHANISMS AND POLICY INSTRUMENTS FOR THE PREVENTION AND MANAGEMENT OF MARINE POLLUTION IN THE PHILIPPINES

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List of Abbreviations

AC	Authority to Construct
ADB	Asian Development Bank
ADRs	American Depository Receipts
AFI	Ayala Foundation, Inc.
AFTA	Asean Free Trade Association
APD	Anti-Pollution Device
ARMM	Autonomous Region of Muslim Mindanao
BACT	Best Available Control Technology
BBDP	Batangas Bay Demonstration Project
BCs	Barangay Councils
BCD	Biodiversity Conservation Network
BIR	Bureau of Internal Revenue
BLT	Build-Lease-Transfer
BOD	Biological Oxygen Demand
BOI	Board of Investments
BOT	Build-Operate-Transfer
BSFA	Barangay Sanitation Facilities Association
BT	Build-Transfer
CABCOM	Cabinet Committee
CACs	Command and Control Instruments
CALABARZON	Cavite-Laguna-Batangas-Rizal-Quezon Growth Corridor
CAO	Contract-Add-Operate
CCO	Chemical Control Order
CCPAP	Coordinating Council of the Philippine Assistance Program
CDC	City Development Council
CDF	Countrywide Development Fund
CDO	Cease and Desist Order
CEEPA	Coastal Environment Education for Pacific and Asia
CENRO	Community Environment & Natural Resources Office
CIC	Cagayan de Oro-Iligan Industrial Corridor
CIDA	Canadian International Development Agency
CISO	Conference of Inter-Island Shipowners and Operators
CLC	Civil Liability Convention
CLD	Condition to Loan Disbursements
CLF	Countryside Loan Fund
COA	Commission on Audit
COD	Chemical Oxygen Demand
CODE-NGO	Coalition for the Development of NGO Networks
CPPAP	Conservation of Priority Protected Areas Project
CRC	Center for Research and Communication
CRISTAL	Contract Regarding Supplement Towards Liabilities for Cargo Owners
CSG	Council of State Governments
CTEM	Clean Technology and Environmental Management

CTFs	Common Industrial Wastewater Treatment Facilities
DA	Department of Agriculture
DAR	Department of Agrarian Reform
DBCC	Development Budget Coordinating Committee
DBM	Department of Budget and Management
DBP	Development Bank of the Philippines
DCs	Developing Countries
DENR	Department of Environment and Natural Resources
DFA	Department of Foreign Affairs
DILG	Department of Interior and Local Government
DMCs	Developing Member Countries
DMPI	Del Monte Philippines, Inc.
DOF	Department of Finance
DOH	Department of Health
DOST	Department of Science and Technology
DOT	Department of Tourism
DOTC	Department of Transport and Communications
DPWH	Department of Public Works and Highways
DSA	Domestic Shipowners' Association
DTI	Department of Trade and Industry
EAC	Environmental Adjudication Commission
EAPs	Experts Advisory Panels
EBR	Effective Base Rate
ECA	Environmentally Critical Area
ECC	Environmental Compliance Certificate
ECP	Environmentally Critical Project
EEP	Environmental Exchange Program
EGF	Environmental Guarantee Fund
EIs	Economic Instruments
EIA	Environmental Impact Assessment
EISCP	Environmental Infrastructure Support Credit Program
EIU	Environmental Infrastructure in Urban Areas
ELCs	Environmental Loan Covenants
EMB	Environmental Management Bureau
EMP	Environmental Management Plan
EMS	Environmental Management Strategy
ENRAP	Environment and Natural Resources Accounting Project
ENRC	Environment and Natural Resources Council
ENREPF	Environment and Natural Resources Protection Force
ENRO	Environment and Natural Resources Office
EO	Executive Order
EPR	Effective Protection Rate
EPZ	Export Processing Zone
ERB	Energy Regulatory Board
ESF	Economic Support Fund

ETR	Effective Tax Rate
EU	European Union
EWM	Ecological Waste Management
FASP	Foreign Assisted and Special Projects
FCDU	Foreign Currency Deposit Unit
FEBTC	Far East Bank and Trust Company
FIA	Foreign Investment Act
FIPC	Fastbrite Industrial Plating Corporation
FPA	Fertilizer and Pesticide Authority
FPE	Foundation for the Philippine Environment
FRLD	Foundation for Resource Linkage and Development
FSA	Filipino Shipowners' Association
FTI	Food Terminal, Incorporated
GF	Green Forum
GFIs	Government Financial Institutions
GIS	Geographic Information Systems
GOCCs	Government Owned and Controlled Corporations
GRT	Gross Revenue Tons
GSIS	Government Service Insurance System
HLRB	Housing and Land Use Regulatory Board
IAD	Integrated Area Development
IATT	International Air Transport Tax
IBRD	International Bank for Reconstruction and Development
ICC	Investment Coordinating Committee
ICF	International Commitments Fund
ICLARM	International Center for Living Aquatic Resources Management
ICM	Integrated Coastal Management
IDF	Institutional Development Fund
IEs	Industrial Estates
IEC	Information, Education and Communications
IEE	Initial Environmental Examination
IEMP	Industrial Environmental Management Project
IEMSD	Integrated Environmental Management for Sustainable Development
IEPC	Industrial Efficiency and Pollution Control
IFC	International Finance Corporation
IFP	Industrial Forest Plantation
IIE	Institute for International Education
ILO	International Labor Organization
IMF	International Monetary Fund
IMO	International Maritime Organization
INWMFP	Integrated National Waste Management Framework Plan
IOPC	International Oil Pollution Compensation Fund
IP	Indigenous People
IPAF	Integrated Protected Areas Fund
IPAS	Integrated Protected Areas System

IPO	Initial Public Offering
IPP	Investment Priorities Plan
IRA	Internal Revenue Allotment
IRR	Implementing Rules and Regulations
ITH	Income Tax Holiday
IWEP	Industrial Waste Exchange Program
KKP	Kabang Kalikasan ng Pilipinas
LBP	Land Bank of the Philippines
LBT	Local Business Tax
LDA	Less Development Area
LDAP	Local Development Assistance Project
LDCs	Local Development Councils
LG	Local Government
LGA	Local Government Academy
LGC	Local Government Code
LGU	Local Government Unit
LIBOR	London Interbank Offered Rate
LLDA	Laguna Lake Development Authority
LOI	Letter of Intent
LWUA	Local Water Utilities Administration
MARAD	Maritime Administration
MARC	Marine Research Community
MARINA	Maritime Industry Authority
MARLEN	Maritime Law Enforcement
MAROPS	Maritime Operations
MARPOL	Marine Pollution
MARSAR	Maritime Search and Rescue
MDC	Municipal Development Council
MDF	Municipal Development Fund
MEIP	Metropolitan Environmental Improvement Project
MEP	Marine Environment Protection
MERALCO	Manila Electric Company
MGB	Mines and Geo-Sciences Bureau
MIDP	Maritime Industry Development Program
MMC	Marcopper Mining Corporation
MMDA	Metro Manila Development Authority
MOA	Memorandum of Agreement
MSW	Municipal Solid Waste
MTPDP	Medium Term Philippine Development Plan
MWSS	Metropolitan Waterworks and Sewerage System
NASDA	National Association of State Development Agencies
NEA	National Electrification Administration
NEDA	National Economic and Development Authority
NEPC	National Environmental Protection Council
NGAs	National Government Agencies

NGO	Non-Government Organization
NHA	National Housing Authority
NIA	National Irrigation Administration
NIC	Newly Industrializing Country
NIPA	NGOs for Integrated Protected Areas
NIPAS	National Integrated Protected Areas System
NLUC	National Land Use Committee
NMP	National Marine Policy
NOCOP	National Operations Center for Oil Pollution
NOSPARC	National Oil Spill Prevention and Response Commission
NPC	National Power Corporation
NPCC	National Pollution Control Commission
NPFP	National Physical Framework Plan
NPPSC	NIPAS Policy and Program Steering Committee
NPS	Non-Point Source
NRIPS	National/Regional Industry Prioritization Strategy
NRMP	National Resources Management Program
NROs	NEDA Regional Offices
NSCB	National Statistical Coordination Board
NSO	National Statistics Office
NWAPCC	National Water and Air Pollution Control Commission
NWRB	National Water Resources Board
O&M	Operation and Maintenance
ODA	Official Development Assistance
ODS	Ozone Depleting Substances
OECD	Organization for Economic Cooperation and Development
OECF	Overseas Economic Cooperation Fund
OENV	Office of the Environment
OIC	Omnibus Investments Code
OPG	Operating Policy Guidelines
P&I	Protection and Indemnity
PA 21	Philippine Agenda 21
PAB	Pollution Adjudication Board
PAFs	Pollution Abatement Funds
PAMB	Protected Areas Management Board
PAWB	Protected Areas and Wildlife Bureau
PBE	Philippine Business for the Environment
PBSP	Philippine Business for Social Progress
PCG	Philippine Coast Guard
PCHRD	Philippines-Canada Human Resource Development
PCO	Pollution Control Officer
PCSD	Philippine Council for Sustainable Development
PD	Presidential Decree
PDAP	Philippine Development Assistance Program
PDF	Philippine Development Forum

RTI	Recycling Technologies, Inc.
SD	Sustainable Development
SEEA	System of Integrated Environmental and Economic Accounting
SEMP	Strategic Environmental Management Plan
SMC	San Miguel Corporation
SMEs	Small and Medium Scale Enterprises
SNA	System of National Accounts
SONA	State of the Nation Address
SRA	Sugar Regulatory Administration
TBILL	Treasury Bill
THW	Toxic and Hazardous Wastes
TLO	Temporary Lifting Order
TOR	Terms of Reference
TOVALOP	Tankowners' Voluntary Agreement on Liabilities on Oil Pollution
TSD	Treatment, Storage and Disposal
TSP	Total Suspended Particulates
TSS	Total Suspended Solids
TWG	Technical Working Group
UMPAP	Urban Management Programme for Asia and the Pacific
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention on the Law of the Sea
UNCSD	United Nations Commission on Sustainable Development
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
URBAIR	Urban Air Quality Management Strategy in Asia
US-AEP	United States-Asian Environmental Partnership
USAID	United States Agency for International Development
WB	World Bank
WM/CT	Waste Management/Clean Technology
WTO	World Treaty Organization
WWF	World Wildlife Fund
WWT	Wastewater Treatment

The Philippine government has issued numerous policies and conducted programs that affect marine pollution prevention and management. As part of the commitments made during the Earth Summit in Rio de Janeiro in 1992, the government has formulated Philippine Agenda 21 (PA 21) with sustainable development as its overarching goal. The document contains policies related to the protection of marine and coastal ecosystems, and enumerates the sectors that should carry out the action plan, i.e. local government units, fisherfolk, the business sector, and nongovernment organizations (NGOs). In financing the plan, possible financing mechanisms are enumerated based on the principle of sustainability. Furthermore, they tend to veer away from the usual Official Development Assistance (ODA) and supply-dependent funding sources. The new approaches are characterized as: 1) economic in nature; 2) market-based; and 3) exhibit potentials for national and global resource mobilization.

Aside from PA 21, there are a number of environment policies being implemented in the country. These consist of the:

- conduct of the Environmental Impact Assessment (EIA) on projects located in environmentally critical areas;
- issuance of permits to construct and to operate;
- issuance of locational clearances based on land use plans and zoning ordinances of local government units, for any business activity in a specific area;
- regulations for water quality assurance;
- effluent standards;
- regulations for waste management;
- cease-and-desist orders;
- penalties and fines for violators; and
- financial incentives being offered by the Department of Environment and Natural Resources (DENR).

Other sectoral policies affect the marine environment as well. Trade and investment policies are contained in the annual Investment Priorities Plan (IPP) formulated by the Board of Investments (BOI). The IPP contains a list of industries and areas where fiscal and financial incentives are offered. Projects in new industries are given more incentives than those that are in the expansion stage. Investments in environmental support facilities, e.g. waste management/ treatment/ control and industrial tree plantation, are eligible for availment of incentives offered in the IPP.

Meanwhile, policies for the tourism sector consist of specific areas where tourism development will take place. The framework of the Tourism Master Plan is based on the principles of eco-tourism. Hence, protection of the environment is crucial for the plan's success. The plan is accompanied by a Technical Report on

the Environment which provides the technical details of the environmental strategies of the plan. One of its important features is the integration of the economic and environmental considerations into the decision-making and planning processes at the local level.

To protect the marine environment, the government has formulated a National Marine Policy coordinated by the Cabinet Committee on Maritime and Ocean Affairs (Cabcom). Cabcom is composed of various national government agency representatives directly involved in policy formulation and program implementation in the marine sector. It is supposed to serve as a clearinghouse for marine-related policies. However, it does not have much clout over individual agencies in the implementation of programs due to its ad-hoc nature. Hence, policy gaps and conflicts among government agencies prevail.

A number of such gaps and conflicts have been identified in the report, many of which refer to the enforcement of environmental policies. The planning process likewise presents certain problems in conducting environmental protection efficiently. Overlaps in the functions of government agencies are prevalent, particularly those involved in marine pollution management. A glaring example is in the provision of sewage services in the country. The Metropolitan Works and Sewerage System (MWSS) has jurisdiction over sewage and sewerage systems in the metropolitan area. Unfortunately, MWSS is not keen on environmental protection, particularly in marine pollution prevention, given that only 10-15% of the population is served by a sewage system. Meanwhile, the DENR is primarily responsible for overall environmental protection and management. Statistics show that 70% of water pollution come from land-based sources. However, DENR does not have direct jurisdiction over such issues, hence cannot actively pursue environmental protection and management.

Another crucial problem lies in the implementation of the Local Government Code (LGC). Some environmental management functions, such as waste management, have been devolved to the local government units (LGUs). However, problems arise in the efficient implementation of these functions. Capability is sorely lacking at the local levels, particularly in the area of financial resource mobilization. Moreover, the devolved functions were not matched by devolved powers in enforcing environmental rules and regulations.

In the shipping industry, conflicts occur between the two major agencies in the sector, i.e. the Maritime Industry Authority and the Philippine Coast Guard. Delineation among their functions is unclear and undefined, resulting in either overlaps or non-implementation of certain duties and functions regarding maritime safety and marine pollution prevention and management. With respect to port-related sources of marine pollution, the Philippine Ports Authority (PPA) is in-charge of overall planning and monitoring of all ports in the country. Despite the lack of waste reception and treatment facilities, there is hardly any case of violators being charged or fined. Meanwhile, the private sector claims there is a lack of

financial incentives, as well as gaps in the law, that provide for increased investments in preventing pollution from ships. Old and outdated vessels are the main source of pollution. However, there are not enough credit sources that will allow the private sector to invest in newer models.

Constraints in the availment of financing for both the private sector and local governments have prevented investments in environmental projects. Banks are wary to provide credit because of the uncertainty of the returns on such investments. Furthermore, LGUs do not possess a good track record with banks simply because of limited experience in dealing with each other.

Notwithstanding, perspectives in undertaking marine pollution-related programs are underway. The executive branch of the government has been actively lobbying for the passage of the Revised Environmental Code which contains provisions aimed at correcting policy gaps and conflicts in the environment sector. Sustainable financing mechanisms are being introduced in the Code to ensure sustainability of enforcing environmental rules and regulations. The EIA System has likewise been strengthened and more projects will be subjected to the process to ensure adequate protection of the environment. In the planning process, environmental considerations are being included when assessing the economic feasibility of projects that require ODA funding. A draft Land Use Code which aims to correct deficiencies in the current state of land use planning is likewise pending in Congress. This will impact on the management of coastal zones, management of waste in the country and on the minimization of land-based sources of marine pollution.

Certain recommendations for the increase in the level of environmental investments are being proposed by the Industrial Environmental Management Project (IEMP). Included herein are the provision of fiscal incentives for project proponents, incentives for financial institutions, introduction of market-based instruments or MBIs, development of a cooperative relationship between the DENR and the financial community, development of a "clean" fund and improvement of LGU revenue mobilization.

A survey on the existence of financial mechanisms in the country was conducted. Results showed that there are a number of mechanisms that are being implemented, such as:

- financial incentives offered by the BOI for environmental investments;
- the industrial waste exchange program operated by the Philippine Business for the Environment;
- current fees on mine wastes and tailings;
- the newly-established Environmental Guarantee Fund;
- recycling efforts by some private companies; and
- the Build-Operate-Transfer (BOT) Scheme.

The BOT scheme is a form of partnership between the private and public sectors. It is an arrangement entered into by a private sector proponent with the government for constructing, financing, operating and maintaining infrastructure facility for a fixed period, after which the facility is transferred to the government. Power projects constructed during the early '90s were mostly financed through the BOT scheme. The adequate supply of energy being experienced today attests to the viability of the scheme in financing crucial government projects. However, the success of the whole scheme cannot be guaranteed until the projects are transferred back to the government after a number of years.

A number of factors are cited for the success of the scheme, such as:

- conducive legal environment;
- government guarantees for a reasonable return on investment;
- costing schemes that allow private sector projects to be competitive with government-financed projects;
- risk-sharing schemes between the government and the project proponent; and
- political will.

The Philippine government has put up a BOT Centre that coordinates all BOT projects and promotes the process in the country. One of its main thrusts for the coming year is the use of the scheme for environmental infrastructure, e.g. waste management projects. Training programs are being conducted for LGUs that plan to implement BOT projects in their respective jurisdictions.

Meanwhile, the national government has come up with a framework for national government assistance for financing local government projects with social and environmental objectives. The framework aims to facilitate and promote joint ventures among government units at the national and sub-national levels.

A number of case studies that implement sustainable financing mechanisms for marine pollution prevention and management are presented. The case studies are not necessarily focused on marine pollution. Nevertheless, they affect the marine sector because their focus is on the environment in general. At the national government level, three major projects have been undertaken:

1. Metropolitan Environmental Improvement Project. The MEIP primarily aims to assist pilot urban centers in Asia to address and eventually reverse the degradation of their environment. Coverage includes Beijing, Bombay, Colombo, Jakarta, Manila and Katmandu.

2. Industrial Environmental Management Project (IEMP). The IEMP encourages sustained economic growth in the industrial sector while reducing the adverse effect of environmental pollution with corresponding improvement in public health. Its three major components are:

- pollution reduction initiatives;
- capability building; and
- policy studies.

3. Integrated Environmental Management for Sustainable Development Programme (IEMSD). IEMSD is a three-year program meant to fill the gap in the Philippine Strategy for Sustainable Development, particularly the lack of attention towards preventive elements relative to environment protection, as opposed to the emphasis on environmental rehabilitation.

The private sector has its own set of case studies in implementing environmental improvement projects. Members of the sector include private companies, industry associations, private foundations and NGOs. Industries have gradually been taking the initiative in doing their share in environmental rehabilitation programs. Admittedly though, most of their effort is done to comply with environmental rules and regulations. Private foundations are increasing the number of environment-related projects they finance. But because of the very nature of their organizations, whereby they have a steady source of capital, sustainable finance mechanisms do not constitute a major part of their strategies and action plans. The NGO community, on the other hand, has members that are considered as funding mechanisms that support environment programs and projects implemented by other NGOs. The Foundation for the Philippine Environment (FPE) is one NGO that has a sustainable source of funds for financing environmental projects.

Although very few, there are some LGUs that have implemented waste management programs using sustainable financing mechanisms for their maintenance and operations. The Regional Programme likewise has assisted in the drafting of the Batangas Bay Strategic Environmental Management Plan, the implementation of which will be financed through sustainable financing schemes.

In sum, there are lessons that can be learned from the Philippine experience in implementing sustainable financing mechanisms for marine pollution prevention and management projects. Policy gaps and conflicts will have to be addressed immediately for these projects to take off and be operational on a sustainable basis. Other countries in the region will have their own stories to tell. As a follow-up activity to this research paper, an in-depth comparison can be carried out later on, which hopefully will lessen inefficient practices and effectively manage and protect marine resources.

INTRODUCTION

Sustainable development has been defined in numerous ways by experts belonging to different fields. PA 21 contains some of these definitions. From the financial point of view, SD is defined as living on the interest from our natural capital rather than on the capital itself. Other experts believe that doing so is inevitable, but that the present generation can invest in social capital that can be left for future generations. Demographers say it is living within the carrying capacity of our environment and natural resources. Meanwhile, economic planners see SD as simply integrating environmental considerations in socio-economic policy and decision-making.

Despite the lack of a common definition of SD, there is a growing consensus that sustainability of environmental protection and management projects relies heavily, if not principally, on the financing mechanisms employed for their operation. Governments of developing and transitional economies have started to focus their attention on the use of economic instruments to finance environmental projects because of their proven track record in developed countries. Dr. Panayotou states: *"The search for instruments for environmental management in developing and transitional economies is a search for instruments of sustainable development. Economic instruments meet most of these conditions and are uniquely suited for the integration of environmental and economic policy and can be designed to advance sustainable development."*

The GEF/UNDP/IMO Regional Programme on the Prevention and Management of Marine Pollution in the East Asian Seas recognizes sustainable financing as a crucial element in the conduct of marine-related programs. It thus aims to come up with a proposal to governments of the region that promotes the effective mobilization and channeling of in-country and external resources. The proposal will contain economic policies and financial instruments that will contribute to a "critical mass" of resource input essential to the ongoing operation of national and regional marine pollution management programs.

This research work was conducted to contribute to the proposal. It identifies existing policy instruments and financial mechanisms available in the Philippines for mobilizing financial resources for infrastructure projects which impact directly and indirectly on marine pollution programs. Policy gaps and conflicts are further reviewed, particularly those that inhibit investments in infrastructure that affect marine pollution prevention and management. Perspectives of the sectors, i.e. government, NGOs, LGUs, and the private sector, are likewise discussed in the third portion. Finally, case studies on government programs and environmental investments by private sectors, particularly those that involve partnerships among the sectors and those that use economic instruments, are enumerated in the last part of the paper.

I. Government Policies And Programs that Directly and Indirectly Target Marine Pollution Prevention and Management

The first part of the report deals with government plans, policies and strategies that directly and indirectly affect marine pollution control and management. There is a plethora of environmental rules and policies that can be enumerated. Focus, however, is given to those that were formulated very recently.

A. PHILIPPINE AGENDA 21

1. PHILIPPINE COUNCIL FOR SUSTAINABLE DEVELOPMENT

The Philippine government established the Philippine Council for Sustainable Development (PCSD) by Executive Order on September 1992 to ensure that the commitments made in Rio are implemented, monitored and coordinated at the global level. The United States has cited PCSD as a model for government-NGO partnerships through its NGO-PO Counterpart Secretariat, which was established to coordinate the activities of the NGO community with PCSD.[1]

The mandates of the PCSD are:[2]

1. to review and ensure the implementation of commitments to sustainable development principles made in Rio;
2. to establish guidelines and mechanisms to concretize and operationalize the sustainable development principles in the Rio Declaration and incorporate them in the preparation of the MTPDP at the national and local levels;
3. to act as a coordinating mechanism on the provision of assistance and cooperation towards the fulfillment of commitments to Agenda 21;
4. to provide directions to address the continuing and emergent issues and chart future actions related to environment and sustainable development; and
5. to adopt a Philippine Agenda 21 (PA 21).

In drafting PA 21, PCSD undertook the following activities:[3]

1. incorporated Agenda 21 principles into the development plans and budgets at the national and local government levels;
2. formulated the Philippine Strategy for Biological Diversity Conservation;
3. provided lead roles in the implementation of NGO-PO initiated projects;
4. ratified the Basel Convention;
5. coordinated the preparation of Philippine positions to various international fora;

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[1] Philippine Capacity 21 Project. *Socio-Economic Dimensions: Chapter 12: International Cooperation*, in Draft Philippine Agenda 21. Pasig, Metro Manila: 2 February 1996.
[2] Ibid.
[3] Ibid.

6. integrated sustainable development activities into the national budget; and
7. formulated an Executive Order on improving the Philippine Environmental Impact Assessment.

2. FRAMEWORK/LANDSCAPE OF PA 21

The framework for PA 21 discusses the principle of sustainable development. Although there was no consensus regarding the definition of SD, analysts agree that its primary concern is to address poverty.

People, due to poverty, turn to the environment for livelihood. Environmental quality, in turn, suffers causing further deterioration of life. Migration patterns further suggest that once agricultural lowlands have been exhausted, people either turn to the cities, move to the uplands or to the coast to use available resources in the area. As cities become overcrowded, development efforts tend to favor these very dense areas. This causes further imbalances in the economy and consequently widens the gap between the rich and the poor.

The poor are not only contributors to the continuous degradation of the environment. They are also victims of their own deeds because they lack access to sufficient, equitable and secure access to natural resources and environmental services.[4] For one thing, they live in the most marginalized areas, particularly those that are vulnerable to natural disasters (rural poor) and in disease-prone squatter areas that lack essential services (urban poor). But more importantly, they inequitably pay for the cost of environmental exploitation which those who do have full access don't or only partially pay for.[5] Municipal fishermen suffer because of over-fishing of big trawlers. Likewise, 70% of urban residents who do not own cars agonize over the worsening pollution caused by the affluent 30% who own 70% of the vehicles operating in Metro Manila.

Given this, planning and program/project implementation will have to take economic, social and environmental concerns as inextricably woven with each other. Each sector influences the other such that lack of coherence and synchronization in development efforts results in policy conflicts, trade-offs and negative cross-sectoral effects.[6]

To operationalize the framework, the following criteria for sustainability, along with the parameters therefor, shall be used:

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[4] Virtucio, Felizardo K. Jr. *Integrating Sustainable Development in Philippine Anti-Poverty Programs*, in Draft Philippine Agenda 21. Pasig, Metro Manila: 1996.
[5] Ibid.
[6] Cabrido, Candido A. Jr. *Sustainable Development Framework*, in Draft Philippine Agenda 21. Pasig, Metro Manila: 8 February 1996.

1. Economic Viability

- maintaining a sustainable population whereby population growth must match the exosphere's carrying capacity, and the consumption patterns of the population should be encouraged to adopt to sustainable production patterns;
- sustained economic growth, including the growth of domestic employment to combat poverty; and
- maintaining productivity and profitability of environment and natural resources.

2. Ecological Viability

- adopting environmental management tools in policy and decision-making; and
- protecting the environment and conserving natural resources.

3. Technological Viability

- managing residuals; and
- adopting environment-friendly technologies, especially those that are productive, not extractive, i.e. those that do not cause non-renewable resources to further dwindle, rather increase their value by using more renewable resources at a rate that would equal their regenerative capacity.

4. Political Viability

- empowering the people; and
- maintaining peace and order.

5. Cultural Viability

- promoting resource access and upholding property rights; and
- promoting environmental awareness, inculcating environmental ethics and supporting environmental management actions.

6. Institutional Viability

- improving institutional capacity/capability to manage sustainable development [7].

[7] Ibid.

Four components were used to translate the framework into an agenda for action:

- Governance: means of implementation;
- Socio-economic dimension;
- Strengthening the role of major groups; and
- Conservation and management of natural resources.

3. POLICIES ON THE COASTAL AND MARINE ECOSYSTEMS

Threats to Coastal and Marine Ecosystems

The coastal and marine ecosystems are experiencing threats to their survival. PA 21 cites the various reasons why the coastal and marine ecosystems are on the verge of destruction. Some of these reasons are:

- open access to coastal areas;
- mangrove conversion to aquaculture;
- erosion and siltation from forestry activities;
- industrial and agricultural pollution;
- solid wastes dumped by households;
- backwardness of the fishing industry;
- lack of postharvest facility and inadequate infrastructure to increase production;
- national trends such as promoting Regional Industrial Centers (RICs) expected to attract foreign investment in the form of industrial plans; and
- promotion of intensive farming systems and high-value crops that use substantial amount of chemicals and fertilizers that will exacerbate siltation from denuded forest areas.

Programme Areas in PA 21

Government has attempted to come up with comprehensive plans for the fisheries sector, particularly with the advent of the Medium Term Fisheries Management and Development Program. It recommends the decentralized management of nearshore fisheries resources to municipalities and local fishing communities. This was to correct previous attempts of the government to manage fishery resources based on centralized planning which ignored local initiatives, thereby rendering futile their efforts to control overexploitation of resources. The community-based resource management technique is now being implemented. It aims to ensure equity in resource utilization and sustainability of coastal resource productivity.

PA 21 contains the major programmes and action plans the government intends to pursue with regard to coastal and marine ecosystems. PA 21's vision for this ecosystem is *"improved and sustained quality of life by the year 2025 through the*

equitable utilization, conservation, preservation and protection of coastal and marine resources by economically and socially self-reliant people."[8]

The first programme area deals with protection, conservation and management of coastal and marine resources. Mangrove forests, seagrass beds, coral reefs and fishery resources will be rehabilitated. Protected areas would be declared and sanctuaries will be established. The Coastal Resources Management strategy will further be institutionalized.

The second programme area deals with controlling land-based sources of pollution and other causes of coastal and marine ecosystems degradation. These land-based sources cause two kinds of pollution, siltation or sedimentation of the marine environment: chemical (e.g. persistent organic pollutants, heavy metals, nutrients) or biological (e.g. pathogens from sewage and solid wastes). These pollutants become public hazards through contaminated seafood, direct contact such as bathing, and use of sea water in food processing industries. Food security further becomes threatened as the productive capacity of the marine habitats to support fisheries is altered.

Other sources of degradation include destructive fishing practices, collection of marine resources, and natural calamities. The use of best available technology, best environmental practice and integrated pollution prevention and control will be taken into account when measures to reduce pollutant emissions and discharges are implemented. The EIA, comprehensive land-use management, risk assessment, environment and natural resources accounting, environmental monitoring, integrated watershed management, integrated coastal area management, economic and regulatory instruments, innovative financial mechanisms, etc. are considered to be of utmost importance in sustaining the productivity of this ecosystem. EIA procedures will be improved and simplified to ensure appropriate adoption of pollution control technologies.[9]

The objectives for protecting this ecosystem include:

1. Strict enforcement and updating of environmental laws related to coastal and marine development;
2. Encourage transfer and use of appropriate technology especially in industries situated within or in areas affecting the coastal and marine ecosystems; and
3. Adoption of environmental management tools, i.e. comprehensive land-use management, risk assessment, etc.

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[8] NEDA. *Coastal and Marine Ecosystems* in Draft Philippine Agenda 21. Pasig, Metro Manila: 14 February 1996.
[9] Ibid.

The action plan for the marine environment is composed of the following activities:

1. Develop or update the sewerage master plan to ensure that existing and future developments have provision for sewerage systems;
2. Establish waste treatment and disposal quality criteria, objective and standards based on the nature and assimilative capacity of the releasing environment;
3. Ensure that at least 50% of all sewage, wastewater and solid wastes are treated or disposed of in conformity with national environmental and health quality guidelines;
4. Dispose of all sewage, wastewater, and solid wastes in conformity with national environmental quality guidelines;
5. Adopt sound garbage disposal systems and improve solid waste management services to include systematic collection, handling, transfer and disposal of solid wastes complemented by a livelihood programme for scavengers;
6. Provide the urban population with adequate waste services;
7. Install garbage containers for citizens in public areas for purposes of appropriate collection and/or recycling;
8. Establish and ensure proper operation of solid waste management facilities on-shore for wastes from all sources including wastes from ships;
9. Ensure that full urban waste service coverage is maintained and sanitation coverage is achieved in all rural areas;
10. Develop plans and measures to prevent accidental release of oils particularly from coastal refineries and of capacities to respond to such accidents;
11. Establish environmental monitoring programmes for oil including development of assessment criteria;
12. Provide reception and recycling facilities for used lubricating oils to prevent proliferation of persistent organic pollutants (POPs);
13. Develop and maintain inventories of point sources of POPs;
14. Develop a national action plan for reduction and elimination of emissions and discharges of POPs;
15. Develop appropriate regulatory measures and establish facilities for environmentally-sound collection and disposal of wastes containing POPs;
16. Establish an environmental monitoring programme for POPs including the development of assessment criteria and the adoption of internationally accepted quality controls and quality assurances;
17. Develop voluntary agreements to eliminate or control emissions and discharges of POPs;
18. Develop and maintain inventories on significant sources, including natural sources, of priority heavy metals and subsequent assessment and establishment of priority areas for action;
19. Establish cleaner production programmes in cooperation with industries including recycling and reuse of wastes as well as the efficient use of energy and water;

20. Develop appropriate regulatory measures and establish facilities for environmentally sound collection and disposal of hazardous wastes containing heavy metals;
21. Formulate and implement awareness and information campaigns for the adoption of appropriate agricultural practices/techniques including balanced fertilization and ecological agriculture to minimize nutrient losses from agricultural activities;
22. Upgrade soil erosion control measures in public and private development and require the enhancement of monitoring and enforcement of development control measures currently in place;
23. Establish soil erosion control guidelines and verification procedures for public and private development;
24. Establish monitoring of sediment transport to the marine environment and associated sedimentation patterns and rates;
25. Develop and implement environmentally-sound land-use practices to control sediment discharges to water courses and estuaries which cause degradation of the marine environment;
26. Establish measures to control and prevent coastal erosion and siltation due to anthropogenic factors such as land use, including coastal mining and construction practices;
27. Adopt fiscal and economic measures, including voluntary agreements to encourage reduction and/or elimination of emissions and discharges of heavy metals;
28. Provide alternative livelihood for fisherfolk to relieve pressure on the resources;
29. Modernize fishing equipment;
30. Increase penalties/fines for violators of fishery laws; and
31. Modernize Bantay Dagat/Ilog equipment.

The third programme area is on the formulation and implementation of an integrated water and land use plan for coastal areas considering the carrying capacity of the area and use compatibility. The pressures on coastal areas created by population growth will be regulated. On the other hand, reclamation activities will be undertaken to accommodate the increase in population over the years. EIAs should be programmatic to ensure compatibility and economy in the cost of waste disposal systems, settlements and other infrastructure. Establishment of beach resorts will also be regulated.

The fourth programme area reviews policies/strategies relevant to management of coastal and marine ecosystems. These policies have been fragmented and anchored on resource-based schemes. Poverty is now considered as a major source of pollution. Furthermore, the question of access and control in resource management will be addressed, especially in the fisheries sector. Thus, there will be a review of bilateral agreements, and responsibilities and jurisdiction of various agencies will be clarified, particularly regarding mangroves. Policies on tourism in coastal areas will be reviewed, whereby tourism should not compromise access of small fisherfolk to resources nor should they endanger coastal resources.

Stricter enforcement of pollution laws will be attempted, while recognizing the rights of indigenous communities in coastal areas.

Finally, the government will embark on a capacity-building and information strategy to enable communities to participate in the management of coastal and marine ecosystems.

4. SECTORS INVOLVED IN IMPLEMENTING PA 21

Local Government Units (LGUs)

The LGU is a government body that has jurisdiction over a barangay, municipality, city or province. It is the formal political structure mandated to bring about development at the community level. The country is divided into 77 provinces, which are subdivided into 66 cities and 1,544 municipalities. These cities and municipalities are made up of 41,922 barangays. In total, there are almost 43,000 LGUs in the country. Each one has a set of elected officials and enjoys some degree of financial autonomy.

Decentralization has been a major undertaking for the past five years. The Local Government Code (LGC) was passed in 1991, owing to the decade-long struggle of local governments for local autonomy from the central government.[10] The LGC devolves the responsibility of delivering basic services to the local governments. Such services include health, environment, agriculture and social services. Furthermore, it devolves certain regulatory and licensing functions, such as the reclassification of agricultural lands, enforcement of environmental laws, licensing of tricycles, etc.

The LGC increases the financial resources available to LGUs, from 11% of the internal revenue allotment to 40%. It likewise guarantees a 40% share for LGUs from the proceeds of national wealth in their respective areas. LGUs can now enter into loans, and they can access domestic and international grants on their own. They now have corporate powers such that they can exercise proprietary rights, enter into loans with other LGUs, enter into BOT schemes, and float bonds.

Finally, LGUs are now required to involve NGOs and POs in the process of local governance. This is what is known as debureaucratization of the government. These NGOs and POs are guaranteed seats and representation in local special bodies such as the local development council, the local health board and the local school board.

Because of all these devolved functions and powers, the LGUs are now given a chance to be dynamic and creative. They therefore play a key role in

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[10] Brillantes, Alex B. Jr. *Development Administration for Sustainable Development*, in Draft Philippine Agenda 21. Pasig, Metro Manila: 14 February 1996.

putting the values of sustainable development into operation[11], and are now responsible in integrating sustainable development concerns in their respective local development plans, strategies, programs and projects.

Specifically, the Code mentions that LGUs are responsible in:

- enforcement of laws related to pollution control and protection of the environment;
- adoption of measures to safeguard and conserve land, mineral, forest, marine and other resources of the municipality, city or province; and
- protection of the environment and imposition of appropriate penalties for acts which endanger the environment.

As can be gleaned from the above, the passing of the LGC of 1991 created tremendous opportunities for the provinces, cities and municipalities to grow and develop on their own initiatives. This meant that any LGU could make its own targets and programs independent of the national government agencies' prioritization scheme with respect to the development of geographical areas in the country.

Other functions of the LGU include administration of justice, police power, power of eminent domain and promotion of education. They can enter into contracts, levy real estate taxes, and even celebrate and manage their own town fiestas.

The responsibility for spatial organization and allocation of various activities within a particular area of jurisdiction lies in the land regulatory instrument of the LGUs, the zoning ordinance. They now exercise authority over community forests and small watersheds. They also reclassify agricultural lands after the implementation of a zoning ordinance based on a comprehensive land use plan.

In its planning activities, an LGU is expected to come up with an integrated area development (IAD) plan, whereby it provides an integrated delivery of services in an underdeveloped region covering many sectors. Coupled with community organizing, support of the rural population is solicited. By factoring in sustainable development, it is expected to develop the capacity to generate financial and technical resources internally and to equitably distribute the fruits of development.

With respect to conflicts with national programs and projects, Section 26 of the LGC states that *"all national government agencies and government owned and controlled corporations must consult with LGUs and the NGO sector in the planning and implementation of any project that may cause pollution, climatic changes, or depletion of non-renewable resources."*[12] This means that national government bodies

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[11] Ibid.

[12] NEDA. *Local Governance Authorities*, in Draft Philippine Agenda 21. Pasig, Metro Manila: 1996.

cannot undertake activities that would cause environmental degradation and destruction without the approval of the LGU. The LGU is thus given the authority to determine the fate of its natural resources.

Fisherfolk Sector

The 1990 census shows that population in the coastal areas in the country represents 13% of the total population. Furthermore, 70% of those employed in the fishery sector belong to the group of municipal fishers. The municipal fisheries sector accounts for 41.3% of total fish production and ranks second in terms of value. Coastal waters are the fishing grounds of the municipal fishers. Given this, it is very important to address the needs of this sector, as they play a major role in using and managing the coastal and marine environment.

It is envisioned that marine and coastal resources will be managed based on property rights guided by coastal management and planning systems evolved through people's initiatives and participation, particularly the fisherfolk.[13] Coastal resource management must be integrated in legal infrastructure, policies and administrative mechanisms to ensure its success.

Business Sector

The business sector came up with its counterpart to PA 21, the Business Agenda 21. Based on both economic and environmental considerations, the ultimate aim of BA 21 is to get close to zero-waste production. Minimizing waste, energy use and environmental impact will require cleaner production technologies and effective recycling processes.[14]

The document specifies three goals in pursuing environmental protection:

1. minimize adverse environmental impact;
2. become more effective in complying with environmental standards; and
3. have access to environmental services that facilitate environmental management and compliance.

In the short term, the sector proposes to focus on education and standard-setting. In the medium term, it plans to gradually improve production emissions complemented with shared efforts with the government. Finally, in the long term, i.e. in 30 years, it will focus on renewable processes and use environment as a competitive advantage, giving rise to entrepreneurship and industries that are sustainable.

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[13] NEDA. *The Fisherfolk Sector and Sustainable Development*, in Draft Philippine Agenda 21. Pasig, Metro Manila: February 1996.
[14] NEDA. *Business Agenda 21*, in Draft Philippine Agenda 21. Pasig, Metro Manila: February 1996.

The components of the document include:

1. environmental management, which requires reorientation of company to become environmentally sensitive;
2. shared objectives and targets with the government; and
3. environmental entrepreneurship, which establishes environment-friendly enterprises that help other businesses comply with regulations, e.g. recycling, laboratories and technology development.

At this point in time, environmental protection is being undertaken by the business sector primarily because of state control. It is their aim that industries will become more proactive and holistic in approaching this activity. The benchmarks they have identified in doing this are the following:

- Adoption of ISO-14000;
- Voluntary reduction of emissions to levels determined by the DENR or even improved over standards;
- Perceptible restoration of affected ecosystems and depleted renewable resources; and
- Marked increase of smaller businesses participating in environmental efforts.

Other Groups

NGOs are considered as pioneers in promoting sustainable development. This is particularly true in the conduct of public activities that the government fails to undertake due to bureaucratic, budgetary and manpower constraints. PA 21 enumerates the various efforts of NGOs in promoting sustainable development activities and recognizes the difficulties of accessing alternative financial mechanisms to be able to be totally independent of government, i.e. official aid and assistance. Nevertheless, efforts at the moment are geared towards breaking this habit.

Women, youth and the labor sector also have their own equally important roles in the pursuit of PA 21.

5. FINANCIAL MECHANISMS TO IMPLEMENT PA 21

PA 21 has enumerated a number of strategies and programmes to realize its objectives. Needless to say, financing options and resources have to be addressed as well. There has been not much experience in this field to learn lessons from, and the country is faced with the challenge of becoming creative and innovative in this regard.

A basic principle that is emphasized is that these financing options should be sustainable. In other words, the investment made in these economic activities

should be able to *"internalize the costs of sustainable development and its externalities."*[15] Hence, the options should contain mechanisms that generate budgetary resources for sustainable development expenditures, as well as change the modes of production and consumption that are congruent with sustainable development objectives and practices. A concrete example of this would be "getting the prices right" in public sectors like energy, water, transportation and agriculture.

In the past, environmental projects relied mainly on either allocations from the budget or official development assistance (ODA) grants and loans. These funds were used by both governmental and non-governmental bodies in conducting the programs and projects. They can further be characterized as being financial in nature and supply dependent. However, sustainable development programs and projects require new approaches that are:

1. economic in nature, i.e. economic instruments (EIs);
2. market-based; and
3. exhibit potential for national and global resource mobilization.[16]

With respect to the institutions involved, the experience of developing countries (DCs) has been in implementing command-and-control instruments (CACs). This has proved to be disappointing because enforcement authorities are not able to institute proper and sufficient mechanisms to encourage or restrict behavior relative to the utilization of natural resources. In turn, this has led to the problem of open access to natural resources and consequent environmental degradation. Hence, costs in implementing CACs continually increase. In particular, monitoring of pollutant emissions has been very weak, and guidelines for enforcement are wanting.

Developed countries have expressed interest in promoting the use of EIs because of the costs and difficulty of implementing CACs. Furthermore, the tight fiscal situation of both developed and developing countries aggravate the need for new approaches in addressing environmental concerns. EIs are cost-effective than CACs because they are motivated by the "polluter pays" principle. But it is precisely because of this that developing countries are hesitant to adopt these EIs proposed by developed countries. The latter has been accused of developing at the expense of environmental degradation of developing countries, i.e. through the application of environmentally unfriendly technologies and the unregulated extraction of their natural resources.[17] Because of this, DCs are bargaining for them to pay the lion's share in solving environmental problems and installing mitigating measures to prevent further degradation.

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[15] Inocentes, Eugenio III. *Towards An Action Plan For Generating Financing Options For Sustainable Development Activities in the Philippines*, in Draft Philippine Agenda 21. Pasig, Metro Manila: 28 January 1996.
[16] Ibid.
[17] Ibid.

In this regard, DCs have proposed for the following measures in their negotiations:

- EIs should not replace the promise of developed countries to increase ODA to at least 0.7% of GNP by year 2000;
- EIs should only be additional to those committed in Rio de Janeiro;
- EIs should not shift the burden of solving environmental problems to DCs; and
- EIs should be flexible enough to adjust to the varying situations in DCs, hence should be adaptable.

The UNCSD has proposed specific measures as possible EIs:

1. International air transport tax (IATT). A user charge on air transport can generate financial resources for sustainable development activities. It can be levied on either air transport fuel or the volume of air traffic. The advantage of using the IATT is that North America and Europe will be most affected because 2/3 of air transport occurs in these places. However, the IATT will unfairly penalize the airline industry considering that other industries are equally pollutive. Locally, IATT will effectively burden Filipino overseas contract workers and travelers.

2. Internationally tradable carbon dioxide (CO_2) permit. This recognizes the right of people and entities to engage in activities that emit CO_2. It further allows for greater finance generation for sustainable development activities. However, this has not been implemented anywhere and there are no clear rules in setting the initial allocation of pollution rights. What can be implemented is an international carbon tax on all carbon-based fuels, e.g. oil, gas, coal, etc. The schedule of the tax shall be distributed equally according to the carbon content of the fuel. However, it does not work on the same premises as those of the permit because the tax implies that there is no technology that could reduce per se CO_2 emissions, and the costs of switching to lower carbon content fuels are extremely high.

3. Joint implementation. This is based on the fact that different countries have different abatement costs for emission reduction measures. Hence, financial resources should be distributed according to the benefits to be derived to make the arrangement profitable for everyone. This can lead to technology transfer and technical assistance for developing countries in cleaning their environment. This can also mean lower costs for developed countries in meeting national obligations through less expensive measures abroad.[16] However, this may also cause development priorities and programs of developing countries to take a sidestep as developed countries concentrate their funds for environmental programs, some of which may be less urgent than other sectoral programs.

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[15] Ibid.

4. Debt-for-nature swaps. This mechanism is a direct way of assuring developing countries that their money is spent on environmentally beneficial programs. It further increases their international reserves savings which would have been used to pay for their debts. For the creditor countries, this lessens the percentage of debts to be written off. To date, however, debt-for-nature swaps constitute a minimal amount of the total debt of developing countries. They also constitute the amount needed to close the financial gap of sustainable development. OECD countries' interest in this scheme has been waning.

Other EIs being considered in the international community are:

1. Pollution Abatement Funds (PAFs);
2. Regional Sustainable Development Funds;
3. Multilateral "Green Round"; and
4. Tobin Tax.

The country faces the problem of allocating meager resources among programs that are important in its development: the Comprehensive Agrarian Reform Program, the Social Reform Agenda, the Human and Ecological Security Program and the PCSD. This injects a lot of pressure on the budget causing these programs to compete with each other to determine which one should be given the greatest priority. PA 21 should therefore attempt to encompass all sectoral concerns in achieving sustainable development. This is known as Pareto optimality, wherein everyone is made better off, or at least no one is made worse off, by the allocation scheme that the government would embark on.

Capacity 21 has identified possible sources that the government can tap to support PA 21. For one thing, the international community is eager to provide a climate for achieving sustainable development. With the establishment of the WTO and AFTA, trade liberalization is well underway. Macroeconomic policies have been proposed by UNDP while the Tokyo Consultative Group and the IMF are currently reviewing their country programmes to know whether they are consistent with sustainable development objectives. However, developed countries are trying to use environment concerns as non-tariff barriers against exports of developing countries.

The government can likewise redirect ODA from its present bias towards infrastructure because the BOT scheme is used to finance most of these revenue-generating projects.

One possible internal funding source would be the reallocation of the International Commitments Fund (ICF) which is meant for payment to 12 international organizations. The budget amounts to PhP1.103 billion under the 1996 General Appropriations Act.

PA 21 has identified other possible local sources of financing for sustainable development. These, however, are still supply dependent in nature, i.e. are not sustainable on their own, hence do not constitute as EIs. They are:

1. Internal Revenue Allotments (IRAs). These are allocations from the national government to local governments. LGUs may use these funds for sustainable development projects.
2. Local Entertainment Tax. LGUs may tax entertainment activities, such as movies, and use the funds for specific SD projects.
3. Shares from "Sin Taxes". These are taxes collected from tobacco and alcohol. These can be viewed as an application of the "polluter pays" principle, whereby proceeds can be used to fund livelihood and industrial projects in the tobacco growing provinces.
4. Lotto Tax. These are taxes from the sale of Lotto tickets. Lotto is a lottery game conducted by the Philippine Charity Sweepstakes Office (PCSO). A caveat to using taxes to fund specific sustainable development projects is that it goes against the current budgeting guideline of the government of *"discouraging the earmarking of funds for specific uses and activities."*[19] The policy at the moment is based on a "one-fund" concept, hence should specific taxes be allocated for specific activities, this policy will have to be modified.
5. Initial Public Offerings (IPOs). Fees could be collected from IPOs of environment-friendly private firms. Considering the burgeoning of the country's capital market, this source proves to be feasible. However, this could also cause a dampening effect on the market, as the private sector's interest might wane if a portion of the IPO proceeds would be used directly for SD projects.
6. Countrywide Development Fund and Other Special Purpose Funds. The CDF is the pork barrel fund given to all lawmakers in the country to be used for development programs and projects they fund.
7. Corporate Private Sector Resources. A number of foundations are existing in the country today and these could serve as sources of funds for SD activities. Other firms could be encouraged to set up their own foundations for similar purposes.[20]
8. NGOs.

B. Environment Policies

The DENR is the primary agency tasked to plan, regulate and enforce environmental policies, rules and regulations for environmental protection and anti-pollution activities. It is in charge of issuing permits for industries to locate in particular areas, as well as to operate certain activities. One of its staff bureaus, the Environmental Management Bureau (EMB), is tasked to conduct the Environmental Impact Assessment (EIA) for projects deemed to affect the environment. Another body under the DENR is the Pollution Adjudication Board (PAB) which oversees

[19] Ibid.
[20] Inocentes.

the implementation of pollution-control laws. Compliance with other regulations, such as those on water quality assurance and effluent standards, are monitored by the agency as well. In this regard, DENR is empowered to collect penalties and fines based on a schedule determined by law.

1. ISSUANCE OF PERMITS

In pursuing their mandate of environmental management and protection through PD 984, the DENR Regional Offices (ROs) are empowered to issue two kinds of permits: the Authority to Construct (AC), which is issued once to authorize the construction of the anti-pollution device (APD) after approval of the plans and specifications thereof; and the Permit to Operate (PO) issued annually to authorize the continued use of air and water pollution control device and the air pollution source. Water pollution sources are not subject to annual re-issuance of the PO.[21] The annual permit review and re-issuance of the permit was determined internally within DENR and is not specified in PD 984[22].

The PO is issued after these three requirements have been met:

- prior issuance of the AC;
- inspection showing the APD is properly maintained and is still sufficient; and
- the APD complies with the standards.

2. ENVIRONMENTAL IMPACT ASSESSMENT (EIA) SYSTEM

Legal Basis of the EIA

Presidential Decree (PD) 1151 mandates the adoption of the Environmental Impact Assessment (EIA) system as the mechanism by which the *"exigencies of socioeconomic undertakings can be reconciled with the requirements of environmental quality"* (1st par. Preamble, PD 1586).[23] At present, PD 1586 (Establishing an Environmental Impact Statement System) issued on 11 June 1978 and the Pollution Control Law are the most powerful environmental quality regulations. PD 1586 further mandates the, then, National Environmental Protection Council (NEPC), now the Environmental Management Bureau (EMB), to administer the EIA system.

The EMB was created under Section 16 of Executive Order (EO) No. 192 which provided for the reorganization of the DENR and created attached agencies and bureaus. It has the same functions as the former NEPC such as planning, management and implementation of the government's environment program. With

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[21] IEMP. Policy Study #2/10: Analysis of Current Regulatory Programs for Pollution Management, Volume II Appendix A. Manila: 27 March 1995.

[22] PD 984 deals with: new pollution control laws. It abolished the National Water and Air Pollution Control Commission (NWAPCC) and created the National Pollution Control Commission (NPCC). It further broadened the powers of the NPCC to include CDOs.

[23] IEMP. Policy Study #2/10.

this, it is expected to *"rationalize the functions of government agencies charged with environmental protection and with the enforcement of environment-related laws to the end that effective, coordinated and integrated systems of environmental protection; research and implementation and enforcement of such laws shall be achieved."* (Sec. 3 (a), PD 1121).

The EIA process involves the following steps:

- Preparation and submission of the Environmental Impact Statement (EIS)by the proponent to the DENR-EMB;
- Assessment of completeness of requirements by the EMB;
- Provision of additional information required by the EMB;
- Inspection of the proposed site by the EMB, together with the DENR RO/PENRO and LGU;
- Evaluation of the EIS by the Review Committee;
- Public hearing, which may be called by the EMB Director; and
- Issuance/Non-issuance of Environmental Compliance Certificate (ECC).

Certain exemptions for submitting an EIS are granted to companies if they meet the following:

1. discharges minimal amount of wastes and the management of such wastes is relatively easy;
2. has capitalization of not more than PhP500,000.00; and
3. employs not more than 20 persons.

These companies would still have to secure exemption certificates from the EMB. Hence, the DENR determines which companies are exempted and which are not. Even with the issuance of these certificates, the DENR may still impose certain conditions requiring the proponent to institute necessary remedial measures.

Land Bank of the Philippines

In facilitating the process of accrediting projects whether or not they require an ECC, the Land Bank of the Philippines (LBP) has introduced institutional changes that would produce such an effect. LBP is one of two government financial institutions involved in wholesale and retail lending for development programs and projects in the country. Just recently, it has set up an environmental unit tasked to evaluate the environmental component of all proposals submitted to the bank. It sees to it that projects which require environmental clearances comply with environmental laws[24]. It further coordinates with the DENR-EMB to accelerate the processing of environmental clearances and permits on projects financed by the bank. The European Union (EU) sees its role as facilitator, i.e. it assists the

[24] Environmental Management Bureau. *Industry Environews*, Vol. 4 No.1. Quezon City: January- March 1996.

proponents in ensuring that the proposals are in compliance with environmental laws and regulations. Specifically, the tasks of the EU are to:

- review the project description of each sub-project to determine environmental effects;
- assist in reviewing or preparing the EIA, the cost of preparing the EIA to be shouldered by the sub-borrower;
- liaise with DENR-EMB to accelerate the processing of official environmental clearance and permits; and
- maintain a list of qualified environmental consultants to assist in complying with the requirements of the Countryside Loan Fund (CLF)[25] and other special financing programs.

Regarding the last point, LBP eventually hopes to come up with a list of accredited consultants/experts by both the Land Bank and the World Bank. This list will be made available to all interested parties, the objective of which is to facilitate the preparation of EIA and EIS for project proposals in both wholesale and retail lending.

The EU envisions itself as undertaking additional functions in the future:[26]

- provide environmental training assistance to Participating Financial Institutions (PFIs) under the CLF;
- maintain a core of accredited environmental consultants that can be tapped by PFIs and project beneficiaries; and
- provide other technical environmental services to PFIs and sub-borrowers who need assistance.

At this point, EU is concentrating on wholesale lending activities. It needs to increase its manpower to cover all lending activities and funds of the bank. Part of its efforts towards this end is to conduct training sessions for bank personnel on the role of EU and the EIA System, and consequently integrating the unit into the whole credit evaluation process. This is in line with the Memorandum of Agreement (MOA) dated 26 June 1992 mandating all government financial institutions to integrate environmental concerns in the credit process. In particular, it specifies that DBP and LBP should set up Environmental Units *"whose responsibility is to pre-screen, check consistency and completeness of documentation requirements and pre-evaluate PDs prior to endorsement to EMB."*[27] The objective of this is to create mini-DENRs in each of these institutions, thereby devolving the task of ensuring that proposals are consistent with environmental protection regulations and programs.

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[25] The CLF, or Countryside Loan Fund, is a credit window for participating financial institutions, funded by the International Bank for Reconstruction and Development.

[26] EMB. *Industry Environews.*

[27] MOA signed by DENR, DA, DAR, HLRB, PEA, NHA, DOT, DTI, BOI, ERB, OEA, NPC, PNOC, NEA, DPWH, DOTC, PPA, NWRB, NIA, MWSS, LWUA, LLDA, MMA, DOST, DILG, National Museum, DOH, LBP, DBP and NEDA on the EIA on 26 June 1992.

A concrete step towards this direction is the MOA between the bank and DENR. The MOA allows the bank to issue a loan for backyard and small scale industries that are granted exemption certificates from undergoing the EIS process, without having to wait for the certificate. The DENR has a list of projects that are given such exemptions. If the bank sees that the proponent is part of that list, then it can issue out the loan at once without having to wait for the DENR regional office to issue the exemption certificate. This is still under negotiation, though. Nevertheless, it is a positive step towards facilitating the credit process without compromising environmental concerns.

Other environment-related projects of the bank include:

- Philippines-Ozone Depleting Substances (ODS) Phase-out Investment Project. The ODS project aims to recycle, reduce and eventually phase-out consumption of ozone depleting substances. Land Bank co-implements this with the DENR with an allowable disbursement of US$14.74 million provided by the Montreal Protocol through the World Bank (WB). The WB has recognized the efforts of the Land Bank in coming out with Operating Policy Guidelines (OPG) which were described as well-studied and carefully planned. The guidelines served as the model for other recipient countries under the Montreal Protocol.[28]
- Integrated Protected Areas System (IPAS) Project. The IPAS is a project of the Global Environmental Facility worth US$20 million which aims to enforce conservation laws and resource management in ten priority sites identified as biologically important public lands, being habitats of rare and endangered plant and animal species. Alternative livelihood activities are promoted for community residents in the IPAS areas.
- Industrial Forest Plantation (IFP). This is a US$25 million development project funded by the Asian Development Bank (ADB). DENR is the lead agency in implementing IFP project.

3. LOCATIONAL CLEARANCES

The Local Government Code of 1991 provides for the drafting of local development plans by LGUs. In particular, Sec. 20 (c) states:

> *"The local government unit shall, in conformity with existing laws, continue to prepare their respective comprehensive land use plans enacted through zoning ordinances which shall be the primary and dominant bases for the future use of land resources: Provided, That the requirements for food production, human settlement and industrial expansion shall be taken into consideration in the preparation of such plans."*

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[28] EMB. *Industry Environews...*

Prior to the Code, the Housing and Land Use Regulatory Board (HLRB) was authorized to *"promulgate zoning and other land use control standards and guidelines which shall govern land use plans and zoning ordinances of local government"* and to *"review, evaluate, approve or disapprove comprehensive land use development plans and zoning ordinances of local governments"*. Thus, HLRB was empowered to issue a Locational Clearance for projects proposed in a particular area. On the other hand, LGUs were likewise required to issue clearances for any business activity in a particular area using their comprehensive land use plans as bases therefor. This duplication of clearances has been streamlined with the Code. The power to issue Locational Clearances has been devolved mostly to LGUs.

However, there are still provisions in subsequent laws that provide for exemptions regarding this issue. E.O. 72 s. 1993 section 3 states that:

> *"The authority of HLRB to issue locational clearances for locally significant projects is hereby devolved to cities and municipalities with comprehensive land use plans reviewed and approved in accordance with this Order. Such cities and municipalities shall likewise be responsible for the institution of other actions in the enforcement of the provisions thereof. For this purpose, they may call on the HLRB and such other NGAs for any legal and technical assistance.*
>
> *Based on established national standards and priorities, the HLRB shall continue to issue locational clearances for projects considered to be of vital and national or regional economic or environmental significance. Unless otherwise declared by the NEDA Board, all projects shall be presumed locally significant."*

The HLRB, therefore, is still mandated to issue locational clearances if the projects are deemed to be nationally/regionally and economically/environmentally significant. The NEDA Board determines what these projects are.

4. REGULATIONS FOR WATER QUALITY ASSURANCE

Standards of water quality are set by PD 1151. Section 18 specifically states that:

> *"The National Pollution Control commission shall prescribe quality and effluent standards consistent with the guidelines set by the National Environmental Protection Council and the Classification of waters prescribed in the preceding sections, taking into consideration, among others, the following:*
>
> *a) the standard of water quality or purity may vary according to beneficial uses; and*

b) the technology relating to water pollution control."

On the other hand, DENR Administrative Order (DAO) 34 s. 1990 classifies Philippine waters into 5 classes, from drinking water to industrial water supply. Coastal and marine waters are classified into four, according to use. Included further are water quality criteria for:

- surface waters;
- conventional and other pollutants contributing to aesthetics and oxygen demand for fresh waters;
- toxic and other deleterious substances for fresh waters;
- conventional and other pollutants affecting aesthetics and exerting oxygen demand for coastal and marine waters; and
- toxic and other deleterious substances for coastal and marine waters.

Five sources of water pollution have been identified: (1) domestic sewage and wastes; (2) industrial effluents; (3) agricultural runoffs; (4) oil discharges and accidental spills; and (5) mine tailings.[29] For each of these, regulations are provided to protect waters therefrom. DAO 35 s. 1990 states that no new industrial plant with a high waste load potential will be allowed to discharge its wastes into a body of water where *"dilution or assimilative capacity of said water body during dry weather condition is insufficient to maintain its prescribed water quality according to its usage or classification."* Furthermore, it prohibits any person from discharging industrial effluents into bodies of water or through canals or pumps except upon approval of the DENR Secretary.

Section 11 of the same DAO defines the maximum quantity to be discharged into the water. It states that guidelines which specify the maximum quantity of any pollutant or contaminant that may be allowed to be discharged into the body of water shall be provided by the Secretary. Although this section applies to industrial effluents, it is not limited to such. In implementing these regulations, the government used the AC, PO, CDO and EIA mechanisms. The Locational Clearance and monitoring of LGU and HLRB are also significant to ensure the implementation of the DAO.

Meanwhile, PD 1152 controls agricultural runoffs from fertilizers and pesticides by regulating the production, utilization, storage and distribution of hazardous, toxic and other substances. The Fertilizer and Pesticide Authority, created under PD 1144, monitors compliance of this law. It can restrict or ban the use of any pesticide in any area if it is deemed hazardous. It can further prevent importation of agricultural commodities containing pesticide residues that are beyond tolerance levels. Finally, it can conduct inspections on the establishment of pesticide handlers to ensure that safety rules and anti-pollution regulations are

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[29] Ibid.

followed. Penalty for violations is *"penal servitude of not in excess of one year or a fine of PhP5,000.00 but not more than PhP10,000.00."*[30]

PD 1152 further provides for cleanup operations, which are the responsibility of the polluter at his/her own expense. The government can conduct the cleanup and charge it to the polluter if the latter fails to perform the operations.

The National Operations Center for Oil Pollution (NOCOP) was created to monitor oil spills. It is mandated to call and coordinate activities of other agencies for cleanup operations and negotiate with local companies for use of oil containment and recovery facilities. PD 979 prohibits the discharge, dumping or deposit from any sea- or land-based sources of oil, noxious gaseous and liquid substances, liquid refuse or material of any kind into navigable waters, except in *"cases of emergency imperiling life or property, or unavoidable accident, collision, or stranding or in any cases which constitute danger to human life or property or a real threat to vessels, aircraft, platforms, or other manmade structure, or if dumping appears to be the only way of averting the threat and if there is probability that the damage consequent upon such dumping will be less than would otherwise occur, and except as otherwise permitted by regulations prescribed by the NPCC or the Philippine Coast Guard."*

PD 979 further states that the Philippine Coast Guard (PCG) and the DENR are jointly responsible for enforcing all laws that pertain to marine pollution. It was arranged that the PCG would be responsible for sea-based sources and the DENR would take care of land-based sources. The MOA that formalizes this arrangement has not been signed though, due to some disagreements.[31] This has caused jurisdictional issues to ensue.

5. EFFLUENT STANDARDS

PD 1152 contains the standards against which effluents are measured. In particular, it includes standards for the following:

- toxic and other deleterious substances;
- conventional and other pollutants in protected waters, inland waters and coastal waters;
- BOD applicable to old or existing industries producing strong industrial wastes; and
- new industries producing strong industrial wastes.

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[30] Section 10, PD 1144

[31] IEMP. Policy Study #2/10: Analysis of Current Regulatory Programs for Pollution Management, Volume II Appendix A. Manila: 27 March 1995.

Parameters are set in DAO 34 s. 1990. Industries are further classified into 11 categories according to the nature of effluent generated. The approved methods of analysis are specified in the Order.[32]

6. WASTE MANAGEMENT REGULATIONS

PD 1152 provides for an integrated waste management regulation from waste source to methods of disposal. Section 42 contains the guidelines for sound, efficient, comprehensive and effective waste management which will encourage, promote and stimulate technological, educational, economic and social efforts to prevent environmental damage and unnecessary loss of valuable resources through recovery, recycling and reuse of wastes and waste products.

Solid waste is disposed of by a number of methods: sanitary landfill, incineration, composting and others as may be approved by competent government authorities. The requirements are:

> *"Sec. 46. Sanitary Landfills. - Local governments, including private individuals, corporations, or organizations may operate or propose to operate one or more sanitary landfills. Any entity proposing to operate a sanitary landfill shall submit to the appropriate government agency an operational work plan showing, among other things, a map of the proposed work location, disposal areas for rubbish, garbage, refuse and other waste matter; and the equipment or machinery needed to accomplish its operations. In no case shall landfill or work locations under this Section be located along any shore or coastline, or along the banks of any rivers and streams, lakes throughout their entire length, in violation of any existing rules and regulations."*
>
> *"Sec. 47. Incineration and Composting Plants. - The installation and establishment of incineration or composting plants or the alteration/ modification of any part thereof shall be regulated by the local government concerned in coordination with the [DENR]."*
>
> *"Sec. 48. Disposal Sites. - The location of solid waste disposal sites shall conform with: existing zoning; land use standards and pollution control regulations."*

It is prohibited to dump or dispose wastes into the sea or on any body of water in the Philippines unless the PCG or DENR permits so due to immediate or imminent danger to life. Open dumping, though, is not prohibited in the Environmental Code.

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[32] Ibid.

Liquid waste disposal should be treated physically, biologically or chemically before disposal. Guidelines in doing so are provided in PD 984.

PD 856 or the Code on Sanitation has rules on wastes disposal for restaurants, markets, abattoirs, schools and industrial establishments. It specifies the minimum requirements in operating sewage treatment works, septic tanks and disposal of septic tank effluent drainage. Finally, it includes special precaution for human waste from hospital patients given high doses of radioactive isotopes. This precaution, however, is limited to provision of separate facilities and flushing the toilet three times after use. No special treatment and methods of disposal are provided for hospital waste.

RA 6969 (Toxic Substances and Hazardous and Nuclear Wastes Control) defines hazardous wastes to be *"substances that are without any safe commercial, industrial, agricultural or economic usage and are shipped, transported or brought from the country of origin for dumping or disposal into or in transit through any part of the territory of the Philippines."* This includes by-products, side-products, process residues, spent reaction media, contaminated plant or equipment or other substances from manufacturing operations and as consumer discards of manufactured products which present unreasonable risk and/or injury to health and safety and to the environment. Their disposal is specified as well. Section 2 states that:

> *"It is the policy of the State to regulate, restrict or prohibit the importation, manufacture, processing, sale, distribution, use and disposal of chemical substances and mixtures that present unreasonable risk and/or injury to health or the environment; to prohibit the entry, even in transit, of hazardous and nuclear wastes and their disposal into Philippine territorial limits for whatever purpose; and to provide advancement and facilitate research and studies on toxic chemicals and hazardous and nuclear wastes."*

PD 825 deals with garbage disposal. It requires all citizens and residents of the Philippines to clean their own surroundings, yards and gardens, canals, roads, or streets within their premises. It also states that *"all garbage, filth or other waste matters, shall be placed in the proper receptacle for the disposition thereof by garbage collectors."* Penalties for violating this law include imprisonment of not less than five days nor more than one year or fine of PhP100.00 to PhP2,000.00, or both. The LGU can further pass local ordinances for strict enforcement and monitoring of the said rule.

RA 6969 contains strict regulations on activities dealing with hazardous wastes. For chemicals and chemical substances, the DENR Secretary or his duly authorized representative is directed to come up with an inventory of chemical substances which are stored, imported, exported, used, processed, manufactured or

transported in the country, to be included in the Philippine Inventory of Chemicals and Chemical Substances (PICCS). Those that pose unreasonable risk or hazard to public health or the environment may be the subject of a Chemical Control Order (CCO) and their use will either be prohibited, limited, or subject to controls or conditions to abate or minimize risks or hazards to public health and the environment.[33]

If a chemical is to undergo any of the activities mentioned above and is not in the PICCS, it has to apply for a permit from DENR. If it is subject to a CCO, DENR may issue conditional permits specifying the limit or controls therein or it may subject the chemical to testing. The test results will determine the denial or issuance of the conditional permit. Exemptions from such are:

- those to be used in small quantities solely for experimental or research and development purposes;
- those that are reaction intermediates which do not leave the closed production system or undergo intermediate storage during the reaction process; and
- chemical substances regulated by laws other than RA 6969.

7. CEASE AND DESIST ORDERS

Pollution Adjudication Board (PAB)

The PAB was created under EO No. 192 which provided for the reorganization of the DENR and created attached agencies and bureaus. It originated from the now defunct National Pollution Control Commission (NPCC), which was tasked to:

- impose Cease and Desist Orders (CDOs) on two grounds:
    1. when there is immediate threat to life, public health, safety or welfare, or to animal or plant life; or
    2. when the waste or discharge exceeds the allowable standards set by the Commission.
- order closure of a firm for nonpayment of fines; and
- make final decisions which may be appealed only to the Court of Appeals on questions both of facts and law, or to the Supreme Court on questions of law.

These functions were divided between the PAB and the DENR Regional Offices. PAB was given the quasi-judicial powers, while the regulatory functions were given to the Regional Offices. Furthermore, the PAB is authorized to impose administrative penalties for violations of PD 984 (Pollution Control Law), while the DENR Secretary can impose penalties for violations of PD 1586 and RA 6969.

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[33] Ibid.

Cease and Desist Orders (CDOs)

With respect to CDOs, Sec. 7 (a) of PD 984 states:

> *"Public Hearing - Public hearings shall be conducted by the Commissioner, Deputy Commissioners or any senior official duly designated by the Commissioner prior to issuance or promulgation of any order or decision by the commissioner requiring the discontinuance of discharge of sewage, industrial wastes or other wastes into the water, air or land resources of the Philippines as provided in this Decree:*
>
> *Provided, that whenever the commission finds a prima facie evidence that the discharge sewage or wastes are of immediate threat to life, public health, safety or welfare, or to animal or plant life, or exceeds the allowable standards set by the Commission, the Commissioner may issue an ex-parte order directing the discontinuance of the same or the temporary suspension or cessation of operation in the establishment or person generating such sewage or wastes without the necessity of a prior public hearing. The said ex-parte order shall be immediately executory and shall remain in force until said establishment or person prevents or abates the said pollution within the allowable standards, or modified or nullified by a competent court."*

In issuing CDOs, the Regional Office conducts technical conferences, prepares a Report of Inspection (ROI) with laboratory analysis showing emission or effluent exceedances and submits the report to PAB which in turn determines whether a CDO would be issued or not.

In some cases, the PAB issues a Temporary Lifting Order (TLO) after a CDO is imposed. This is done after the polluter commits to submit the following:

- the pollution control scheme or the plans and specifications for the anti-pollution device, with an estimate of cost for its installation/repair and the length of time required;
- performance bond equivalent to 25% of the estimated cost of installation/repair of the pollution control device to guarantee its completion within the time specified; and
- interim measures to mitigate pollution during construction period.

8. FINANCIAL INCENTIVES OFFERED BY DENR

Until 1984, PD 1152 Section 56 contained investment incentives for environmental investments including a 50% tariff relief and tax credit on imports of pollution control equipment. This incentive, however, expired and has not been

reinstituted because it served as a loophole for companies to evade tax payments for equipment that was not necessary for pollution control.[34]

DAO 17 on "Guidelines Governing Voluntary Participation in Pollution Management Appraisals of the IEMP" provides a moratorium on CDOs for companies that implement PMA recommendations. This now serves as an incentive for pollution prevention investments, although at this point, the agency is still in the process of disseminating information on new technologies, particularly on waste minimization schemes, introduced by the project.

The BOI provides incentives for new and expanding companies, one of which is tariff exemption for environmental projects that deal with environmental conservation and protection or environmental support facilities. Moreover, if the company locates in areas outside of Metro Manila, other incentives such as tax holidays are provided. Unfortunately, these incentives are limited to companies that are either new or expanding. Some industries have complained that they could not avail of these incentives for putting up APDs, even if these are new, if they are to be used for old plants. This does not solve existing pollution problems, albeit it attempts to lessen their increase.

C. Trade and Investment Policies

1. INVESTMENT POLICY

The traditional investment policy in the country consisted of granting fiscal incentives to selected activities. Other components of the policy included promotion of exports, foreign investment and setting up of industrial estates.

The Investment Incentives Act of 1967 listed priority areas that were selected and had "measured capacity" established for each industry. These incentives were geared mainly for production for the domestic market. Additional incentives included tariffs and/or import control protection (i.e. import licensing requirement or outright import ban). In 1970, incentives were granted to non-traditional exports through the Export Incentives Act. In 1987, the Omnibus Investment Code (OIC) was passed which mandates the Board of Investments (BOI) to come up with an annual IPP. Only industries listed in the IPP would be eligible for incentives. The Code states that incentives are uniform, with minor exemptions, for exporters and non-exporters. Both receive exemption from taxes and duties on imported equipment and accompanying spare parts. Furthermore, an income tax holiday is given to replace the tax credits on net value added for domestic producers and a higher percentage of tax credit based on net local content for exporters. Again, this holiday is for both exporters and non-exporters.

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[34] IEMP. Policy Study #1: Financial Resources to Fund Environmental Investments. Manila: 1 December 1993.

The Medium-Term Plan encourages regional dispersal of industries to realize economic and equitable growth all over the country. The strategy towards this goal is the setting up of industrial estates (IEs) in the major growth centers of each geographical region. These can either be the regular IE for products either for export or domestic consumption, or the EPZ for products strictly for exports. Firms locating therein receive more fiscal incentives.

2. THE INVESTMENT PRIORITIES PLAN (IPP)

The IPP is the overall plan of the BOI to promote investments. It contains a list of specific economic activities that encourage investments. The BOI uses the set of incentives provided under EO No. 226 known as the Omnibus Investments Code of 1987 as the tool for attracting investments.[35]

The theme of the current IPP is "Global Competitiveness Through Countrywide Industry Dispersal". Global competitiveness is one of two goals of the MTPDP, the other being people empowerment. The second part of the theme is in line with the government's policy on regional industrial dispersal, whereby industries are encouraged to locate outside of Metro Manila partly to reverse migration trends and partly to disperse employment and growth opportunities in various industrial centers all over the country.

3. GOALS OF THE IPP

The goals of the 1996 IPP are:

- to further enhance global competitiveness of Philippine industrial products in the domestic and export markets with the introduction of new and superior technology;
- to increase exports by opening new market access opportunities;
- to support small and medium enterprise development and enhance industry's employment generating capability;
- to increase agricultural productivity for food self-sufficiency;
- to set up and upgrade infrastructure and support facilities necessary to promote agro-industrial and countrywide development;
- to ensure efficient environmental management and sustainable development of natural resources;
- to disperse industry and promote an environment that encourages transfer of technology, research and development; and
- to alleviate poverty particularly in the countryside.

[35] Board of Investments. 1996 Investment Priorities Plan. Metro Manila: March 1996.

4. PREFERRED AREAS OF INVESTMENT

The IPP contains a list of preferred areas for investment. These include:

1. export-oriented industries:

- those that exhibit a revealed comparative advantage and are capable of exporting at least 50% of their output for Filipino-owned industries, or 70% for foreign-owned industries, e.g. export producers, services for export, export trading, tourism, agro-export processing estates and activities supporting exporters;
- agro-industrial estates refer to land areas that are transformed primarily for the use of a community for export-oriented agricultural processing industries and services catering to these industries. The developer is required to provide paved roads, power and water supply, communication systems, common wastewater and sewage treatment facilities and solid waste disposal systems and drainage systems; and
- tourism projects include the operation of new tourist accommodation facilities, expansion and modernisation of existing facilities, the development of tourism estates and the operation of tourist buses.

2. catalytic industries:

- those that exhibit signs of having a revealed comparative advantage and have the potential of being competitive in the export market;
- for the manufacturing sector, the following are eligible under this category: fine jewellery, composite board, drugs and medicines, shipbuilding/ shiprepair/ shipbreaking, processed foods and cement; and
- for the agriculture sector, this covers industries involved in the production of planting materials, breeders, genetic materials and fingerlings.

3. industries undergoing industrial adjustment:

- those that were affected by the opening up of the Philippine market, i.e. by the restructuring of tariff; and
- industries under this category include textiles, organic chemicals, leather tanning/finishing, sugarcane plantation and mills/sugar refineries, packaging products, machinery and equipment, parts and components and coconut plantation and mills/coconut oil refineries.

4. support activities:

- infrastructure and services: industrial estates; industrial communities; power generation and transmission; common carriers; telecommunications;

industrial ports and agricultural services related to crops, livestock, fish production and post-harvest facilities;

- environmental support facilities: waste management/treatment/control and industrial tree plantation;
- research and development activities of any manufacturing firm as well as private firms and research institutions, as long as the project is endorsed by the Department of Science and Technology (DOST); and
- support to government priority programs: rice and corn production; production and processing of livestock and poultry; housing components for socialized housing projects; automotive parts and components; refined petroleum products; and social services such as the establishment of new educational or health institutions.

5. mandatory inclusions:

- industries covered by existing laws that entitle them to BOI incentives, e.g. the BOT Law, the Mining Act, the Iron and Steel Act and the ASEAN Industrial Cooperation Project which provides incentive grants to projects with ASEAN cooperation and have at least 30% national equity.

For the Autonomous Region in Muslim Mindanao (ARMM), additional priority investment areas are listed as identified by their Regional BOI. They are, however, covered by the same policies on registration and administration of incentives for industries in the rest of the country.

The Medium Term Philippine Development Plan (MTPDP) promotes the development of small and medium-sized enterprises for their contribution to employment generation, countryside development and the formation of new entrepreneurs. Additional incentives for SMEs include preparation of investment opportunity studies, matching of SME suppliers with assemblers and assisting in sourcing of finance. The target by the end of 1996 of at least 80% of registered firms will be SMEs. Furthermore, to encourage linkages among SMEs, the BOI provides an information exchange and assistance facility that identifies SME support companies of a registered enterprise.

5. CLASSIFICATION OF PROJECTS

Projects are classified according to type, i.e. whether they are new or undergoing expansion (additional capacity is provided by the firm). If a project is new, it can either have a pioneer status, i.e. those producing new products, or those employing new processes at least locally, or a non-pioneer status. For pioneer projects, foreign equity can be as much as 100%. For non-pioneer projects, a maximum of 40% foreign equity participation is allowed.

New and expansion projects are required to get an Environmental Compliance Certificate (ECC). All projects that involve handling, transport,

processing and/or storage of toxic, hazardous substances and/or nuclear wastes shall be subject to the Toxic and Hazardous Substances and Nuclear Wastes Control Act of 1990. Also, no project involving the importation of wastes for final deposition as a material of no economic value shall be eligible for registration.

6. PREFERRED GEOGRAPHICAL AREAS FOR INVESTMENT

The MTPDP identifies the poorest provinces in the country and labels them as Less Developed Areas (LDAs). Should industries locate in LDAs, additional incentives are given by the BOI, such as a six-year income tax holiday regardless of status or type of project and additional deductions from taxable income equivalent to expenses incurred in the development of necessary and major infrastructure facilities. This last incentive, though, is not granted to mining, forestry and mineral/forest products processing, since they would naturally locate in areas near the sources of their raw materials.

Regional industrial centers are further identified in the MTPDP. Each geographical region has one or two identified centers where industries are encouraged to locate. Some of these sites have delineated industrial zones and incentives to locate therein depending on the Authority managing the zone.

Corollary to this, incentives are limited for firms locating in congested urban centers, which are identified in the IPP. For those locating in Metro Manila, income tax holidays and capital equipment incentives are not granted, except for industries in existing IEs. Further exceptions are given if firms are involved in service-type projects with no manufacturing facilities, infrastructure and public utilities except power generation and expansion projects for export.

7. INCENTIVES IN THE IPP

Upon registration, firms can avail of the following incentives:

1. duty of 3% on imported capital equipment and its accompanying spare parts except for those locating in Metro Manila, unless exempted from the locational restriction

2. income tax holiday (ITH)

   - for export traders, subject to the following schedule:

     - new projects with a pioneer status for six years;
     - new projects with a non-pioneer status for four years;
     - expansion projects for three years; and
     - new or expansion projects in LDAs for six years regardless of status.

- limitations on ITH include:

  for mining activities:

  - exploration and development of mineral resources are not entitled; and
  - mining and/or quarrying without mineral processing are not entitled.

  for iron and steel:

  - manufacture of steel billets shall be entitled to a four-year ITH.

  cement:

  - a new cement project with a pioneer status with a capacity of at least 1 million metric ton per year shall enjoy a four-year ITH.

- modernization projects:

  - exemption from taxes and duties on imported spare parts;
  - exemption from wharfage dues and export tax, duty, impost and fees;
  - tax exemption on breeding stocks and genetic materials; and
  - tax credits.

- on domestic capital equipment and/or spare parts
- on tax and duty portion of domestic breeding stocks and genetic materials
- on raw materials and supplies

3. additional deductions from taxable income:

   - equivalent to 50% of wages for five years upon registration; and
   - 100% of wages if the firm locates in a less developed area.

4. non-fiscal incentives:

   - employment of foreign nationals for five years;
   - simplification of customs procedures for importation of equipment, spare parts, raw materials and supplies and exports of processed products;
   - importation of consigned equipment for an unlimited period; and
   - privilege to operate a bonded manufacturing/trading warehouse.

At present, incentives listed in the IPP are not industry-specific. They were originally meant for industries in the manufacturing sector. As the IPP evolved to cover more industries, the incentives were not changed accordingly. In the immediate future, the BOI, together with the Department of Finance (DOF) and the Department of Budget and Management (DBM), hopes to come up with a new list of incentives that would be more appropriate for each industry covered. A

possibility being considered is the provision of grants to certain preferred industries instead of the usual tax and other fiscal incentives. This is particularly true for small and medium-scale industries for which the IPP is designed.

D. Tourism Policies

1. THE PHILIPPINE TOURISM MASTER PLAN (PTMP)

The Department of Tourism (DOT) is the government agency tasked to plan and manage the tourism sector of the country. With the assistance of the World Tourism Organization and the UNDP, it formulated the PTMP, a long term plan containing strategies and programs envisioned to catapult the tourism sector to become one of the main dollar earners of the economy. Included are the priority sites for development along with the necessary policies and programs to promote these sites:

1) Northwestern Luzon;
2) Batangas-Taal-Tagaytay;
3) Northern Palawan;
4) Panglao-Balicasag Islands, Bohol; and
5) Samal-Talikud Islands, Davao.

The Philippine government recognizes that environmental considerations are given secondary importance to economic development. On the other hand, tourism has been deemed as vital in the government's economic recovery program. To achieve this, the environment would have to take on a more prominent role in planning, given that only in investing in environmental protection and management could tourism be promoted and be able to contribute to economic growth, since its quality is heavily dependent on the preservation of the environment. Thus, the symbiotic relationship between the two sectors implies that tourism can exert a mutually beneficial relationship with nature such that both can enjoy a certain amount of beneficial returns in the long run. The trend at the moment is to recognize that certain forms of development are destroying the environmental base on which they rely, thus prohibiting sustained economic development to materialize. Consequently, sustained tourism development could not be achieved unless environmental concerns are considered in all stages of government planning. From this concept, the term "ecotourism" was coined, which is predicated upon:

1) the development of models which set practical limits of acceptable environmental and social alterations;
2) active participation of the citizenry in the early tourism planning process;
3) integration of environmental education and ethics in all phases of the tourism planning process; and
4) recognition of the vital importance of natural and protected areas as an integral part of national and regional efforts towards environmental sustainability.

Along with this symbiotic relationship between tourism and the environment come certain risks posed by tourism development. The following have been identified:

1) the impact on land use through speculation in anticipation of development;
2) the impact of uncertainty on economic and social conditions attributed to nearby areas;
3) the impact on other planning activities and provision of public services; and
4) acquisition and condemnation of property from the project, with subsequent dislocation of families and businesses.

At the construction phase, some negative effects would include:

1) displacement of people;
2) land, water, air and noise pollution;
3) soil erosion and disturbance of natural drainage;
4) interference with the water table;
5) destruction of or damage to wildlife habitat, parks, recreation areas and historic sites;
6) aesthetic impact of construction activity and destruction of or interference with scenic values;
7) commitment of resources to construction; and
8) safety hazards.

Indirectly, tourism development affects the following areas:

1) contiguous land use;
2) regional development patterns;
3) demand for housing and public facilities;
4) impact on use of nearby environmental amenities;
5) differential usefulness for different economic and ethnic groups;
6) impact on lifestyles of increased mobility and other factors; and
7) impact of improved facility on transportation and related technological development.

Notwithstanding these, PTMP envisions to promote environmental management together with tourism development. Its underlying principle is that the cost to a country of a pervading yet backward environmental program is significant such that sustained tourism development will not materialize without a viable environmental sector.

In relation to other macroeconomic plans of the government, PTMP strategies were used as inputs in the MTPDP and the National Physical Framework Plan (NPFP). Both plans are drafted by inter-agency committees with NEDA coordinating both plans.

2. TECHNICAL REPORT ON THE ENVIRONMENT

Along with the PTMP, a technical report was prepared to provide the technical details of the contents of the plan. Part of this report is a section on the environment, the aims of which are to:

1) provide a broad scenario of the Philippine environment as a major consideration in the scope of future expansion of tourism in the country;
2) identify objectives and targets for the development of the environmental sector in line with those of the other sectors of the master plan;
3) set out the main environmental policies that need to be implemented in the short, medium and long term in order to establish a functional environmental framework for tourism development;
4) identify ways on how the action plan for the environment component in the master plan should be implemented by indicating the major activities to be undertaken, the strategies to be developed and the institutional framework required; and
5) identify the proper perspective and place for Philippine tourism within the context of the current local and worldwide environmental and conservation movement.

Based on these, guidelines for tourism planning and development were formulated:

1) consideration of critical environmental issues at the earliest phases of planning;
2) timely involvement of local communities in the tourism planning and development process;
3) compliance with applicable legislative procedures for protecting and enhancing the environment;
4) implementation of the best practicable means to mitigate adverse impacts of tourism activities on the environment, should specific regulations not exist;
5) adherence to the concept of ecotourism by implementing steps and alternatives to avoid or protect areas of high environmental sensitivity;
6) design of facilities and occupancy standards which blend with existing natural features and within the effective carrying capacity of the environment;
7) incorporation of a monitoring program and a regular audit of environmental performance in the environmental management plan;
8) provision of adequate training of specific personnel on the potential implications of tourism activities to equip and motivate them to act and make decisions within the purview of environmental ethics;
9) incorporation of educational activities in all phases of tourism development; and
10) creation of fora whereby tourism and environmental managers work together to achieve common goals rather than compete like irrevocable opponents.

Based on these guidelines, and on the underlying principle that tourism activities should be sustainable, the Master Plan contains the following features:

1) integration of economic and environmental consideration into the decision-making process;
2) strengthening and provision of the required expertise on environmental management in the existing machinery for planning from the local levels;
3) strict compliance to and support in the strengthening of the EIS systems and cost-benefit analysis in order to ensure the proper pricing of natural resources, while promoting conservation of biodiversity and the rehabilitation of degraded ecosystems;
4) encouragement and support of training of personnel at all levels in the various aspects of environmental management to facilitate permeation of environmental consciousness in all DOT agencies;
5) development of site-specific tourism plans based on sound understanding of the ecosystem dynamics on which natural resources are based;
6) development of a databank on resource and environmental information to facilitate decisionmaking;
7) focus on rural development which induces growth in these areas;
8) promotion of environmental education;
9) strengthening of citizen's participation; and
10) full support of programs and efforts of both the public and private sectors on sustainable development of the environment and its resources

The PTMP supports the national strategy to develop a broad national public awareness program in support of conservation of protected areas. With this, it tasked the DOT to work hand-in-hand with the Integrated Protected Areas System (IPAS) in incorporating protected areas into the national planning for tourism development.

3. ACTION PLAN FOR ENVIRONMENTAL PROTECTION

The main objective of PTMP is to develop and promote Philippine tourism to ensure that the present use of environmental resources does not prejudice the ability of future generations to similarly use these resources. In this regard, the Action Plan for Environmental Protection was formulated.

The principal objective of the Action Plan is the development and protection of the terrestrial, aquatic and aerial environments specifically in regions where impacts from tourism activities are eminent. The plan envisions to provide a functional framework for an environmentally-sound, comprehensive and pragmatic approach to maintain the high quality of the environment upon which a viable tourism industry is predicated. The priority areas for tourism development are the same areas for which the Action Plan will initially be used. It will, however, be extended to cover other areas in the future, as may be determined by the government.

The Action Plan aims to achieve the following:

1) assessment of the current state of terrestrial, coastal, marine, freshwater and aerial environments specifically and initially for the tourism areas, including the evaluation of all tourism-based activities as they affect environmental quality;
2) management of tourism-related development activities which may have impacts on environmental quality or on the protection and use of renewable resources on a sustainable basis; and
3) development of appropriate linkages and coordinating measures for the successful implementation of the Action Plan.

In implementing the Action Plan, the following activities have been conducted:

1) national and regional consultative meetings on environmental protection;
2) tourism planning seminars which incorporate environmental concerns;
3) pollution abatement seminars and training courses;
4) workshops and in-service training courses in Environmental Impact Assessments;
5) seminars and workshops on the Integrated Protected Areas System; and
6) legislative assemblies and public hearings on critical issues on protected areas.

An assessment of the environment shall be conducted and will be composed of the following activities:

1) a quantitative and qualitative description of environmental setting;
2) prediction and assessment of impacts on the biological, air, water, noise, cultural and socio-economic environment; and
3) survey of national and regional capabilities and activities as they relate to tourism development.

At this point, baseline data are inadequate and incomparable with the areas of concern. Due to this, a coordinated basic and applied national and regional program on environment vis-à-vis tourism will be developed as the initial step towards environmental protection and enhancement. Experts shall be identified and will be tapped to provide the necessary assistance. Other government plans related to the Action Plan shall be considered as well.

Intensive training programs and technical support from local and international environmental scientists shall be solicited, the contents of which will include:

1) the role of tourism in environmental protection;
2) the role of the environment in the viability of the tourism industry;
3) standardization of assessment procedures and techniques to measure the effects of planned activities on populations, communities and ecosystems;

4) application of quality control in the analytical procedures among participating institutions;
5) training of tourism personnel with the required capabilities through existing national and regional institutions with the required capabilities; and
6) compatibility in the methods for the handling, validation and regional or national evaluation of data gathered through the above activities.

Aside from environmental experts, social scientists and economists shall be tapped to assist due to the fact that environmental problems are closely linked with socio-economic concerns particularly in developing countries. It is recognized that sustainable socio-economic development can be realized only if environmental concerns are given priority. Hence, the following activities shall be undertaken:

1) survey and preparation of a compendium of institutions in the region with active concerns in environmental protection; and
2) identification of existing landmark, regional and national policies and programs which demonstrate sound and pragmatic environmental management guidelines and practices that are directly or indirectly related to tourism, such as:

- No. 1151, or the Philippine Environmental Policy;
- No. 1152, or the Philippine Environmental Code;
- Philippine Strategy for Sustainable Development (PSSD); and
- National Integrated Protected Areas Systems Act (NIPAS).

A national and regional coordinating mechanism will be established through the efforts of the agencies concerned. In this regard, training for managers and policy-makers in environmental management relative to tourism shall be provided. Public awareness campaigns on environmental issues in the region shall be undertaken on a regular and systematic basis.

The most crucial requirement for achieving the policies and targets contained in the PTMP is infrastructure development. Gateway centers or key destination areas shall be developed. Gateway centers refer to locations that serve as entry or transit points for international and domestic tourists. It can be noted that all centers save for one (Manila) are located in coastal areas. This is implied in all aspects of tourism development, i.e. accommodation development, air, water and land transportation, additional infrastructure is badly needed. However, the plan is clear on the aspect of sector's sustainability. Suitability studies, assessment of capacity and density standards, site planning standards, housing standards, utility standards such as solid waste disposal and sewage treatment and involvement of affected communities are all taken into consideration in undertaking tourism development activities.

Furthermore, the Plan specifically states that any development adjacent to sensitive coastal areas and coastlines must respect the beach's natural function as an energy dissipation system which provides a dynamic equilibrium and thus gives

protection to the inland against storm surge, particularly during periods of rough weather. Any change in the natural coastal environment must be designed on the basis of a comprehensive study of currents/floods/ebbs and the coral reef structure.

4. CONFLICTS WITH OTHER SECTORS

A significant government policy is that all coastal areas are declared as tourist zones. Hence, any industrial activity to be undertaken in a coastal area will have to get approval from DOT. In line with PD 564, it can concur or reject any application therefor, especially resource-extractive industries. PTA Circular No. 10 specifies that *"the construction, installation or operations of any industrial or commercial activity may be approved by the (Philippine Tourism) Authority... subject to the following conditions: a) the establishment is not hazardous and non-polluting in nature..."*[36] The Batangas Bay area is a case in point. A shipbuilding company applied for a permit with the LGU concerned, who in turn asked for comments from the DOT. The latter rejected the proposal as it was deemed to be destructive to the coastal area. As a result, the company had to look for another venue for its shipbuilding activities.

One of the major conflicts that the DOT gets into is with HLRB, the agency in-charge of coordinating the drafting of the Provincial Physical Framework Plans (PPFPs). The PPFP contains a tourism component. However, there are certain PPFPs that listed industries which are not compatible with tourism development. The PPFPs are still being drafted at this point, and this is one policy conflict that the final drafts hope to resolve.

5. THE BORACAY MASTER PLAN: AN EXAMPLE

Some designated tourist areas have been marked as experiencing greater environmental deterioration. The government has created ad hoc committees for most of these areas, while for some of them, Master Plans are being prepared. Boracay Island is in the most advanced stage of planning. Current efforts are focused on the implementation of the Boracay Environmental Infrastructure Project which covers the following components:

- potable water supply;
- solid waste management; and
- sewerage treatment.

A loan agreement with the Overseas Economic Cooperation Fund (OECF) was entered into in 1995 to finance the Infrastructure Project.

Moreover, the DENR has established an Environmental Guarantee Fund (EGF) for Boracay, involving the DENR, EMB, the Municipality of Malay, the private

[36] PTA Circular No. 10. General Regulations Governing Activities in Tourist Zones.

sector and NGOs in the area. The EGF is envisioned to provide the Island with sustainable financing to be able to maintain and further develop the island into a prime tourist attraction worldwide.

E. Cabinet Committee on Maritime and Ocean Affairs

Cabcom was formed through EO No. 186 entitled "Expanding the Coverage of the Cabinet Committee on the Law of the Sea and Renaming It as the Cabinet Committee on Maritime and Ocean Affairs."[37] The Cabcom is tasked to implement the United Nations Convention on the Law of the Sea (UNCLOS) and harmonize domestic laws and regulations with the Convention prior to its entry into force on 16 November 1994.

The Department of Foreign Affairs (DFA) provides secretariat support to the Cabcom. It can call on any government office for assistance. It further encourages the participation of government and private academic research institutions involved with marine and ocean-related concerns, through the marine research community (MARC). There are four MARCs operating under the Cabcom:

- Law, Administration and Enforcement;
- Marine Economy and Technology;
- Diplomacy and Security; and
- Environment, Coastal Management and Education.

Recommendations from the MARCs are submitted to the technical committee composed of the various government agencies that deal directly or indirectly with marine-related issues. These in turn are submitted to Cabcom for approval.

Cabcom is tasked to formulate policies regarding maritime concerns. In this connection, the National Marine Policy (NMP) was formulated. It is primarily a developmental and management program which calls for a shift in development policy that emphasizes the Philippines' status as an archipelagic state. This is due to the fact that the country has more water than land, yet development efforts are concentrated on land-based activities. The UNCLOS is a significant input to the NMP especially in determining the geographical coverage of marine policy.

The NMP consists of the following strategies:

1. Emphasize the archipelagic nature of the Philippines in development planning;
2. View coastal marine areas as a locus of community, ecology and resources;
3. Implement UNCLOS within the framework of the NMP;

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[37] Cabinet Committee On Maritime And Ocean Affairs. National Marine Policy. Foreign Service Institute: Pasay City, Metro Manila, Philippines, January 1995.

4. Coordinate and consult with concerned and affected sectors through the Cabcom; and
5. Address the following priority concerns:

- extent of national territory;
- protection of marine ecology;
- management of marine economy and technology; and
- maritime security.

The following basic premises are used for addressing these concerns:

- On the extent of the national territory

UNCLOS does not obligate the Philippines to redraw its baselines which are based on existing laws. The Treaty of Paris is still an issue, but the extended maritime jurisdictions of the country are well-established under present laws and customary international law. They are not dependent on UNCLOS because the norms on which they are based had become part of customary international law prior to the enforcement of UNCLOS.

- On the marine environment

This refers to proper management of coastal resources and environment protection against pollution from both marine and land-based sources.

Towards this end, the strategies in the NMP are:

1. Explore, develop and manage offshore/oceanic resources on the principle of sustainable development;
2. Develop and manage coastal resources within an integrated coastal zone management framework;
3. Develop and enhance national marine consciousness through a comprehensive information program;
4. Encourage the development of a marine research program;
5. Adopt the "polluters pay" principle in ensuring the protection of the marine environment; and
6. Ensure the high quality of maritime professional schools and other institutions for training experts in maritime-related issues.

- On marine economy and technology

This pertains to the management of marine resources, upgrading of infrastructure and development of information technology primarily for the production of competitive marine products and services. The strategies for this are:

1. Promote a viable marine fisheries management program;
2. Provide continuous and adequate supply of energy;
3. Develop technological capabilities in the maritime sector;
4. Promote investment programs in marine areas;
5. Harness information technology to serve NMP goals;
6. Enhance regional economic and technical cooperation in marine and ocean affairs; and
7. Strengthen trade policies supportive of maritime issues.

- On maritime security

The NMP defined maritime security as the "state wherein the country's marine assets, maritime practices, territorial integrity and coastal peace and order are protected, conserved and enhanced."[38]

To achieve this, the NMP states that the State should:

1. Promote and enhance maritime security as a key component of national security;
2. Provide a stable and peaceful socio-political and administrative environment in the country that fosters sustained profitability and growth for maritime industries;
3. Protect and defend the integrity of the Philippines' marine resources;
4. Ensure preparedness for and effective response to natural calamities and man-made disasters; and
5. Provide leadership and guidance on proper and effective collection, processing and distribution of strategic information supportive of the NMP.

With regard to the MARPOL Protocol, DFA said that there are problems in ratifying this because staff work on this has not been completed, creating a huge bureaucratic/administrative backlog. Furthermore, industries are hesitant to undertake the commitments specified in the Protocol, such as establishment of receptacles of waste disposals and oil spills. More consultations with the private sector are being held to convince them to support the Protocol.

Cabcom proposed the creation of a full-blown Department of Marine Affairs that will take care of planning and implementing strategies and programs in the marine sector. This would further solve the problems created by policy and agency conflicts, which have caused a number of maritime accidents. The Department would hopefully bring about policy integration within the government.

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[38] Ibid.

II. Government Policy Gaps and Conflicts that Inhibit Investments in Marine Pollution Prevention and Management

Despite the existing plans and programs that attempt to solve marine pollution problems in the country, there are certain policy gaps and conflicts that still inhibit investments in the sector. Some government activities have also been criticized as exacerbating problems relating to marine pollution. The following discussion deals with these particular functions and policies that come into conflict with the objective of efficiently solving pollution problems in the country.

A. Gaps and Conflicts in the Present Planning Structure

There are a number of structures involved in the formulation of the development plan of the Philippines. The National Economic and Development Authority (NEDA) is the central planning agency of the government which serves as the Secretariat for the whole planning structure. There are various inter-agency committees involved: the Development Budget Coordinating Committee; the Investment Coordinating Committee; the Committee on Tariff and Related Matters; the Infrastructure Committee; the Social Development Committee; and the Regional Development Councils (RDCs).

1. PLANNING PROCESS

The planning process in the Philippines begins when NEDA issues a set of planning guidelines for all sectoral agencies, local government units, inter-agency committees and subnational development councils for their respective plans. The guidelines contain the rationale, legal basis, vision, guiding principles, organizational structure/institutional arrangements, activities and timetable for the Plan. Various sectoral subcommittees are formed to draft the sectoral portions of the plan.

Each agency and LGU then formulates its respective sectoral or local plan. The RDCs translate the national guidelines for subnational development bodies. These are then integrated into regional development plans. The NEDA Regional Offices are in-charge of ensuring consistency within the regional plans. The NEDA Central Office, on the other hand, consolidates all sectoral and regional plans to form the medium term development plan.

Public consultations and hearings are conducted to get feedback from the private sector and the NGO and PO community for further enhancement of the plan.

An executive order is issued to adopt the plan. The EO also contains mandates on periodic assessment and updating of the Plan. The annual monitoring

and socio-economic assessment of the Plan is done through the preparation of the Philippine Development Report.

2. CRITIQUE WITH RESPECT TO SUSTAINABLE DEVELOPMENT (SD) OBJECTIVES

As shown above, the present planning process is largely sectoral in perspective. Although SD concerns are multi-sectoral in nature, they are not consciously incorporated as such in the development plan. Only on the regional level have there been efforts to create a multi-sectoral approach to planning through the RDCs. However, these are still lacking in SD perspectives because local plans are viewed as mere subsets of regional plans rather than as independent, critical components of the process. Note that one of the principles of SD is its emphasis on planning at the community level in line with the ecosystems perspective.

One of the tasks of the Philippine Council for Sustainable Development (PCSD) is to ensure that SD principles are incorporated into the development plan at all levels. At present, there are no structures at the subnational level that would ensure that such is being done. Its breakdown into subnational levels is still under study. There is a proposal, though, for the creation of a committee within the RDC framework, which may allow PCSD to become part of the planning process. Furthermore, the PCSD has not yet developed into a full-blown formal body that would give substantially input to the formulation of the plan, or to the framework and planning guidelines at the very least. Given its scope, the SD framework should already be considered as the framework for the development plan itself.

A major effort in SD planning is the conduct of the Environmental and Natural Resources Accounting Project (ENRAP), which aims to come up with a realistic valuation of stock and damages to the environment. This could serve as a powerful analytical tool for planning purposes. Likewise, the EIA could be enhanced and expanded in scope to serve as the main tool for planning. The EIA process has been existing in the country for the past two decades. However, it has only been used for regulatory purposes, whereby it is used to screen projects that are in the final stages of formulation, rather than being used for the conceptualization and design stages.

The present practice on public consultation was branded as an attempt to persuade people to support decisions that have already been made. In other words, decisions, while being formulated and made, do not factor in public comment from the start. The true spirit of SD should include the people in the entire decision-making process. Corollary to this, it is recommended to include the public in the monitoring and implementation aspects of the plan. If their roles in planning are to be increased, they should be given more responsibilities to ensure that the plan is being implemented. This increases their accountability, thereby relieving government from solely undertaking this task.

B. EIA System

The EMB, which is primarily responsible in implementing the EIA, is a staff bureau under the DENR. This set-up presents problems in efficiently conducting the EIA, because the EMB has to go through the Undersecretary, then the Secretary of line agencies, to get needed information from the respective Regional Offices. Neither can they direct the Regional Offices to do activities in connection with the conduct of the EIA, such as conducting tests and monitoring. Likewise, the Regional Offices have to go through the same bureaucratic process in dealing with the EMB.

On 26 July 1993, this process was simplified with the issuance of DAO 49 s. 1993 entitled the "General Functional Relationships Among Selected Central and Regional Offices, Bureaus, Units and Other Department Officers Following the Issuance of Special Order 863". This provided direct links along functional lines as long as Undersecretaries were furnished with copies of pertinent information.[39] Unfortunately, this was revoked in a Memorandum Circular dated November 1993 and the old practice was reestablished.

Certain exemptions from submitting an EIS are granted to companies if they meet the following:

1. discharges minimal amount of wastes and the management of such wastes is relatively easy;
2. has capitalization of not more than PhP500,000.00; and
3. employs not more than 20 persons.

These companies though would still have to secure exemption certificates from the EMB. Hence, the DENR determines which companies are exempted and which are not. Even with the issuance of these certificates, the DENR may still impose certain conditions requiring the proponent to institute necessary remedial measures.

PD 1586 further states that EIA shall be required on projects and/or areas declared by the President as environmentally critical. Proclamation 2146 specifies which areas and projects these are. This implies that those not included would be exempted. However, DAO 21 enumerates which projects are exempted from the EIA process. This creates a list of projects that are not exempted but may be deemed critical, albeit not being part of the environmentally critical list. The legal issue that needs to be settled is whether the administrative order of DENR takes precedence over the Presidential Decree or the Presidential Proclamation. Although the DAO may seem to be more environmentally sound because more projects are covered by the EIA system, there should be an amending legislation so the system can be properly implemented.

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[39] Ibid.

Another issue to note is the procedure in applying for a motion for reconsideration in case an ECC is denied. The proponent may file a motion for reconsideration to the EMB Director (if the project is an ECP) or the Regional Director (if the project is in an ECA) within 15 days upon receipt of the denial notice. They may further appeal to the Office of the Secretary within 15 days of receipt of the order or denial of the motion for reconsideration. Since the Secretary can either grant or deny the issuance of the ECC, and the EMB Director and the Regional Director are unlikely to go against the decision of the Secretary, the motion for reconsideration should be filed directly with the Office of the Secretary. The first round of filing of a motion for reconsideration may be useless, and it only delays the final decision from the Secretary.

The Review Committee, which performs the evaluation of the EIS, is selected from *"the pool of experts/area subject specialists"* as provided under DAO 21. However, no criteria for the selection is provided.[40] The major technical decisions rest solely on the Committee, making it critical in the impartial conduct of the process. Furthermore, the selection of members is done by the EMB Director whose discretion is almost absolute. Although the Director may be considered appropriate for the position, the selection process for membership of the Committee should be subjected to more transparent and impartial guidelines, considering the strong implications of its statements in implementing the EIA.

Finally, public hearings are conducted but only on a voluntary basis, depending on the discretion of DENR officials. This is the only venue where NGOs and other citizen groups can participate in the system. Social acceptability has developed into a critical issue and has been used by the public in either supporting or denouncing a project. In line with the principles of Philippine Agenda 21, making public hearings mandatory should be given due thought.

An issue related to the EIA process is the lack of technical expertise, more particularly at the local level, in conducting proper assessments. A major problem is the lack of incentives for "experts", or even potential ones, to enter into government service, due to the huge discrepancy between public and private wage structures. Providing trainings and specialization for those already in public service would make these people more marketable, hence would be more inclined to leave right after gaining their newly acquired skills. This causes a high turnover rate, a problem that has beset the EMB for quite some time now.[41]

C. Issuance of Permits

The PO is issued after three requirements have been met:

1. prior issuance of the AC;
2. inspection showing the APD is properly maintained and is still sufficient; and

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[40] Ibid.

[41] Entec Europe Ltd. Toxic and Hazardous Waste Management Project. Metro Manila: January 1996.

3. the APD complies with the standards.

Should any of the requirements be absent, a temporary permit valid for six months is issued. According to DENR personnel, more temporary permits are being issued than regular ones, not because industry has been remiss in fulfilling the requirements, but because the DENR is unable to conduct timely inspection and testing. Lack of transportation, budget for travel, testing equipment, laboratory and trained personnel have been cited as reasons therefor. This results in inefficiencies, because instead of getting a one-year permit, as the law requires, industries end up with six-month permits, hence will have to comply with information requirements twice a year. Furthermore, the responsibility of gathering information is shifted to the industries instead of to the government. This allows the latter to closely monitor industries without having to spend for the activity, because the industries furnish them with the information they require in securing their permits. However, this should not replace the regular conduct of tests and inspections of the DENR so as to minimize the risk of biased information.

DENR suggested that industries should install self-monitoring devices approved by the government, and submit regular reports together with the result of indicators in their analyzer or monitoring equipment. Regional Offices can just perform spot-checking instead of inspecting all industrial plants in the region yearly. This would save time and effort on the part of both parties. This can further unburden the government of some of its regulatory functions, thus freeing resources for conducting activities that would initiate, support and implement environmental protection programs.

Because DENR does not undertake an annual inspection of water pollution sources, regulation of production activities or operation of production machinery and equipment that generate water pollution is not done efficiently. What is missing is a permit that regulates the technology itself and its pollution control capability.[42] This is often referred to as Best Available Control Technology (BACT). Furthermore, discharge permits should be linked to ambient standards in all receiving waters so that health standards are not exceeded.

Finally, a gap in the law is identified, particularly with respect to par. 2 of Sec. 8 of PD 984. As discussed earlier, the practice is to require industries to set up APDs before they are issued permits. However, the law also authorizes licensing of increases in volume or strength of any wastes discharged, as well as the construction, installation or operation of any industrial or commercial establishment which would cause an increase in the discharge of wastes. In other words, the carrying capacity of a particular catchment area is not given due consideration, much less measured and determined. This is a serious gap in current regulations and environmental laws. Amendments should be done to cover the

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[42]EMP. Policy Study #2/10: Analysis of Current Regulatory Programs for Pollution Management. Volume II. Appendix A. Manila: 27 March 1995.

volume and concentration of discharges and the construction and installation of all pollution sources.

D. Locational Clearances

The implementation of the LGC allows HLRB to issue locational clearances if the projects are deemed to be nationally/regionally and economically/ environmentally significant. The NEDA Board determines what these projects are.

Based on the interview with Ms. Delia Joseph of the HLRB, LGUs may still pass on the task of issuing clearances to HLRB if they consider themselves incapable of performing the task. The national agency, in fact, requires the LGU to inform the agency if they are capable of assuming the devolved function or not. Should they deem themselves incapable at the moment, the agency continues its role of issuing clearances.

Furthermore, the implementing guidelines issued by HLRB (Memorandum Circular No. 6 s. 1993) states that the function of issuing locational clearances is devolved to LGUs, provided they have comprehensive land use plans reviewed or approved in accordance with the E.O. Otherwise, the HLRB continues to approve locational clearances. According to a staff member of the National Land Use Committee (NLUC), most LGUs have not updated, much less formulated, appropriate land use plans that could represent a comprehensive strategy for maximizing land use in the area. The fact that these should have been reviewed by HLRB begs the question on whether capability and appropriate skills exist within the agency.

Whether the EIA should precede the locational clearance or vice-versa became a major contention between the DENR-EMB and the HLRB for quite some time. Both agencies require documentation issued by the other agency before issuing theirs. In short, the EMB required the locational clearance before issuing the ECC, while the HLRB required the ECC before issuing the locational clearance. Project proponents were tossed from one agency to another before they could start construction. Eventually, through the MOA signed on 26 June 1992, it was resolved that the EMB would only require a certificate of locational viability from HLRB stating whether the area is suited for such development or not before issuing ECC. After the ECC is issued by the EMB, only then can a locational clearance be issued by HLRB.

The EIA contains the effects of a particular project on the immediate environment of the proposed location. Meanwhile, the locational clearance states whether the project is within the classified zone appropriate for such development. However, if conducted properly and comprehensively, the EIA can easily incorporate the zoning issue. For one thing, the clearance is not based on environmental factors, rather on economic considerations, such as accessibility and presence of certain kinds of infrastructure. The EIA deals with more specifics on the

environment, hence can easily determine whether the project falls into the proper zone or not. This, however, would require a total overhaul of the EIA system that would be geared towards developing integrated EIAs, thus covering all sectors and eliminating land use conflicts.

E. Land Use Plans

In formulating zoning ordinances, environmental considerations are not taken into account. The decisions are based mostly on economic factors, such as accessibility and presence of certain kinds of infrastructure. Again, carrying capacity of the environment is not measured and determined, and does not serve as basis for zoning decisions.[43] This can be traced to the formulation of land use plans, which are the bases for zoning ordinances. E.O. 72 s. 1993 section 1 provides for this:

> *"The comprehensive land use plan prepared by the CDC (City Development Council)/MDC (Municipal Development Council) shall be submitted to the sangguniang panlungsod/sangguniang bayan, as the case may be, for enactment into a zoning ordinance. Such ordinance shall be enacted and approved in accordance with Articles 107 and 108 of the Implementing Rules and Regulations (IRR) of the LGC."*

In this case, the lack of environmental considerations should be addressed through the formulation of land use plans of local units. The NLUC staff interviewed reveals that there are problems in the formulation of these plans. Guidelines for the formulation and updating thereof are issued by the HLRB (E.O. 72 s. 1993 section 1), whereas the NEDA, through the NLUC, issues the same for regional and national land use plans. Unfortunately, there is no mechanism that allows these guidelines to be consistent with each other. This presents further problems in integrating local plans into regional plans. If the content and format are not consistent with each other, there is the danger that information in the integrated plans may not be accurate.

With respect to technical capability-building, the NEDA has conducted training and capability-building activities relative to land use planning for technical personnel in regional offices. However, guidelines are issued by central offices in Manila. There is no assurance, therefore, that those who drafted such are the most qualified to undertake such an activity.

Related to this, zoning ordinances are such that once an area has been classified under industrial zone, there is no legal basis for denying any proponent of an industry to locate there, no matter how polluted the area may be due to the existing industries. Again, the issue of measuring the carrying capacity of the area is brought to fore.

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[43] IEMP. Policy Study #2/10.

F. Effluent Standards

Field interviews were conducted among DENR regional personnel by IEMP regarding effluent standards. The following comments were generated therefrom:

1. Standards for color and BOD are too high for piggeries and distilleries. To meet them, more sophisticated and expensive facilities are needed. These would cost at least 50% of a typical firm's capitalization for small and medium-scale industries, hence are not economically feasible.

2. Some standards are too high given the level of technology and economic development in the region. For instance, although standards for BOD for firms discharging effluents classified as strong industrial waste have been liberalized, those for sugar mills, canneries and pulp and paper mills are still high.

3. The BOD standards for distillery plants and sugar mills are too difficult to achieve. No plant has ever been able to do so, even among industries abroad.

4. There is a mismatching of standards. BOD standards have been liberalized, while those for color and suspended solids were not. These three parameters should go together.

5. The color standard is one area where compromises with industry can be achieved, since the relative harm it causes to the environment is not so great. Besides, color removal is an expensive and difficult process, and is only done in Japan. However, it is the most visible, hence it creates the strongest objections from the public.

6. Water quality standard is based on concentration, not on load or rate of discharge. Some companies just dilute their wastes. This process has the same effect as discharging untreated effluents directly.

7. Not all water bodies in the Philippines are classified. Only 200 out of 450 rivers are classified including one bay. These classifications need to be updated. This causes difficulty in determining which standards to use for effluents, since these will depend on the classification of the receiving body of water.

G. Waste Management

In enforcing regulations on waste management, a problem has occurred in interpreting the loose definition of hazardous wastes. A shipment of waste batteries arrived in the Philippines from a Western country. The DENR was notified of its arrival and tried to confiscate the shipment. They could not do so, however, because the consignee claimed it is not considered as hazardous waste, because it had safe commercial, industrial and economic usage - the lead content was to be

processed in the Philippines. Moreover, it was not brought here to be dumped. This case emphasizes the need to come up with a more precise definition of hazardous waste.

PD 825 deals with garbage disposal. It requires all citizens and residents of the Philippines to undertake cleaning of their own surroundings, their yards and gardens, canals, roads or streets in their immediate premises. It also states that *"all garbage, filth or other waste matters, shall be placed in the proper receptacle for the disposition thereof by garbage collectors."* Penalties for violating this law include a jail sentence of not less than 5 days nor more than one year or a fine of PhP100.00 to 2,000.00 or both. The LGU can further pass local ordinances for strict enforcement and monitoring of the said rule.

H. Cease and Desist Orders

There are two key players in the issuance of cease and desist orders: the PAB and the DENR Regional Offices. PAB was given the quasi-judicial powers, while the regulatory functions were given to the Regional Offices. Furthermore, the PAB is authorized to impose administrative penalties for violations of PD 984 (Pollution Control Law), while the DENR Secretary can impose penalties for violations of PD 1586 (Establishing an Environmental Impact Statement System) and RA 6969 (Toxic Substances and Hazardous and Nuclear Wastes Control). Unfortunately, there is no clear delineation of functions between the two agencies.[44] What is defined as quasi-judicial and what is regulatory is not clear. This has prevented these offices from functioning efficiently.

The PAB is composed of the DENR Secretary, the Undersecretary for Field Operations, the Undersecretary for Environment and Research, the EMB Director, a representative from the Department of Health, a representative from the labor sector and an NGO representative. The reason for including top-level DENR officials was to give PAB the necessary clout for maximum effectivity. However, given the load of work these officials have on their hands, it is not very often that they can actually hear and decide on pollution cases. They would rely on the secretariat to prepare and study the cases, provide recommendations and draft the proposed Order of the Board. Each member reviews the papers before the Secretary signs them. Although everyone is consulted, the original idea of exchanging of views and voting by the Board is not being put into practice. More importantly, because the secretariat is tasked to review the cases and come up with recommendations while the Board members sign the papers, there is the danger of manipulation by non-accountable members of the Secretariat.[45]

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[44] Ibid.
[45] Ibid.

At present, the EMB Assistant Director acts as the Board Secretary. Part of his/her tasks are legal responsibilities that require appropriate skills. This is not taken into consideration when hiring for the position.

In issuing CDOs, the Regional Office conducts technical conferences, prepares a Report of Inspection (ROI) with laboratory analysis showing emission or effluent exceedances and submits the report to PAB to determine whether a CDO would be issued or not. The reason of "immediate threat" is hardly used because there are no clear guidelines on when to use this as a basis for issuance of CDO. Furthermore, there are instances when carrying out a CDO proves to be difficult due to inappropriate measures for particular situations. For instance, a CDO was issued against piggeries in Region 3. The DENR personnel usually padlock the equipment or machinery causing pollution. Since pigs were the main source, the usual procedure could not be applied in this situation. A variation of the CDO was done, wherein depopulation of the piggery was imposed. In case of non-compliance, the DENR personnel had no authority to confiscate the animals, nor do they have a place to put them and funds to sustain them. The PAB failed to consider these issues when carrying out their orders.[46]

In some cases, the PAB issues a Temporary Lifting Order (TLO) after a CDO is imposed. This is done after the polluter commits to submit the following:

- the pollution control scheme or the plans and specifications for the anti-pollution device, with an estimated installation/repair cost and the length of time required;
- performance bond equivalent to 25% of the estimated cost of installation/repair of the pollution control device to guarantee its completion within a specified time; and
- interim measures to mitigate pollution during construction period.

The TLO is valid for six months. During this period, the polluter is allowed to continue operations. The Regional Office monitors the progress and construction of the pollution control device and submits a report to the Board. Issues were raised regarding the procedure of issuing a TLO. Once the Board reaches a decision to issue one, a radio message is sent to the relevant Regional Office to break the seal and allow operations, followed by a Formal Order later on. Complaints have been lodged because of undue favor given to some industries albeit unintentional, as well as the lack of a copy of a certified PAB Order served on the party. Sometimes, it takes time for a TLO to be issued, causing heavy losses on the company's operations despite timely compliance with TLO requirements.

Nevertheless, there have been findings that TLOs are issued too frequently. This procedure has been abused by industries to avoid compliance with pollution control laws. Of over one-third of the PAB and ECC cases investigated, more than

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[46] *IEMP Interview with Dominice Balerite and Marte Ballesteros on 18 November 1993.*

one TLO was granted for each CDO issued.[47] This lessens the effectivity of the CDO, as firms can just delay the purchase of pollution control equipment, while continuing to pollute the environment as it continues its operations.

I. Penalties and Fines

There is clearly a weak spot in the conduct of the environment protection program of the government from the amount of the fines alone. The small amounts are not prohibitive at all, hence do not create a strong impetus for industries to install pollution control devices, much less practice pollution prevention schemes. Some companies find it cheaper to pay fines once pollution emitted exceeds the standards, rather than install devices. Provision of financial and non-financial incentives for industries to purchase pollution control equipment is one thing. Policies will have to be studied and implemented and can only take place on a full-blown scale after a number of years. But to impose minimal fines is one aspect that the government can correct immediately.

IEMP cited several reasons for the inappropriate level of fines. For one thing, the fines were never adjusted to account for inflation since the signing of PD 984 in 1976. In other words, the value of the fine has been eroding and does not reflect the true cost the government intends to impose on the violator. The purpose of the penalty has therefore been negated. According to IEMP's calculations, if the long term nominal interest rate and inflation rate were taken into account, the value of PhP5,000.00 in 1976 would be equivalent to PhP113,572.29 in 1994.

Second, the penalties and fines are lower compared to the costs of putting up pollution control equipment/machinery. This is known as the economic benefit of non-compliance. This is termed as such because instead of purchasing pollution control equipment, the firm could instead invest the amount in some profit-making scheme, such as project expansion or other financial instruments with positive nominal interest rate. In computing for penalties and fines, the economic benefit was never taken into account. To ensure equitable distribution of risk and cost between polluters and the government, the benefit of non-compliance should be equal to the cost thereof.

A third factor is the non-inclusion of the violator's ability to pay. The total fine set for marginal industries, i.e. those with a capitalization of PhP2 million and below, was set at PhP10,000.00. The DTI classifies small as having assets of PhP1-10 million, medium as PhP10-50 million, and large as over PhP50 million. Although marginal firms are taken into account, the relative ability to pay of small and medium firms compared to that of large firms does not enter the equation at all. In the proposed House Bills on pollution control, the maximum fine to be imposed is PhP100,000.00 for every day a violation is incurred. According to IEMP's survey, this amount is roughly one-half of one percent of a large firm's daily

[47] IEMP. Policy Study #2/10.

earnings, equivalent to almost 100% of those of medium scale firms, or over 350% of the revenues of a small firm. This factor should be considered, otherwise small and medium firms will go bankrupt after a one-day violation.

There should also be adjustments made in the penalty structure that would reflect the history of the firm violating pollution control laws, such that perennial violators should pay more at a progressive rate.

With respect to enforcement of fines, the IEMP survey shows that CDOs were issued more frequently than fines. Given the high unemployment rates in the country, this procedure caused negative impacts on the local economy. In fact, in most countries, the CDO procedure is usually the last resort of the government when dealing with polluting industries. Fines are preferred, not only because there are less "victims" involved, but also because the revenues generated therefrom could be used for better enforcement and monitoring activities of the government. It was also found that only 30% of the fines assessed were collected. Clearly, this enforcement problem has to be addressed immediately if the fines system is to work effectively.

To illustrate the lack of enforcement on the part of the DENR, the IEMP study looked at the accounting records of the agency. It was found that for a period of five years, i.e. 1989-1993, only 13 cases of violations and consequent collection of fines were recorded. There were no cases recorded prior to 1989. Moreover, there was no centralized accounting system that would systematically record the fines collected by the Regional Offices, thus there was no way of validating the cases filed and collections made by the DENR-ROs.

The DENR should be monitoring those companies that have supposedly complied with the requirements and fines to ensure that they are operating the APD and are consequently complying with the standards. However, only 8 out of the 24 sample PAB cases and 4 out of the 9 sample ECC cases, had records of follow-up monitoring activities conducted by the DENR. This suggests a weakness in the implementation efforts of the government.

The DENR Secretary is authorized to impose administrative penalties for violations of PD 1586 (Establishing an EIS System) and RA 6969 (Toxic Substances and Hazardous and Nuclear Wastes Control Act). For PD 1586, a maximum fine of PhP50,000.00 and/or suspension or cancellation of an ECC for every violation can be imposed. For RA 6969, fines can be set between PhP10,000.00 and Ph50,000.00. There is also an exemplary damage of PhP500,000.00 for storing and importing hazardous and nuclear wastes.

In the meantime, DAO 85 imposes fees on mine wastes and tailings: PhP0.10 per ton on mine tailings from metallic mines that use approved impoundment and discharge to the sea by pipelines, launders and tunnel; and

PhP1.00 per ton on mine tailings discharged on impoundment that are not duly approved. Those that are recycled are exempted from the fines.

The problem with mining fees is that they do not fully reflect the polluter pays principle. For one thing, the compensation awarded to claimants is drawn from the common reserve fund (which represents accrued mine wastes and tailings fees collected for compensation, etc.), hence does not reflect which company is causing the wastes and tailings. Other companies are therefore subsidizing those that pollute more. Furthermore, compensation is rewarded only to private owners of damaged infrastructure, owners of private land, agricultural lessors and lessees and share tenants, thereby excluding those affected by pollution damage to common property.[48]

J. Overlaps of DENR With Other Agencies

EO 192 states that the DENR is *"the primary government agency responsible for the conservation, management, development and proper use of the country's environment and natural resources"* (Sec. 4, EO 192). EMB is the staff that performs the regulatory functions through the EIA system and the secretariat functions for the PAB. There are certain exemptions in the coverage of the DENR, such as:

- Jurisdiction over waterworks and/or sewerage system operated by the Metropolitan Waterworks Sewerage System (MWSS). However, the law states that any rules issued by the DENR for the protection and prevention of pollution shall prevail over any rules issued by other government agencies in the same project.

- Development projects involving specific human settlement sites or integrated regional or subregional projects, e.g. Laguna Lake Development Authority, the DENR shall consult with the corresponding authorities in-charge of planning and implementing of the projects to ensure that their pollution control standards are consistent with those of the DENR.

It has been observed that 70% of water pollution in Metro Manila is caused by domestic sources because only 10-15% of the population is served by a sewage system. However, the DENR has no jurisdiction over this problem. Hence, it has not conducted regular inspections of facilities for domestic pollution sources, and has paid little attention to solving the problem of domestic wastes.

Overlaps in jurisdiction have also been identified. Both the DENR and the Mines and Geo-Sciences Bureau (MGB) have their own set of regulations regarding mine wastes and tailings. Mine tailings fees are collected and administered exclusively by the MGB.

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[48] IEMP. Market-Based Instruments to Promote Pollution Reduction in the Philippines. Manila: 30 November 1993.

On marine pollution issues, both the PCG and DENR have their respective programs which sometimes come into conflict with each other. The DENR has jurisdiction over land-based sources, while the PCG has jurisdiction over sea-based sources. But even if the source is land-based, once it is loaded into a barge for dumping into the sea, the effluent becomes classified as sea-based. The PCG will then have the power to issue permits for such activities.

The National Water Resources Board (NWRB) oversees water use regulation, while the National Irrigation Administration (NIA) regulates water for irrigation. Meanwhile, the Fertilizer and Pesticide Authority (FPA) regulates the use of fertilizers and pesticides, which indirectly affects the control of agricultural runoffs. It has been noted that some of the specific tasks and functions of these agencies overlap with those of the DENR. Section 77 of the Water Code for instance requires permission from the NWRB upon recommendation from the DENR on dumping of tailings and sediments from placer mining into rivers and waterways.

Solid waste management, on the other hand, has been devolved to the LGUs. The latter, together with HLRB, regulate the location of open dump sites. However, waste disposal facilities are regulated by the DENR, through the EIA system.

On the issue of devolution, problems on the extent to which LGUs assume responsibility over pollution control arose. A Supreme Court ruling on whether the LGU or the DENR has superior powers over pollution control matters illustrates this point. It decided that the determination of whether or not there is pollution can only be made by the EMB. It therefore gave EMB exclusive jurisdiction on pollution cases. Added to this, it declared all acts of public nuisance, if deemed as pollution, are outside the competence of the LGU.[49] The implication of this is that complaints on any kind of public nuisance, such as crowing of roosters from one's neighbor, should be lodged with the DENR, because the LGUs have been rendered as incompetent based on the SC ruling. Furthermore, the declaration of the EMB as the primary agency for pollution control does not define the law that created it, i.e. EO 192, which creates it as a staff bureau under the DENR. Pollution, in fact, is primarily a function of the PAB and the DENR Regional Offices.

The LGC has stated that LGUs have primacy over pollution control matters. There is a qualification, however, that pollution control administration should be accompanied by a very strict DENR supervisory regimen to ensure application of national programs and policies at the local level. Specifically, it states that basic services should be provided by LGUs, such as, for a province:

> *"Pursuant to national policies and subject to supervision, control and review of the DENR, enforcement of forestry laws limited to community-*

[49] IEMF. Policy Study #2/10.

*based forestry projects, **pollution control law**, small-scale mining law, and other laws on the protection of the environment; and mini-hydro electric projects for local purposes;"*

Thus, the Code establishes that the DENR does not absolve itself of total responsibility over pollution control. The agency maintains exclusive jurisdiction on the enforcement of laws in this area. What the Code does, however, is it expresses a progressive policy towards devolution[50] through its declaration of policy:

> *"It is hereby declared the policy of the State that the territorial and political subdivisions of the State shall enjoy genuine and meaningful local autonomy to enable them to attain their fullest development as self-reliant communities and make them more effective partners in the attainment of national goals.*
>
> *Toward this end, the State shall provide for a more responsive and accountable local government structure instituted through a system of decentralization whereby local government units shall be given more powers, authority, responsibilities and resources. The process of decentralization shall proceed from the National government to the local government units."*

A more complex scheme on devolution might be formulated later on, whereby LGUs would exercise greater power in this regard. This would require amending or superseding other laws that define the institutions involved in pollution abatement. Meanwhile, the DENR should take the initiative in training LGUs in handling pollution control matters, either in conjunction with other institutions in-charge of training LGUs specifically for implementation of the Code, or by coming up with a devolution plan which would initially define and delineate the powers of the LGUs and the agency with respect to pollution control matters. This would include defining in detail the functions of the EMB, PAB and the Regional Offices vis-à-vis the LGUs.

On toxic and hazardous wastes, RA 6969 vests the power to regulate these on the DENR. But by including chemicals and chemical substances within the Act, the DENR becomes jointly responsible with the FPA in regulating chemical fertilizers and pesticides. The same is true with nuclear and radioactive wastes. RA 6969 gives the DENR authority over these wastes, in effect creating a sharing arrangement between the DENR and the PNRI.

A special case is noted here. Through RA 4850, the Laguna Lake Development Authority (LLDA) was created to develop the Laguna de Bay area. PD 813 further amended RA 4850 to include environmental concerns in the

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[50] Ibid.

LLDA's functions. This was because of pollution problems in the lake brought by pollution from the Pasig River. Specifically, the LLDA was to *"carry out the development of the Laguna Lake region with due regard and adequate provisions for environmental management and control, preservation of quality of human life and ecological systems, and the prevention of undue ecological disturbances, deterioration and pollution"* (Sec. 1, PD 813). Hence, the LLDA had exclusive jurisdiction over the Lake, including any project or activity that would affect it.

EO 927 further provided additional coverage for the LLDA. It included the land and water area of the lake and all of its tributaries, including two provinces, one city in Laguna, one in Cavite, and four in Metro Manila. It also included three towns in Batangas, two in Cavite, one in Quezon and five in Metro Manila. The additional functions included:

- the power to issue standards regarding plans and specifications of sewage works and industrial waste disposal systems, as well as inspecting the construction and maintenance of sewage works and industrial waste disposal systems for compliance to plans (Sec. 4);
- authority to issue, renew or deny for the abatement of pollution, for the discharge of sewage, industrial wastewater or install or operate sewage works and industrial waste disposal systems (Sec. 4); and
- the power to authorize its representative to enter any property of public dominion and private property devoted to industrial, manufacturing, processing or commercial use without doing damage, for the purpose of inspecting and investigating conditions relating to pollution or possible pollution (Sec. 4).

It also issues permits similar to those of the DENR Regional Offices such as the AC and PO. It does not, however, adjudicate pollution cases like the PAB and the DENR. It can issue CDOs, but not ex parte. There has to be a prior hearing for the respondent to answer charges. This takes a lot of time, so handling of pollution cases becomes more inefficient relative to those under the DENR's jurisdiction.

K. Insurance Funds

The main purpose of insurance is to provide compensation or indemnity for a loss suffered by a person because of a designated event, which may either be contingent or uncertain at the time it occurred. For purposes of pollution control, the concept of insurance can be applied to:

- damages for personal injury from toxic chemical exposure;
- damages to property from toxic chemical exposure; and
- corrective action or remediation for chemical spill or other upset.

The various commercial mechanisms available for demonstrating financial responsibility are the following:

1) Non-life insurance
2) Surety bonds. This refers to a contract defined in the Insurance Code as *"an agreement whereby a party called the surety guarantees the performance by another party called the principal or obligor of an obligation or undertaking in favor of a third party called the obligee"*.
3) Letters of credit. This is defined as *"an instrument by which a bank, for the account of the buyer of a merchandise, gives formal evidence to the merchandise seller, of its willingness to permit him, the seller, to draw bills against it, on certain terms, and stipulates in legal form that all such bills will be honored."*
4) Trust funds

These instruments have long been used in the Philippines but were limited to traditional commercial transactions only. Except for surety bonds, the rest have not been used for environment-related liabilities. Nevertheless, there is a positive attitude among insurance experts, bankers and lawyers interviewed that these instruments could be used for demonstrating environmental financial responsibility in the future.

On the other hand, surety bonds are required by the PAB from companies which have been issued CDOs. Before CDO is lifted, the polluter has to post a performance bond equivalent to 25% of the cost of the APD. From 1989 to 1992, 129 companies have submitted performance bonds with an aggregate face value of PhP135.5 million. This shows the acceptance of surety bonds as commercial instruments to show financial responsibility.[51]

Self-insurance provides an allowance for periodic charges at an actuarially determined rate sufficient to meet projected losses.[52] The allowance can be sourced from retained earnings and the loss can be charged to income incurred. Sometimes, companies establish a supporting fund by segregating cash or marketable securities. Note that this method is used only by large companies with strong financial condition.

On the other hand, an insurance pool is an agreement whereby each local insurance company agrees to accept and share risk profits as well as losses under a predetermined rate agreed upon for a specific line of insurance business generated by any member of the pool.[53] One pool exists in the Philippines, The Philippine Nuclear Insurance Pool Management Corporation. Insurance companies comprise the Macpool, an informal organization which serves as the group of stockholders of

[51] IEMF. Policy Study #2/10.
[52] Ibid.
[53] Ibid.

the Corporation. Another example of this is "Protection and Indemnity Clubs" or P and I Clubs of shipowners who band together to protect mutual interests.

Despite the presence of all these instruments, insurance experts interviewed by IEMP gave a number of reasons why there is lack of coverage for environmental liabilities:

1) There is no legal obligation for companies to demonstrate financial responsibility.
2) Environmental liabilities in the country have not yet been quantified.
3) The potential liability of insurance companies might be too high, because of the nature of the risk, hence companies might charge highly expensive premiums.

L. Gaps in The Investment Policy

The Medium Term Plan encourages regional dispersal of industries to realize economic and equitable growth all over the country. The strategy towards this goal is the setting up of industrial estates (IEs) in major growth centers of each geographical region. These can either be any of the two: the regular IE for products either for export or domestic consumption, or the EPZ for products strictly for exports. Firms locating therein receive more fiscal incentives.

A study conducted by the Philippine Institute for Development Studies (PIDS) shows that the average level of Effective Protection (EPR) and variation across industries has gone down significantly since the 1950s. Gaps between agriculture and industry, and between the exporting sector and import-substituting sector were lessened. Furthermore, the study showed an increase in the overall level of competitiveness of the manufacturing sector. However, majority of new industries were relatively small scale. This reduced the bias to large scale plants which would have positive employment and income distribution effects.

The PIDS study further reveals that on the whole, IEs have been very costly and were ineffective instruments for regional dispersal of industries, which is largely attributed to their substantial unutilized capacity.[54] However, recent trends show that there are increased foreign and domestic investment activities in these areas which might accelerate capacity utilization, thus resolving the issue of inefficient use of resources for the IEs.

The study concludes that there is a need to rationalize the investment incentives system for it to effectively channel investments to the desired sectors within industry which will maximize the potential of the industrial sector in the development process. In other words, it should provide investment incentives which will correct market failures and distortions which prevent the optimal flow of investments. One of these distortions is the bias against exports. Although efforts

[54] Ibid.

are geared towards removing this bias, there are still certain areas in the system that need to be addressed.

Foreign investments have always been encouraged to enter the country. The Foreign Investment Act (FIA) of 1992 liberalizes entry and equity requirements of foreign direct investments by providing a "negative" list of industries where 100% foreign equity is not allowed. There have been no studies evaluating whether this has benefited the economy.

M. LOCAL GOVERNMENT CODE: IMPACT OF DECENTRALIZATION ON ENVIRONMENT PROTECTION

The LGC of 1991 transfers the responsibility of providing and delivering a variety of services formerly performed by national agencies to local government units. Included are programs that have environmental objectives. Basically, this involves the devolution of some functions of the DENR. Decentralization is expected to result in better targeting of government interventions, lower transaction costs, rapid adoption of efficiency enhancing innovations and improved matching of resources with needs in the long run.

Notwithstanding the advantages of decentralization per se, there are perceived risks in connection with the efficient and equitable delivery of these specific services. For one thing, by signing the United Nations-initiated 20:20 compact and Agenda 21, the Philippine government has committed human development and sustainable development concerns to be national priorities. Moreover, the NEDA Board's Investment Coordinating Committee (ICC) recognizes the existence of these risks and *"has allowed national line agencies to package, finance and even implement devolved programs and projects on a case by case approach on the basis of sectoral justifications and observed patterns of underinvestment by LGUs."*[55] As the number of exceptions to the devolution policy increases, so are its budgetary requirements correspondingly. This has brought issues of revenue mobilization and technical capabilities to fore.

1. DEVOLVED FUNCTIONS OF THE DENR

With respect to the DENR, the following functions of the agency have been devolved to LGUs:

- forest management;
- protected areas and wildlife;
- environmental management;
- mines and geo-sciences management; and

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[55] NEDA-Public Investment Staff. Policy Framework for National Government Assistance for the Financing of Local Government Projects with Environmental and/or Social Objectives. Pasig City: June 1996.

- land management.

In particular, provincial governments are mandated to perform the following functions:

- enforcement of forestry laws limited to community-based forestry projects;
- pollution control law;
- small scale mining law;
- other laws on the protection of the environment; and
- mini-hydro electric projects for local purposes.

Municipal governments now have the following additional functions:

- implementation of community-based forestry projects, including social forestry programs and similar projects;
- management and control of communal forest with an area not exceeding fifty (50) square kilometers; and
- establishment of tree parks, greenbelts and similar forest development projects.

City governments are mandated to undertake all functions of the municipal and provincial governments.

Note, though, that all these functions performed by LGUs are subject to the supervision, control and review of the DENR.

In response to this, the agency has issued several department circulars and implementing guidelines:

- DENR AO No. 30 s. 1992: Guidelines for the Transfer and Implementation of DENR Functions Devolved to LGUs
- DENR AO No. 37 s. 1992: Amending Certain Provisions of DAO 30
- DENR Memo Circular No.17 s.1992: Delineation of Functions and Implementation of the Integrated Social Forestry Program after the Devolution of Functions to the LGUs

Noteworthy, though, is the control that the agency has retained over the relevant functions, as provided under DAO 30:

> *"the implementation of the devolved functions by the municipalities and cities and the enforcement of laws, rules and regulations pertaining to the devolved functions as provided for in the Code, by the provinces and cities shall be pursuant to national policies and subject to supervision, control and review of the DENR."*

To assist in capability building for LGUs, the DENR drafted Manuals of Operations for the devolved functions.

2. RISKS INVOLVED/ISSUES AND CONCERNS

Economic Issues

There are a number of economic costs attached to devolution. Among the direct costs are incremental outlays for capability building that the national government would have to incur in devolving some of their functions to sub-national levels. Administrative costs are also incurred in support of the national secretariat for the Oversight Committee tasked to oversee the implementation of the Code. More importantly, perhaps, are the indirect costs involved. One, there is the loss of efficiency in carrying out government tasks, particularly for LGUs that lag behind in terms of capability. Second, competition among LGUs that vie for visibility and credit can cause resource misallocation. Also, there is the risk that local elite may gain easier access in the awarding of contracts and franchises, which may exacerbate corruption in government. Finally, there is the issue of computing for prices using project analysis. The national government has always used the concept of shadow prices, to take into account benefits and costs that might accrue to indirect beneficiaries of a project. LGUs would most probably use market prices to compute for benefits and costs, thereby not accounting the total welfare gain or loss of a project, since these prices would be closer to the value of the resources.[56]

Social and environmental objectives cut across all income levels. Hence, implementation of corresponding programs should be done in a systematic manner. Given the varying levels of competence of LGUs, there is a risk that this will not be achieved. The Code did not take this into account when it identified functions that would be devolved. Consequently, LGUs in need of social services were the least capable of carrying out the devolved functions due to lack of resources and capability.

Projects that fall under the social and/or environmental category sometimes involve externalities, economies of scale or equity issues. Externalities are indirect effects of the project on certain people or areas, who/which are neither intended beneficiaries nor are direct participants in the project. Externalities usually lower the propensity to invest in such projects.

Meanwhile, economies of scale refer to cost-effectiveness of a project given its production capacity and the number of people/size of the area served. Sometimes, a project may require a larger area or population served for it to be cost-effective. If the project is capable of serving more than the locality of the LGU,

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[56] Alonzo, Ruperto and Eduardo Gamboa. An Economic Cost-Benefit Analysis of the Local Development Assistance Program. Manila: January 1990.

there might be a need for a higher level of government to handle it to avoid cases of overlapping and excess capacity.

Finally, in implementing poverty alleviation strategies, there is a redistribution mechanism that takes place. Until this is standardized, the national government believes it is best that they continue undertaking redistribution efforts, particularly in the provision of basic social services and livelihood enhancement. Otherwise, a local jurisdiction that attempts to carry out redistributive policies is likely to drive out the rich.[57]

Political/Institutional Issues

There are certain political implications that the Code contains with respect to the extent of decentralization, particularly for functions formerly undertaken by the DENR. Because all environmental functions are subject to the DENR's supervision and control, the LGUs are treated as "subordinate officers." The DENR can revoke any or all acts of the LGU, preventing the finality of decisions made by the LGUs.[58] Hence, the true spirit of decentralization is defeated. Moreover, the problem of overdependence on the national government is not resolved. The LGUs will still rely on national agencies to make decisions for them.

In imposing fines and penalties through ordinances, the Code limits the powers of the LGUs in stipulating amounts. The municipal government is allowed to approve a maximum of PhP2,500.00 or imprisonment for a period not exceeding six months, or both, upon the discretion of the municipal court. City and provincial governments, meanwhile, are allowed to impose a maximum fine of PhP5,000.00 or imprisonment for one year, or both, again upon the discretion of the city or provincial court.[59] Given these measly penalties LGUs are allowed to collect, environmental protection cannot clearly be accomplished without the support of the national government. Again, this reflects lack of proper matching between powers and functions devolved to LGUs. In this regard, LGUs cannot be expected to carry out environment protection functions efficiently.

One of the purposes of the Code is to relieve the national government of particular functions that can be carried out by the LGUs. Because of the "control" aspect that the national government agencies are still expected to exercise, this purpose is definitely not served.

As mentioned earlier, the DENR issued a set of guidelines for the proper conduct of decentralized activities. DAO 30 refers to the devolution of certain DENR functions, programs and projects to the LGUs. From the beginning of the

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[57] Shah, Anwar. *"Perspectives on the Design of Intergovernmental Fiscal Relations."* PRE Working Papers, Country Economics Department, The World Bank, July 1991.
[58] La Viña, Antonio. Environmental Issues and Policies: The Role of Local Governments. Quezon City: August 1995.
[59] La Viña.

document, the Order is consistent with the role of the agency as the "primary government agency" tasked to ensure environmental protection. The LGUs, then, become the secondary agencies performing this responsibility. This implies that enforcement of environmental laws shall be pursuant to national policies, and are subject to the supervision, control and review of the DENR. Again, the national agency is empowered to nullify or change decisions made by the LGUs.

In the study conducted by Dr. La Viña, an examination of DAO 30 reveals the following:

1) What was devolved was police work. Unfortunately, this implies that enforcement of environmental laws is done at the latter stages of environmental degradation when problems are already serious and are harder to solve, causing graver consequences to the environment. For instance, in carrying out functions relative to the protection of forests, illegal logging activities are stopped by confiscation of the logs, instead of guarding the forests even before the logs are cut. Although the perpetrators are caught in the end, the forests are still not protected, since the trees had already been cut. In this sense, environmental protection was not carried out.

2) DAO 30 does not provide for maximizing natural resources in the course of economic development of the locality. The LGUs are limited to issuing permits for guano collection and extracting sand, gravel and quarry resources. Other than that, there are no guidelines on how to use their resources in economic development planning.

3) The Order never refers to the devolution of powers to the LGUs. Instead, it always refers to "devolved functions", lending credence to the earlier claim that there is a mismatch of devolved functions versus devolved powers. This, however, is only consistent with the Code, and does not reflect a malicious intent on the part of the national agency to misinterpret the Code.

Provisions in the LGC pertain to devolved functions of the LGUs in protecting the environment within their area of jurisdiction. Devolved powers, though, do not match these functions, as evidenced by the role of the DENR as primary agency responsible for protecting the environment. Clearly, there is a mismatch of functions and powers provided in the Code.[4]

Another agency involved in the conduct of environmental protection activities of the LGUs is the DILG. It is mandated to perform the following functions:

- advise the President on the promulgation of policies, rules, regulations and other issuances relative to the general supervision of the LGUs;

[4] La Viña.

- establish and prescribe rules, regulations and other issuances and implementing laws on the general supervision of the LGUs and on the promotion of local autonomy and monitor compliance thereof by said units;
- provide assistance in the preparation of national legislation affecting the LGUs;
- establish and prescribe plans, policies, programs and projects to meet national and local emergencies arising from natural and man-made disasters; and
- perform other functions as may be provided by law.

In conducting their functions, the DILG is involved in twelve committees or task forces focused on environmental activities, such as the Pasig River Rehabilitation Program, the Red Tide Task Force, etc. Moreover, it provides courses on environmental management to local executives and legislators in pursuit of its capability-building mandate.

As can be gleaned from above, the DILG is heavily involved in providing assistance to LGUs in their environmental protection functions. However, there is a lack of an overall framework in doing so. The involvement of the DILG is ad hoc in nature and there is no coherent approach or strategy therein.[61]

Finally, there is the Philippine National Police (PNP) that is provided with police power for the enforcement of environmental laws. A special unit within has been formed, called the Environment and Natural Resources Protection Force (ENREPF) tasked to protect the environment. The disposition of this Force is on a regional basis, mirroring the organizational structure of the DENR and other national line agencies. Its primary responsibility is to provide police assistance to the DENR and other government and non-government agencies concerned in the conduct of special operations implementing environmental and natural resource protection laws.[62] Essential to the success of the ENREPF is its close collaboration with the DENR, as well as with the LGUs and NGOs, in undertaking its functions. In this regard, the establishment of the Tanggol Kalikasan[63] Law Office by the Haribon Foundation and the FPE is seen as serving this purpose, whereby the Office provides information and conducts monitoring activities on violations of environmental protection laws. Moreover, the Law Office is tasked to provide legal assistance to policemen *"who may become subject (to) harassment cases as a result of dedicated and proper performance of their duties"*.

3. LOCAL GOVERNMENT FINANCING ISSUES

In order to perform the added responsibilities mandated in the LGC, LGUs have realized the need to increase their funding sources because regular funds from the IRA are insufficient. Credit financing is a mechanism that could serve as a major source of revenues for LGUs. In view of this, the DOF, supported by the USAID,

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[61] La Viña.
[62] Letter of Instruction 17, Series of 1994, Philippine National Police.
[63] See Report No. 1 on NGOs- Haribon Programs and Projects, for details on the Tanggol Kalikasan Program.

commissioned a study to assess the possibilities for increasing the LGUs' ability in raising funds.

History of Revenue Mobilization by LGUs

Local Revenue Sources

Generally speaking, the LGUs did poorly in sourcing funds locally. In a study of LG revenues in 1980-1990,[64] the LGUs raised only one-half of their revenues locally. Most of this came from Real Property Taxes (RPTs), representing 40% of local revenues. The Local Business Tax (LBT) contributed 18%, while other taxes, i.e. taxes on occupation, franchise and sand and gravel contributed 9%.

Compared with economic indicators, local revenues could not cope with nominal prices and income. The annual average growth rate of local revenues was 13.93%, while the annual average inflation rate was 14.69% and national nominal income was 15.4%.

Looking at taxes alone, the effective tax rate (ETR), which measures the proportion of the base that is actually collected as tax, was low. The ETR of the RPT was only 1.27% compared to a statutory rate of 2%. If the current market value of properties were factored in, the ETR becomes 0.067%. Other taxes performed poorly as well, such as the LBT which had an ETR of 0.15%. These low ETRs suggest a very unproductive tax structure and poor performance in tax collection.

The effective base rate (EBR), which is the growth in taxes relative to the growth in income, for both the RPT and LBT, has been declining. This means that tax bases have not kept up with income growth. One explanation for this is the wrong valuation of real properties, whereby current market values are not reflected, and the inability of LGUs to correctly determine gross receipts of business.

Furthermore, the rate elasticity for RPT, which is the change in revenues relative to the change in tax base, is almost equal to one. This means that there has been no improvement in collection efficiency. Even for LBT, the rate elasticity was very low.

External Revenue Sources

With respect to external sources the internal revenue allotment represented around 73.74% of the total. Grants and aids made up 23.79%, while the remaining 2.09% were from borrowings. This suggests heavy dependence on IRAs. Furthermore, LGUs did not have much flexibility in conducting their functions because determination of the IRA hardly changed due to rigidity in securing additional funding. In other words, an LGU could expect to get the same amount

[64] LDAP, Local Government Unit Revenue Mobilization Overall Study, Manila: May 1992.

from the IRA every year. This did not encourage innovations and long-term investments at all.

Securities and Borrowings

Prior to the Code, no securities were issued by the LGUs, save for the Cebu Equity Bonds issued in 1991. This was due to the rigid requirements in PD 752, which practically discouraged LGUs from issuing local securities. LGUs resorted to loans from government financial institutions and the Municipal Development Fund. Private banks could have served as sources as well, but there was a big difference in the interest rates offered.

Nevertheless, loans did not constitute a big bulk of LG revenues because of the lengthy process involved in securing a loan. All applications had to be approved by the Ministry of Finance before they could be evaluated and approved by the lending institution. The approval itself took a lot of time and effort, due to documentation required from the proponent. Once approved, the financial institutions themselves, particularly those in the government, have their own documentation requirements from the LGUs.

The government financial institutions that provided credit to LGUs were the DBP, the LBP, the Philippine National Bank and the Government Service Insurance System. The DBP, which accounted for 41.6% of total loans to LGUs, had the worst record of payments, with only 12.5% of its total loans without any arrears. The GSIS likewise had negative experiences, although only a very small amount of loans were sourced from this agency. Most of these delinquent loans were for the construction of public markets. A study by Yoingco in 1986 reveals that this result is caused by the low profitability of this economic enterprise.

The result showed that LGUs did not have much of a credit history with private financial institutions, and it is only recently that each party is opening up to the other in the credit market. Also, the small amount of securities and borrowings emphasizes the lack of significance of credit financing in the history of local revenue mobilization.

Awareness of Revenue Mobilization Schemes

The study conducted by USAID was based on a survey of LGUs composed of 35 provinces, 20 cities and 20 municipalities.[65] Most of these LGUs were aware of only two forms of revenue mobilization, i.e. loans from GFIs and private institutions, and loans from the government sourced from external sources such as the Municipal Development Fund. Some were aware of other schemes such as the BOT, bond flotation, the deferred payment scheme, or the lease/lease-purchase

[65] Llanto, Gilberto. National Survey Prospects for Credit Finance Local Government Units, Annex 3. Manila: 27 May 1992.

scheme. However, the number of LGUs, as well as knowledge on the mechanisms of these schemes, was limited.

Provisions in the Code

At present, LGUs can either negotiate loans or issue securities or both to finance their requirements. Sec. 299 of the Code specifies that LGUs are:

> *"authorized to issue bonds, debentures, securities, collaterals, notes and other obligations to finance self-liquidating, income-producing development or livelihood projects pursuant to the priorities established in the approved local development plan or the public investment program..."*

Likewise, Sec. 297 provides that LGUs:

> *"may contract loans, credits, and other forms of indebtedness with any government or domestic private bank and other lending institutions, (for the) improvement, expansion, operation or maintenance of public facilities, infrastructure facilities, housing projects, the acquisition of real property, and the implementation of other capital investment projects...*
>
> *...may likewise secure from any government bank and lending institution short-, medium- and long-term loans and advances against security of real estate or other acceptable assets for the establishment, development or expansion of agricultural, industrial, commercial, house financing and livelihood projects, and other economic enterprises."*

Furthermore, a debt relief package is offered in the Code. Under Section 531, Title III, Book IV, the program includes the following:

1. unremitted contributions to the Integrated National Police Fund, Special Education Fund and other statutory contributions including unremitted national government shares in taxes, charges and fees collected by the LGUs are written off in full;

2. program loans secured by the LGUs which were relent to private persons, natural or juridical, shall be written off from the books of the LGUs concerned, provided the national government agency tasked with the implementation of these programs shall continue to collect from debtors from the private sector;

3. program loans granted to the LGUs by national government agencies which were utilized for community development, livelihood and other small scale projects are written off in full; and

4. the national government shall assume all debts incurred or contracted by the LGUs from GFIs, GOCCs and private utilities that are outstanding as of 31 December 1988 based on the following schemes:

   - for debts due GFIs, the obligations are bought at a discount;
   - for GOCCs, a discounted rate is provided through offsetting against the outstanding advances made by the National Treasury in behalf of the GOCCs; and
   - for private utilities, a discounted rate is provided through offsetting against the outstanding obligations of the private utilities against GOCCs.

Rationale for Credit Financing

The LGUs have a lot to gain from credit financing:

- They can attain financing flexibility which enables them to enjoy the benefits of desired expenditures without having to await accumulation of sufficient funds from their savings before expending funds.
- In cooperation with the private sector, they can develop high quality investments with reliable yields to the LGUs and investors.
- They can promote early cost recovery types of projects and speed up the processes of local development and services delivery.
- They can take advantage of the fact that borrowing in support of revenue-generating activities tends to discourage government consumption expenditures.
- If they access the private loan and investor markets, their benefits increase because the creditworthiness standards applied permit only the most viable undertakings to be financed.
- Similarly, private loan and investor market potential resources are relatively large as compared to what might be available through central government-operated forms of subsidized credit.

Constraints

Because of the dependence of the LGUs on the national government, serious doubts were raised as to the capability of the LGUs to implement these schemes in time for them to absorb the functions being devolved to them. Initially, they were given one year before Code implementation goes full-scale. However, due to the lack of resources to undertake such and the capability to generate these resources, the schedule was postponed three times.

Until now, not all provisions in the Code have been implemented. As mentioned in other parts of this report, the DENR is still coming up with a system of devolving functions such that they still maintain control over these functions. The HLRB has not totally devolved physical planning, as reflected in their

continued issuance of locational clearances until such time that the LGU comes up with an approved land use plan. The DOF is conducting training on the BOT scheme for the LGUs to use for their respective programs and projects. Even banks and multilateral agencies are hesitant to provide loans and grants for the LGU projects because of their lack of credit history and their relative inexperience in handling infrastructure projects. A reason cited why private banks are hesitant to provide loans to the LGUs is that when the incumbent officials step down, those elected may not accord the same level of priority to the projects, and may default on these loans later on. This is especially true of projects that are long-term in nature.

In particular, a number of LGUs have poor credit performance ratings, and have to avail of the Debt Relief Program of the Code.[66] This reflects lack of technical skills and know-how in dealing with the credit markets. On the other hand, some LGUs are not experienced in borrowing from banks. Most of their revenues came from borrowings from the MDF and the ESF.[67] A more basic training program should be provided for these LGUs to cope with the Code's requirements.

If no conscious and comprehensive intervention, with respect to providing training and information on the various revenue mobilization schemes available to the LGUs, is undertaken, the varied levels of consciousness and skills among them will continue to exist. This will eventually lead to self-selection in the credit markets, whereby some capable LGUs will participate and others will continually depend on grants/aids/donations or loans from GFIs. Unfortunately, this trend will eventually lead to an excess demand for subsidized credit and will prove to be unsustainable in the future.[68]

Schemes other than availment of credit should also be looked into. For instance, the BOT scheme should be one of the main topics when conducting training for the LGUs. The DOF has been exerting efforts in this regard. However, the Local Government Academy (LGA), the body mandated to provide comprehensive training for the LGUs, should also take this into account, since participation in the DOF training is limited. Government has always emphasized that the private sector should be increasingly relied upon in providing public services that are more efficiently delivered by the latter. The LGUs should be at the forefront in taking advantage of this.

It has been said that the Code might have been overly optimistic in the timeframe it established for full decentralization to take effect. Nevertheless, the executive branch of government is learning from all these birth pains and efforts continue to be exerted in addressing the capability-building problems of the LGUs.

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[66] Ibid.
[67] Ibid.
[68] Ibid.

N. CONFLICTS IN THE SHIPPING INDUSTRY

There are three government agencies that play a major role in the protection of the marine environment from pollution from shipping: the Maritime Industry Authority (MARINA), the Philippine Coast Guard (PCG) and the Philippine Ports Authority (PPA). Each of their major functions, as they relate to marine pollution prevention and management, are discussed below.

1. MARITIME INDUSTRY AUTHORITY (MARINA)

EO No. 125 entitled "Reorganizing the Ministry of Transportation and Communications Defining Its Powers and Functions and for Other Purposes", later on amended by E.O. 125-A,[69] enumerates the functions of the MARINA:

- Develop and formulate plans, policies, programs, projects, standards, specifications and guidelines geared toward promotion and development of the maritime industry, growth and effective regulation of shipping enterprises and for the national security objectives of the country;
- Establish, prescribe and regulate routes, zones and/or areas of operation of particular operators of public water services;
- Issue Certificates of Public Convenience for the operation of domestic and overseas water carriers;
- Register vessels as well as issue certificates, licenses or documents necessary or incident thereto;
- Undertake safety regulatory functions pertaining to vessel construction and operation including the determination of manning levels and issuance of certificates of competency to seamen;
- Enforce laws, prescribe and enforce rules and regulations, including penalties for violations governing water transportation and the Philippine merchant marine and deputize the Philippine Coast Guard and other law enforcement agencies to effectively discharge these functions;
- Undertake issuance of licenses to qualified seamen and harbour, bay and river pilots;
- Determine, fix and/or prescribe charges and/or rates pertinent to the operation of public water transport utilities, facilities and services except in cases where charges or rates are established by international bodies or associations of which the Philippines is a participating member or by bodies or associations recognized by the Philippine government as the proper arbiter of such charges or rates;
- Accredit marine surveyors and maritime enterprises engaged in shipbuilding, shiprepair, shipbreaking, domestic and overseas shipping, ship management and agency;

[69] E.O. 125-A is entitled "Amending Executive Order No. 125, Entitled 'Reorganizing the Ministry of Transportation and Communications, Defining Its Powers and Functions and for Other Purposes'"

- Issue and register continuous discharge book of Filipino seamen;
- Establish and prescribe rules and regulations, standards and procedures for the efficient and effective discharge of the above functions; and
- Perform such other functions as may now or hereafter be provided by law.

In furtherance of the development of the maritime industry, MARINA is mandated to:[70]

- adopt and implement a practicable and coordinated Maritime Industry Development Program (MIDP) which shall include, among others:
  - early replacement of obsolescent and uneconomic vessels;
  - modernization and expansion of Philippine merchant fleet;
  - enhancement of domestic capability for shipbuilding, repair; and
  - development of reservoir of trained manpower.
- provide and encourage private sector investments through:
  - financial assistance through public and private financing institutions and instrumentalities;
  - technological assistance; and
  - a favorable climate for expansion of local and foreign investment in shipping enterprises.
- provide for effective supervision, regulation and rationalization of the organizational management, ownership and operations of all water transport utilities and other maritime enterprises.

2. PHILIPPINE COAST GUARD

The PCG is mandated to administer maritime safety in the country. It is a unit under the Philippine navy, whereby all its officers are enlisted navy personnel, therefore is considered a military outfit rather than a civilian body.

The missions of the agency include:

- to promote safety of life and property at sea;
- to safeguard marine resources and the environment;
- to promote maritime security;
- to assist in the enforcement of law on the high seas and waters subject to Philippine jurisdiction; and

[70] Mejia, Maximo Q. Jr. Maritime Safety Administration in the Philippines: Current Issues and Recommendations. World Maritime University, Sweden: 1994.

- to support national development.

Furthermore, the PCG is in-charge of:[71]

- Maritime Administration (MARAD). This refers to: vessel safety, whereby seaworthiness of vessels bearing the Philippine flag is ensured; merchant marine administration, which ensures professionalism and competence among ships' crews; and navigational safety, which ensures that aids to navigation such as lighthouses and buoys operate effectively and ensure that proper navigational standards are maintained.

- Maritime Operations (MAROPS). This refers to security in maritime environment and participation in counter-insurgency operations, sealift operations, civil-military operations and operational training.

- Marine Environmental Protection (MARPOL). This refers to the responsibility of preventing, mitigating and controlling marine pollution and enforcing all applicable environmental laws and regulations for preserving and conserving marine and aquatic resources.

- Maritime Search and Rescue (MARSAR). This deals with responding effectively to maritime casualties and disasters on or near Philippine waters.

- Maritime Law Enforcement (MARLEN). This refers to providing assistance to other government agencies in the performance of their functions within the waters under Philippine jurisdiction.

3. PHILIPPINE PORTS AUTHORITY (PPA)

The PPA is in-charge of implementing an integrated program for planning, development, financing and operations of ports or port districts for the entire country. The objectives of the agency are:[72]

1) A well-coordinated, streamlined and improved planning, development, financing, construction, maintenance and operation of ports and its facilities;
2) A smooth flow of water-borne commerce passing through the country's ports, whether public or private, in the conduct of international and domestic trade;
3) Promotion of regional development through dispersal of industries and activities throughout the different regions;
4) Furtherance of better inter-island seaborne commerce and foreign trade;

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[71] Mejia.

[72] Simon, David. R. *"The Role of the Philippine Ports Authority and The UN Convention on the Law of the Sea"*, in Philippine Ports, Shipping and Navigation Under the New International Law of the Sea. Institute of International Legal Studies, University of the Philippines, Diliman Quezon City: 1995.

5) Upgrading of port administration beyond its specific and traditional function of harbor development and cargo handling operations to the broader function of total port district development, including encouragement of full and efficient utilization of the ports' hinterland and tributary areas;
6) Proper collection and accounting of all income and revenue accruing to PPA; and
7) Realization of a reasonable return on the assets employed.

In terms of jurisdiction, the PPA covers all ports in the country, including 338 private ports as far as site, construction, design operations and environmental impact are concerned. For government ports, the PPA acts as owner as well, hence the agency has corporate powers over them. Most of these private ports are engaged in oil, mining and wood industries.

The country is divided into five port districts, under which are 19 operating units or Port Management Offices (PMOs), each of which is headed by a Port Manager. The policies within the PPA are determined by the Board of Directors chaired by the DOTC Secretary and vice-chaired by the PPA General Manager. Its functions include planning for new sites and ports for future development and evaluating and monitoring performances of various ports all over the country.[73]

With the passage of the LGC, actual construction, operation and maintenance of municipal/tertiary ports have been devolved to LGUs. The DOTC has limited its role to coordination of programming and implementation of future port projects, including technical supervision and the provision of engineering design standards. Meanwhile, the DPWH has continued completion of all on-going port projects.

Ports play a role in protecting the marine environment. Pollution of ports may come from :

1) Land-based sources, e.g. hazardous/toxic wastes, drainage and sewerage systems; and
2) Vessels, e.g. discharges like oil, sludge, garbage, spillage or cargoes during loading/unloading.

Because of the nature of private ports in the country, pollution risks are great. According to statistics, more than half of the total cargoes handled in the country pass through private ports, a significant number of which are from the petroleum industry. Moreover, the average vessels that pass through private ports are bigger than those at government ports, the former averaging 10,616 gross revenue tons (GRT), while those at government ports averaging only 8,118 GRT.[74] However, Capt. Acenas of Pilipinas Snell refutes the assumption that the bigger the ship, the greater pollution risk it poses. In fact, he asserts the opposite, whereby

[73] Simon.
[74] Simon.

bigger ships are more careful in berthing and have higher standards in the discharging process, i.e. via pipeline ship to shore.[75]

There have been very few issuances from PPA that refer to protecting or preserving the marine environment. PPA Administrative Order No. 09-82 s. 1982 provides for:

> *"Vessel dumping or causing to spread crude oil, kerosene or gasoline in the bay or at the piers within three miles from the nearest coastline, a fine of not less than PhP1,000.00...*
>
> *Vessel dumping garbage or slops over the side within three miles from the nearest coastline, a fine not exceeding PhP1,000.00."*

Aside from the fact that the fines are way below the marginal costs for the industry, there is no record or report that this was ever applied to violators.[76]

Finally, despite the policy issued in 1985 for government ports to comply with the Maritime Anti-Pollution Program of 1973, specifically the issuance of PPA Memorandum Circular No. 04-85 issued on 15 January 1985, government ports have not yet regulated nor provided adequate reception facilities and personnel for the collection of vessel wastes and other discharges.[77]

4. OVERLAPS/CONFLICTS OF FUNCTIONS AMONG GOVERNMENT AGENCIES

One of the safeguards imposed by MARINA against marine pollution is the requirement of sea vessels to be covered against pollution risks. The coverage would depend on the size and classification of the vessel, guidelines for which are provided under Memorandum Circular No. 56 s. 1990 and 56-A s.1991. In particular, it imposes classification standards by internationally accredited classification societies and it requires vessels in the oil trade to secure US$300 million oil pollution cover. Despite this, there are a number of policy conflicts inhibiting sound management of marine pollution.

One weakness in the implementation of its functions is in the area of vessel inspection. Implicit in E.O. 125-A, the MARINA is mandated to ensure that ships have pollution control equipment, e.g. incinerators and oil separators. They have the power to deputize the PCG on matters pertaining to enforcement of rules and regulations. The PCG is responsible for ensuring maritime safety, hence vessel inspection is included. However, it is explicitly specified that the MARINA should

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[75] Acenas, Alberto S. *Reactions to Simon's Paper on The Role of PPA...*, in Philippine Ports, Shipping and Navigation Under the New International Law of the Sea. Institute of International Legal Studies, University of the Philippines, Diliman, Quezon City: 1995.
[76] Simon.
[77] Simon.

undertake such inspection. Monitoring and inspection of vessels to ensure the presence of these pollution-control facilities have yet to be done by the agency. They claim that there is no budget provided that would allow them to do field work and conduct periodic inspections. The Congress mandated them to do so but no budget was allocated. Unless appropriate funds are provided, the MARINA cannot conduct inspection activities.

Recent events have shown that there is a problem in delineation of functions and responsibilities between the MARINA and the PCG. E.O. 125-A authorizes the MARINA to deputize the PCG to carry out its functions. However, it is not capable of asserting its authority over the latter. Conflicting policies regarding the matter have surfaced, but, at this point, the government does not have a clear solution to the problem.

One of the issues raised is the lack of coordination of the PCG with the MARINA's activities and functions. As can be gleaned from their functions, the PCG was created to take charge of maritime safety, while the MARINA appears to be in-charge of both the development of the maritime industry as well as undertaking activities for maritime safety. This has caused confusion on which agency is responsible for the activities in pursuit of the latter objective.

Although the MARINA claims it has the expertise in conducting maritime safety activities, the PCG likewise affirms its technical capabilities on this matter. According to an interview with Lt. Mejia of Port Safety Control of the PCG, the root of this conflict is the fragmentation of the two agencies where the PCG is under the Philippine Navy, while the MARINA is under the DOTC. This fragmentation of maritime agencies caused the lack of coordination of their activities, overlapping functions as well as neglect of conducting safety procedures for maritime concerns. In this regard, there was a multi-sectoral movement which called for the creation of the Department of Maritime Affairs which would absorb the functions of the MARINA, PCG and PPA. This, however, will take time before it is realized. In the meantime, the clamor is made to remove the PCG from the Philippine Navy and be transferred to the DOTC. Given the Administrative Code of 1987, an E.O. can be issued by the Office of the President for such to take place. This, however, would require Congressional action. There are three pending bills that contain this provision, and it is up to the House of Representatives to take action on this.

This conflict over turf between the MARINA and the PCG is carried over in marine pollution issues. Because the function of inspecting vessels is not explicitly stated as part of the MARINA's mandate, both agencies use this as an excuse in blaming each other for non-inspection of sea vessels. According to the MARINA, the PCG is the one mandated to carry out this function, particularly in ensuring that oil separators are present in the vessels. However, the PCG is claiming otherwise. Furthermore, the MARINA claims it has the technical expertise in conducting this activity, although the PCG is provided with the budget therefor.

The recent spate of maritime accidents prompted the MARINA to conduct periodic inspections to ensure0 safety of passenger vessels. This implies that they have the budget to conduct such inspections. They could easily check the ships' provisions for pollution control along with the conduct of safety inspections. This would solve their budgetary problems in carrying out the latter function.

Because of poor monitoring and inspection on the government's part, the private sector has expressed lack of willingness to invest in oil separators for their vessels. They claim that because of present deregulated shipping rates provided under EO No. 213, whereby rates for 3rd class passengers[78] as well as for cargo vessels transporting basic commodities are still being regulated by the MARINA, shipowners cannot afford to make investments in oil separators. However, estimates have shown that investments in oil separators are very much affordable and will not damage cash flow of shipping companies.

5. ISSUES OF THE PRIVATE SECTOR

Filipino Shipowners Association (FSA)

To get the view of shipowners on the shipping industry, an interview with the FSA was conducted. The FSA is a group of Filipino shipowners engaged in overseas shipping activities. The following were obtained from the interview.

In promoting the shipping industry, the government provided financial incentive for investors to avail of. Shipowners can be exempt from duties and taxes for imports of sea vessels to be registered under the Philippine flag, as provided for in RA 7471 s. 1991 entitled "An Act to Promote the Development of Philippine Overseas Shipping". Spare parts for repair and overhaul of vessels are likewise exempted from duties as long as these shall be used in a Philippine dry-docking or repair facility, or the vessel which will use the spare parts is located in a Philippine port.

However, one problem encountered by shipowners when purchasing vessels abroad is the lack of credit sources in the Philippines that could be used for the purchase. Local banks cannot provide the full amount of credit needed. Shipowners have to resort to foreign banks which require the vessels to register in their home country. This would negate the tax-free incentive offered by the government.

With this, shipowners lobbied for the passage of the Shipping Mortgage Act that would allow the vessels to register both here and in the country of origin of the foreign bank providing credit. Otherwise, shipowners would find it very expensive to replace old vessels with newer models. This would necessarily impact on

[78] Passenger-carrying domestic vessels are required to allocate at least 50% of their capacity to third class accommodation. Otherwise, second class accommodation shall be regulated.

environmental management because old vessels are more prone to cause pollution due to lack of modern facilities for pollution prevention and control as well as the inefficient use of energy that causes environmental degradation.

With respect to investments in preventing marine pollution, the FSA claims that all their members have imported ships equipped with oil separators and equipment for proper waste disposal. Although the MARINA does not conduct regular inspections of their vessels, they are confident that the FSA members are not violating any environmental regulation and are willing to have their vessels inspected regularly. Hence, they claim that pollution caused by the shipping industry comes from the domestic shipping sector with outdated vessels that do not possess the necessary equipment to control pollution.

Domestic Shipowners' Association (DSA)

The DSA is an organization composed of the largest domestic shipping lines that ply the major routes in Luzon, Visayas and Mindanao. It was formerly called the Conference of Inter-Island Shipowners and Operators (CISO) and was re-established in 1995 under its new name.

According to the interview with Joy Maitim of the DSA, their association has never discussed environmental issues, although it is possible that individual shipping lines might have their respective environmental protection programs. Their agenda is centered on the issue of rates. As mentioned in the report on the MARINA, passenger rates for first and second class accommodations were deregulated. However, there is a caveat that at least 50% of capacity should be allotted for economy class. Because the economy rates are very low, shipping lines can barely post a positive ROI in a year. Ms. Maitim claims that for the past ten years, they have been averaging 2-3% ROI, despite their ceiling of 12% as mandated by law. Deregulating the first and second classes cannot make up for the losses incurred from the economy class. She further cites that informal studies have shown cargo transport as subsidizing passenger transport, causing shipowners to invest and expand the cargo sector. Because of this, the DSA has not considered investments in pollution control equipment as a priority issue for the association.

O. Lack of Incentives for Investments in the Environment Industry

As the Philippines pursues its goal to become an NIC by the year 2000, industrialization efforts are intensified. Along with this comes increased pollution problems, not just from industry alone but from solid waste problems brought about by increased urbanization. At the moment, the level of environmental investment in the country is relatively low. The IEMP interviewed the private sector and the government why this is so. The following reasons emerged:

- **Lack of compelling business reason to invest.** This is because of poor enforcement of environment-related laws and regulations in the country, coupled with very low fines and penalties that cannot deter polluters. Thus, companies would rather put their money elsewhere instead of investing in pollution control equipment.

- **Uncertain Economic Returns and Benefits.** Traditional computation of economic returns from environmental investments resulted in very low, sometimes negative, rates of return. This is because the social aspect and the long term benefits are not factored in, resulting in unwillingness of companies to undertake such investments. Business, in general, is a conservative sector, and unless the benefits from environmental investments are quantified, companies would continually veer away from them.

- **Shortage of Information.** Latest technologies on environmental improvement, particularly on pollution prevention schemes, are not common knowledge in the business community. Neither is the potential of actually earning profits therefrom. Because of these, companies do not venture into these types of investments.

- **Lack of Capital.** There are several causes of this. One, the low or negative returns on environmental projects do not make them attractive for credit institutions. Second, a lot of small and medium companies lack creditworthiness, hence financial institutions hesitate in providing them credit. Finally, the lack of long-term credit market in the country prohibits environmental investments. Only large companies that have internal sources of capital are able to finance their own endeavors in this field.

P. Constraints in the Availment of Financing

Environmental programs are relatively new in the developing world, including the Philippines. Furthermore, not too many business opportunities have been identified with them, simply because of lack of information that profit can indeed be generated from environmental management activities. Because of these reasons, banks were not aggressive in providing credit. Likewise, the private sector has been slow in picking up business opportunities in the environmental sector.

1. Bank Lending Criteria

Lending policies have prevented proponents to seek funding for environmental investments from banks. The "loan purpose" criteria does not allow for stand-alone environmental investments, particularly projects that are neither expansions of existing businesses nor new projects. In other words, projects that

would decrease companies' costs of operations, such as waste minimization, are not encouraged.

Furthermore, some pollution prevention projects do not meet the minimum size loan requirements of banks and/or the minimum or maximum company asset size. There are loans designed for small companies, as well as those for bigger companies. Accompanying the size requirements is the minimum amount that a company can borrow for pollution control projects. There are some proponents that do not meet the size requirement. And for those who do, some of them do not meet the minimum loan requirement.

There is also the problem of collateral security that some environmental projects cannot provide, simply because there is no purchase of fixed assets. This is especially true for stand-alone projects which are not part of an overall collateral security package.

Some projects do not meet the required 15% internal rate of return banks require. Some of these projects even have negative IRRs. Again, this raises the question on how the IRR should be computed to include long term and social benefits in the equation.

Finally, there is the problem of borrowers with no creditworthiness, hence are deemed high risks for loans. This is especially true for LGUs with less experience in dealing with banks to fund their projects.

2. Cost of Funds

This is related to the problem of low IRRs for environmental projects. Because there are low returns, proponents have a difficult time meeting the interest payments. Some credit facilities have lower interest rates than the commercial lending rate. This encourages more investments in this sector. However, small and medium-scale industries still complain of unaffordable environmental loans, simply because their profit margin is not enough to cover for interest payments for investments with low or negative returns.

Although the government is implementing a new scheme to redefine the EIRR for public investments, private sources of funding have not made any special provisions regarding project appraisal/evaluation in the environmental sector. The Financial Internal Rate of Return (FIRR) is not very flexible in this regard, because it is based solely on balance sheet accounts expressed in monetary units and refers to direct expenses and revenues. However, environmental investments are crucial because of their unique feature of affecting more than the direct beneficiaries of a project. Likewise, not all costs are tangible, and the difficulty of measuring such variables has been a major concern of environmental economists for some time now. Hence, cost-benefit analysis for environmental projects cannot be limited to balance sheet accounting.

3. Poor Track Record of the LGUs with Private Banks

One reason for lack of funding sources for LGU programs is the hesitation of private banks to lend credit to local governments. Admittedly, provinces, cities and municipalities in the country are at varying stages of development. There is a wide disparity in the income levels of these areas, which are usually directly correlated with the capabilities of the local leaders. In turn, creditworthiness is greatly biased towards richer local areas. Hence, these income differences are more often than not exacerbated by the criteria that banks use.

Generally speaking, there are a number of weaknesses of the LGUs related to incompetence in accessing funds for their programs:[79]

- absence of an annual revenue program;
- lack of efficient systems and procedures;
- reliance of provincial treasurers on voluntary compliance of taxpayers or on the efforts of the municipal treasurers to conduct tax information campaigns and collect provincial taxes;
- failure of LGUs to enforce provisions of laws relating to tax compliance;
- dichotomy between assessment and collection of the local business tax; and
- complicated procedures on the payment of taxes, fees and charges.

[79] USAID-LDAP, LGU Revenue Mobilization Overall Study, Manila: May 1992.

III. Sectoral Perspectives on Sustainable Financing Mechanisms for Marine Pollution Prevention and Management

A. National Government Initiatives in Resolving Policy Gaps and Conflicts

The current set of environmental rules and regulations in the Philippines leads one to believe that the country is not lacking in legislation on environmental protection. However, environmental problems abound. The government has been criticized due to lack of political will and the necessary technical expertise in carrying out these rules and regulations. The policy gaps and conflicts identified earlier show that aside from problems of implementation, there are certain stipulations in the law preventing the efficient conduct of environmental protection and management. Equally important is the lack of provisions for sustainable sources of financing for environmental protection activities. Implementing agencies thus find it difficult to sustain environment-related programs. On the other hand, lack of financial incentives and mechanisms discourages the private sector to get into such endeavors. Given the government's meager resources, environmental investments and programs have to compete with social and economic programs. More often than not, environmental programs are less prioritized because of the long-term nature of their objectives. Hence, protection activities may be mandated by law, but are not carried out due to lack of funds.

In answer to this, the government came up with revised environmental laws and renewed efforts in carrying out its environmental management functions. Enumerated here are some of the more significant ones, especially those that have greater impact on the environment.

1. REVISED PHILIPPINE ENVIRONMENTAL CODE

House Bill No. 4, known as the draft Philippine Environmental Code, is the government's concrete answer to calls for sustainable development policies and programs. The Code attempts to rationalize all environmental laws into a single framework, taking into account such issues as sustainable financing mechanisms and market-based incentives. Most of the objectives of the Code are meant to correct policy conflicts and gaps identified by IEMP[80] in their policy studies on environmental rules and regulations. In the recent State of the Nation Address of the President,[81] this bill was identified as one of four priority bills for the Congress in 1996. This is definitely a concrete step towards integrating environmental concerns in the government's economic development efforts.

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[80] Industrial Environmental Management Project of the DENR.

[81] SONA delivered by Pres. F. V. Ramos on 22 July 1996 at the opening of the Philippine Congress.

Following are the major provisions in the Code that attempt to counter the criticisms of present environmental rules and regulations.

Market-Based Instruments (MBIs) and Financial Incentives

One of the points raised was the lack of incentives as well as sustainable financing mechanisms for the private sector in the promotion of government policies on the environment. The Code mentions the inclusion of disincentives and market-based instruments that would encourage promotion of *"the role of private judgment of industrial enterprise in shaping its regulatory profile within the acceptable boundaries of public health and environmental protection"* as part of its objectives.

A National Framework Plan for Water Quality Management shall be formulated whereby water is treated as an economic good and its regulation will be done through economic or market-oriented instruments. In prescribing ambient water quality and effluent standards, the Plan considers the following:

- Variation in water quality standards according to beneficial uses;
- Variation in conditions and land use along the water body or in specific areas within a water body; and
- The technology and economics relating to water pollution prevention and control.

Discharge Permits

The plan introduces the concept of discharge permits for pollution loading from various sources to maintain ambient water quality standards and meet water quality improvement targets. The Permit to Discharge shall be issued by the DENR to owners and operators of facilities that discharge regulated water pollutants. It will specify the limits to quantity of pollutants discharged by the owner/operator in a particular body of water.

Water Pollution Charge System

The permit will be issued together with a water pollution charge system to be implemented by the DENR. The fee will be based on waste concentration or total waste load, or both, depending on the formula that the DENR will generate a year after the Code is made effective. The charge system aims to:

- provide strong economic inducement for polluters to modify their production or management processes in order to reduce the amount of water pollutants generated or to invest in pollution control technology;
- cover the cost of administering water quality management or improvement programs, including the cost of administering discharge permit and water pollution charge system; and

- reflect damages caused by water pollution on the surrounding environment, including rehabilitation cost.

The fees collected shall be kept by the DENR to cover for administrative and program costs for water quality management and to fund environmental improvement and water quality remediation activities.

A study done by Entec Europe Ltd. on Toxic and Hazardous Wastes (THW) provides a sound proposal in implementing water effluent charge system. The timing issue of coming up with the charge system can be crucial in encouraging firms to implement waste minimization schemes. If the charge system is announced before it is implemented, the firms can immediately invest in waste treatment facilities, or conduct PMAs and consequently come up with waste minimization schemes. In short, the investment can easily be justified once the charge system is made public, and if its implementation is imminent.[82]

Waste Management Financial Incentives

For waste management, financial incentives shall be provided by the DTI, the DOF and the DOST *"for registered businesses initiating operations in, but not limited to reduction, recycling, waste exchange, deposit/refund system, composting and other resource conservation and recovery processes through:*

- *abolition of duties and taxes on capital equipment import;*
- *access to credit as established by law;*
- *income tax holidays; and*
- *such other incentives as may be determined by agencies concerned."*

Recycling

Recycling shall be institutionalized in government programs. The DENR is mandated to draw guidelines for proper waste collection, segregation, treatment, storage, transport, separation, recovery and disposal practices and systems. An Integrated National Waste Management Framework Plan (INWMFP) shall contain techniques on waste minimization, such as, but not limited to segregation, recycling, reuse and resource recovery. For ease of collection, the DENR shall formulate a labeling and coding system for the management of all types of waste. GOCCs shall be encouraged to use items made from recovered materials to set examples to the private sector. The DENR shall formulate standards for acceptable items having the highest recoverable materials and prescribe the implementing procedures for promotion of recycled materials. At the local level, the LGUs together with the DENR shall set up waste reduction, resource and recycling centers in their respective municipalities and cities with the following

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[82] Entec Europe Ltd. Toxic and Hazardous Waste Management Project. Metro Manila: January 1996.

considerations: local capabilities, economic viability and environmental acceptability.

Financial Liability

The Environmental Guarantee Fund (EGF) is part of the requirements in the environmental management plan. It is one of the four annexes required in the new EIA process. The EGF is meant to finance emergency responses, cleanup activities or rehabilitation of areas that may be damaged during the project's actual implementation. Note that if the damages are clearly attributable to the project, liability for damages continues even after the project is terminated.

Other proposed financial liability instruments are trust funds, environmental insurance, surety bonds, letters of credit and self-insurance. The choice of guarantee instrument or combinations thereof shall depend on the assessment of risks involved and the financial capability of the proponent. Should the proponent choose an instrument other than the Fund, it is required to furnish the DENR with evidence of availment of such instruments.

Proper Pricing of Natural Resources

Another criticism of the old environmental rules and regulations was the lack of proper pricing scheme for natural resources due to the public nature of these goods. Under the new Code, resource use efficiency, waste minimization, recycling, recovery and conservation shall all be promoted through proper pricing of natural resources. A natural resources accounting system shall be established and integrated economic and environmental indices and indicators will be used to measure actual wealth. However, the Code does not contain a specific provision for assigning the responsibility of pricing to a government agency. In this regard, refinements of the Code are in order, specifically in the institutional aspect of carrying the Code's provisions.

In connection with the improvement of the database on environmental indicators, the DILG is mandated to furnish the DENR with an inventory of all waste disposal facilities or sites throughout the country within three months after effectivity of the Code takes place. This will facilitate formulation of the proposed INWMFP and the components thereof, i.e. the Solid Waste Management Plan and the Hazardous Waste Management Plan.

Environmental Impact Assessment (EIA) System

The Code aims to go beyond the role of the EIA system by institutionalizing it as a tool for environmental planning and as an avenue for public participation. It incorporates the whole process outlined in the revised DAO 21, involving the various steps of scoping, requiring either an EIA or IEE for projects that would impact on the environment, the participatory process for NGOs/POs/affected

communities, drafting of an environment management plan, and setting up of an environmental guarantee fund and monitoring fund. Moreover, the technical aspects of EIA would now include the socioeconomic impact of the project, as well as survey of perceived impacts of the project on the local communities involved.

Programmatic compliance under the EIA system shall be required for *"development consisting of a series of similar projects, or a project subdivided into several phases and/or stages situated in a contiguous area or geographically dispersed,"* as well as for *"development consisting of several components or a cluster of projects collocated in an area such as an industrial estate, an export processing zone, or a development zone identified in a local land use plan."* Included in this is the assessment of carrying capacity of the location determined from ecological profiles which identify constraints and opportunities in programmatic areas. Cumulative impacts and risks shall likewise be taken into account.

On the issue of planning, the DENR is supposed to formulate guidelines on how to identify, assess and mitigate potential environmental impacts of national policies that have bearing on the environment, using EIA tools and techniques. Consequently, environmental concerns are systematically integrated into the development planning process, and programs and projects that are used to implement national policies will incorporate environmental safeguards during the early stage.

Public Participation

The Code has several objectives that address public participation. These are:

- to implement an integrated and participatory management approach in the exploitation, development and utilization of all natural resources areas;
- to protect the right of affected communities to prior informed consent as a primary consideration in the approval or grant of clearance by the State to any undertaking that has serious potential environmental disturbance or otherwise effectively deprives the community of the use and enjoyment of a natural resource base, especially when the lives and livelihood of a large segment of the community are dependent on it;
- to promote public information and education and to encourage participation of an informed and active public in environmental planning and monitoring; and
- to encourage the development and integration of indigenous knowledge and skills of local communities in the preparation of the program to manage the environment. Indigenous cultural practices shall be recognized and respected.

Some of the functions of the DENR in the Code pertain to increasing public participation in environmental management and protection. In particular, the agency is tasked to:

- encourage active participation and cooperation of NGOs, academic institutions and other private groups in the implementation of the pollution prevention and control program;
- accept assistance, whether financial or otherwise, from any public or private organization; provided, that such assistance shall not result in conflict of interest; and
- disseminate information and conduct educational awareness campaigns on the effects of pollution on health and environment, waste management, and resource conservation and recovery to encourage an environmentally action-oriented society.

Furthermore, one of the duties of the Environment and Natural Resources Office (ENRO) is to coordinate with other government agencies and NGOs in the implementation of measures to prevent and control pollution.

More importantly, the EIA incorporates public participation in the early part of the process. EIA reports are evaluated, not only on the basis of technical merits of the reports, but also in terms of the use and timeliness of public participation. This is done at the scoping stage to allow interested parties to voice their concerns and ensure that the study addresses alternatives and impacts. Information on the project, including environmental impacts and alternatives, should be disseminated in a manner and language the public understands. The DENR may require on-site public hearings prior to the issuance of an ECC. Guidelines for the conduct of public participation shall be formulated by the DENR a year after the Code is enacted.

Fees, Fines and Charges

Given the new schedule of fines to be imposed on violators of environmental rules and regulations, the government intends to make violations prohibitive for polluters thereby avoiding past situations of non-compliance with environmental laws. MBIs and financial incentives are meant to encourage procurement of pollution control equipment. Fines, on the other hand, affect decisions on using the equipment. If fines cost more than operating anti-pollution devices, potential polluters would naturally veer away from paying fines. The Revised DAO 21 has its own proposal, albeit lower than the maximum amounts proposed in this Code. Following is the proposed fine structure:

- *For operating without having an ECC - a fine of not more than PhP1 million, depending on the magnitude of the environmental risks;*
- *For actual or imminent exceedance of any pollution or environmental standards under this Code - a fine of not more than PhP100,000.00 for every day of violation.*

Related to the latter, the Environmental Adjudication Commission (EAC)[83] will prepare a rating system for maximum fine to be imposed, *"based on the violator's ability to pay, the degree of willfulness, degree of negligence, history of non-compliance and the degree of recalcitrance."* They shall adjust the fines every three years to account for inflation and to keep them at a level that would deter potential violators from polluting.

The EAC is empowered to order the closure, suspension of development or construction, or cessation of operations until such time that proper environmental safeguards are established and:

1. the ECC has been issued, in case the fine was imposed for operating without an ECC; or
2. it has been established to the satisfaction of the DENR that environmental standards will henceforth be met as a result of such proper environmental safeguards.

The DENR can impose a PhP50,000.00 fine for every violation of provisions of the environmental management plan submitted to the DENR. This fine will be adjusted every three years to account for inflation.

In case the complainant is proven to be malicious and the complaints are baseless, he/she can be fined an amount not over PhP100,000.00. If the complainant is a corporation or partnership, the fine can reach a maximum of PhP1 million.

All fines collected from environmental violations shall be kept by the government, and shall accrue to a common fund to be administered by the DENR as a special account. It shall be used to finance undertaking of containment, removal and cleanup operations of the government in case the pollutant fails to clean up the pollution caused by the project. This will be reimbursed from the polluter, together with other rehabilitation operations deemed necessary to remedy the damage caused by the violator.

Gross violations are defined as:

- three or more violations of the same provision within a period of five years;
- blatant disregard of orders of the EAC, such as breaking of seals or operating despite the existence of an order for closure, discontinuance or cessation of operation; and
- knowingly and deliberately engaging in construction, development or operation of any project without securing an ECC.

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[83] The EAC is a quasi-judicial body created under the Code, with a national and regional structure. It shall have original and exclusive jurisdiction to decide cases involving violations of standards under the Code, as well as cases under RA 6969 and other special laws on the environment, pollution and waste management. It is attached to the DENR only for program and policy coordination.

In cases of gross violations, the EAC can issue a resolution directing the government to file criminal charges against violators. It shall assist the public prosecutor in the litigation of the case.

Institutional Mechanisms in Implementing Environmental Regulations

There are a number of overlapping functions that the DENR has with other government agencies. This is one of the reasons which caused inefficiencies and delays in implementing environmental rules and regulations, as well as in imposing penalties and punishments against violators. In order to avoid this, the Code proposes that the DENR be the lead agency in implementing the Environmental Code. Among its functions are:

- establish environmental quality standards after due consultation with concerned sectors;
- implement the EIA system and evaluate EIA documents;
- prepare and implement comprehensive multi-year and annual plans for waste management and abatement of existing pollution;
- exercise jurisdiction over all aspects of pollution, determine its location, magnitude, extent, severity, causes, effects and other pertinent information on pollution, and take necessary measures or direct the proper party to take measures using available methods and technologies to prevent and abate such pollution;
- exercise supervision and control over all aspects of waste management and promulgate guidelines for proper waste collection, segregation, treatment, storage, transport, separation, recovery and disposal practices and systems;
- establish a cooperative effort among the national government, LGUs, NGOs, and private sector in order to recover valuable materials and energy from wastes;
- regulate the treatment, storage, transportation and disposal of hazardous wastes;
- issue rules and regulations, guidelines or procedures, design criteria governing the preparation of plans and specifications for pollution control devices and waste disposal systems and the accreditation of consultants, contractors and operators;
- call on any government agency, department, corporation, institution and other instrumentalities for assistance in the form of personnel, facilities and other resource when the need to discharge its functions arises; and
- encourage, participate in and conduct continuing studies, investigations, researches and demonstrations on the effective means of controlling, preventing and managing pollution including improvement in the implementation strategy, technology or instrumentation; rationalize the basis of environmental quality standards; on improved waste management and resource conservation techniques; on more effective organizational arrangement; and on indigenous

and improved methods of collection, separation and recovery and recycling of wastes and environmentally safe disposal or non-recoverable residues.

The abovementioned puts the responsibility for all aspects of pollution and environmental management on DENR. In order to ensure that other government agencies do not have overlapping functions, the Code calls for the repeal of other laws that are inconsistent with the Code's provisions such as PDs 1152, 1586 and 984, and E.O. 192. DAO 21 has also been revised to be consistent with the Code.

Relative to LGUs, their responsibilities include:

- preparation of comprehensive land use plans enacted through zoning ordinances which shall be the primary and dominant bases for future use of land resources;
- enforcement of community-based forestry projects, pollution control law, small scale mining law, mini-hydro electric projects, solid waste disposal system and services or facilities related to general hygiene and sanitation in accordance with the provisions of RA 7160; and
- formulation and enforcement of local environmental quality standards, provided that said standards shall not exceed the maximum permissible standards set by national laws and the DENR.

Hence, the DENR is still mandated to set environmental standards. The LGUs may go below the standards, but they cannot exceed those set by the national agency. The DENR may delegate the authority to administer environmental management and regulation to the LGUs, including permit issuance, monitoring and imposition of administrative penalties, as long as the DENR deems the LGU as ready to undertake such tasks. The DENR shall continue its capability-building program to ensure the readiness of the LGUs in promoting environmental management and regulation.

Finally, to ensure consistency and efficiency in dealing with environmental management, the Code calls for the formulation of a holistic national program, with comprehensive plans for each sector to be administered by the DENR. This way, environmental problems will be addressed in an exhaustive manner.

2. REVISED DAO 21

Objectives

The revised DAO 21 aims to strengthen the Environmental Impact Statement (EIS) System by streamlining the procedures involved in conducting EIA. It further ensures that incorporation of environmental considerations are done at an early stage,[84] to avoid complaints of proponents that significant investments had already

[84] Draft Revised DAO 21, s. 1996.

been made when preparing feasibility studies, only to be rejected by the DENR due to environmental considerations. Finally, the social acceptability aspect is now addressed and fully integrated in the EIA process by involving the NGO/PO community in the early stages and making them part of the monitoring team.[85]

Categories of Projects

There are a number of issues addressed by the revised order, most of which are based on policy conflicts and gaps identified in the second report. First and foremost of these is the categorizing of projects according to their effects on the environment, which in turn will determine the required documentation from the proponent. There are three main categories:

- Category A: projects exempted from the EIA process;
    - Those that are unlikely to have any adverse environmental impact;
    - Those that focus on environmental enhancement; and
    - Proposed actions exempted by virtue of Presidential Proclamation.
- Category B: EIA is automatically required
    - Because of their nature, scale and/or number of people potentially affected; and
    - Co-located projects (e.g. projects within an industrial estate) whose proponent may opt to follow a "programmatic compliance" approach as provided for under DAO 11 Series of 1994 .
- Category C: all other proposed projects not classified as Categories A or B for which an initially limited environmental assessment, in the form of an initial environmental examination (IEE), is the basis for determination of the need for detailed assessment, either in the form of an EIA or, in case the significant impact predicted is specific, in the form of a follow-on focused assessment to supplement the IEE report.

Prior to the revised Order, the proponent could make initial recommendations on whether to subject a project to a full-blown EIA or not.[86] Naturally, EMB could reverse this decision. Nevertheless, the assessment report would be prone to biases and false conclusions because the proponent himself would be preparing the document. It would be highly unlikely that the EMB would be duplicating the efforts of all project proponents, hence would sometimes rely on the reports of proponents. This process could lead to issuance of ECCs to projects that can cause negative environmental impacts, albeit no mitigating measures

[85] Draft Revised DAO 21.
[86] Presidential Decree No. 1586, Article III, Section 1.

would be undertaken. This was corrected in the new DAO, it is the EMB that determines what documentation shall be required of any project.

The detailed list of projects in each category is provided in Annex A of the Order. This is an improvement over the old DAO, as the latter did not have an accompanying list. The ECCs for IEE projects are issued by the DENR Regional Offices, while those requiring an EIS are issued by the DENR Secretary or the authorized representative. Meanwhile, for projects requiring an EIA, the EMB is in-charge of those identified as environmentally critical, while DENR-RO are in-charge of those located in environmentally critical areas.

This revised list aims to avoid confusion and arbitrariness in the documentation required of the project proponent. It also addresses the issue of non-issuance of EIAs for golf courses which have been proliferating all over the country. These projects are not exempted from the process anymore.

Screening

The procedure has also been revised. Before the DENR-RO determines whether to require a full-blown EIA or not, a project profile is submitted to the agency upon which a fee of PhP310 per profile is collected. Furthermore, the profile requires the proponent to provide a land use map of the municipality to ensure consistency with local government land use plans and zoning ordinances. The DENR-RO can refer projects to the EMB if the former deems that the latter is more capable of categorizing the project.

If the project requires further processing, i.e. an IEE or an EIA is involved, an additional processing fee equivalent to 0.1% of the total project cost is charged.

Scoping

A new step called scoping is introduced for projects requiring an EIA. The proponent is obligated to specify a range of actions, alternatives and impacts that the project may generate even before an EIA is conducted. This step requires that the proponent consult with the DENR during the early stage of the project to ensure integration of environmental concerns in the design of the project.

Scoping provides a venue for potentially affected parties to voice their concerns to allow proponents to come up with alternatives if the project is socially unacceptable. Before the proponent can conduct an EIA, an early agreement among the proponent, the DENR and the community is achieved. Among the supplementary documents required are the minutes of the meetings/consultations held with potentially affected parties, the issues, impacts (whether direct, indirect or cumulative) and alternatives for consideration and the workplan of the proponent in conducting the EIA.

Ensuring Public Participation and Social Acceptability

The voluntary nature of public hearings was reversed by requiring the activity as part of the EIA technical documents. A survey among parties was conducted to determine perceptions on the effects of the project. The results will form part of the socio-economic impact analysis. The survey should be statistically significant, and should be properly mapped to ensure adequate representation. All aspects of community life will be covered by the survey:

- social;
- economic;
- environment;
- legal;
- peace and order;
- population patterns;
- cultural compatibility; and
- housing/land use.

These consultations will be held once the EIA has commenced.

EIA Technical Aspects

The technical aspects of the EIA are composed of the following:

- EIA database;
- resource inventories;
- ecological profiles;
- carrying capacity assessments;
- socio-economic survey results;
- analytical/mathematical models used;
- environmental risk assessments; and
- other technical details relevant to the project.

Note that the issue of the absence of scientific and technical aspects in the old EIA system is now answered by the long list of technical requirements from proponents in conducting an EIA. Whereas the old Order did not specify any technical requirements and let the EIA Unit determine necessary steps in assessing, the revised Order lists the minimum technical requirements that the EMB shall use to assess the project's environmental impact.

Environmental Management Plan (EMP)

The EMP is another improvement of the revised EIS. Basically, the EMP deals with the management of residual impacts of a project. It aims to enhance positive impacts and alleviate negative impacts. It is an action that forces mechanisms to

ensure that all stipulations in the EIS are implemented by the proponent. Its components are:

- Mitigation Plan. This provides details of the activities aimed at eliminating, reducing or controlling adverse environmental impacts of a proposed project by modifying the design or using appropriate technology to reduce or treat wastes or other pollutants.

- Enhancement Plan. This contains proposed enhancement measures to increase positive impacts, such as income and employment.

- Compensation Plan. This addresses residual, unavoidable impacts including measures to replace and restore any damage to the environment.

- Contingency Plan. This aims to prevent occurrence of accidents based on sound engineering, environmental and construction practices, routine maintenance, safety precautions, training and organization of personnel.

- Monitoring Plan. This monitors residual, mitigated and other impacts that may not have been identified in the EIS to gauge effectiveness of mitigation, compensation and contingency measures recommended by the proponent.

- Accountability and Compliance Reporting Plan. This identifies roles, responsibilities, reports, permits and accountability of stakeholders in the implementation of EMP.

- Institutional Arrangement. This addresses human resources, organization, policy and regulation issues of the project.

Environmental Guarantee Fund (EGF)

Funding for EMP activities will come from the proponent in the form of an EGF. The EGF will be required of all projects that are likely to pose public risks. Public risk in this case is defined as:

- Presence of chemicals listed in the Philippine Priority Chemicals List;
- Extraction of natural resources that require rehabilitation; and
- Presence of man-made pollution control structures that could endanger life and property in case of failure.

The EGF will be used specifically for rehabilitation of environmentally damaged areas due to the operation of the project, including abandonment. Compensation of affected parties as well as community-based environment-related projects will further be sourced from the EGF. Finally, contingency cleanup activities will also be funded by the EGF. Noteworthy is the fact that payment of

actual damages is not limited to the amount of the EGF. A committee composed of the EMB Director/DENR Regional Executive Director as chairman, the proponent as vice-chairman, LGU, NGO/PO representative and a representative from affected community as members, will be responsible for handling the EGF.

Monitoring

A Multi-Partite Monitoring Team will be formed, composed of the following:

- LGU representative;
- NGO/PO representative;
- academe;
- DENR Regional Office;
- relevant government agencies; and
- sectors identified during the deliberation of the EIS.

An MOA specifying members of the team shall be signed by the DENR, the proponent and stakeholders. Noteworthy is the multi-sectoral character of the team, particularly the inclusion of sectors other than the government in the conduct of monitoring activities.

The team will ensure that all aspects of the workplan of the proponent are carried out.

Funding of activities will come from the proponent, ensuring a steady source of funds for monitoring activities. The amount shall be determined by the Team based on the activities outlined in the workplan.

Administrative Appeals

One criticism of the present process was the circuitous process that an appeal goes through, whereby unnecessary steps are involved. To address the issue, the revised Order states that a DENR issuance or denial may be appealed directly to the Office of the President within 30 days of the Secretary's decision. Moreover, it is the DENR Secretary who signs the issuance or denial, making it more authoritative.

Components of the EIS

The whole document will thus be composed of the following:

1) Scoping documents;
2) Social acceptability, including complete documentation of all meetings/public hearings conducted;
3) Technical/substantive aspects of EIA; and
4) Environment Management Plan.

Fines

In the revised order, fines are no longer less than the cost of installing pollution control devices. Project proponents will thus be discouraged to keep paying fines instead of complying with pollution control laws. The ability to pay shall likewise be taken into account when the DENR prepares its guidelines on the rating of fines, as opposed to the non-discriminatory feature of the previous schedule of fines. A downward multiplier will be applied for fines based on the degree of cooperation with the DENR, while upward multipliers will be applied, depending on the severity of the violation, degree of willfulness, degree of negligence and past compliance record.

Operating without an ECC

Projects operating without an ECC and are classified as either environmentally critical and/or located in an environmentally critical area are required to submit an EMP within two months of notification. Violation of this requirement will result in a fine of not more than PhP50,000.00. A schedule is provided for violators under this category:

For projects with a capitalization of PhP1.0 M and above, the maximum fine shall be applied. For those between PhP500,000 and PhP1.0 M, the fine shall be equal to 5% of its capitalization based on the length of the violation:

- 2 years and less: 1%
- 2-3 years: 3%
- 3-4 years: 4%
- over 4 years: 5%

For those with capitalization below PhP500,000.00, the fine will not exceed 3% of the capitalization, based on the length of the violation:

- 2 years and less: 1%
- 2-3 years: 2%
- over 3 years: 3%

Violation of ECC Conditions

Proponents of projects that violate ECC conditions will be required to submit a written explanation of the violation within 15 days of notification. If, within this period, the EMB Director or the RED deems the violation unjustified, they can impose a fine of not more than PhP50,000.00 per violation of the ECC. The proponent will have to settle all requirements within 15 days of notification.

Further violations will result in cessation of operation and revoking of ECC. The suspension may be lifted only after correcting all violations and payment of penalties.

For the first violation, the same fines as that of operating without an ECC shall be applied. For subsequent violations, an additional 30% shall be used.

3. NATIONAL LAND USE CODE

Environmental degradation has partly been the effect of growing conflicts in land use, accompanied by increasing scarcity of land due to mismanagement. These land use conflicts prompted the government to come up with a comprehensive plan that would address these issues. In addition to this, the proposed plan attempts to resolve turf issues among government entities and delineate each other's functions with respect to land use planning and program implementation.

The pending National Land Use Act entitled "An Act Providing for a National Land Use Policy and Planning Framework and the Implementing Mechanism Thereof" is the government's answer to land use problems. It contains principles and policies that spell out land utilization and allocation in the country. Furthermore, it covers all lands, minerals and waters in the country, including air, whether private or government-owned, and/or in possession of individuals, communities or groups of people.[87]

National Land Use Planning Framework

The Act shall provide guidelines for all levels of planning. It identifies general land use classifications for planning, including criteria for determining land utilization in each classification. The categories include:

- protection land use, i.e. NIPAS areas, areas outside NIPAS that require similar rehabilitation and protection measures and hazard-prone areas;
- production land use, i.e. agricultural areas, coastal and marine zones, production forests, mineral lands, industrial development areas and tourism development areas;
- settlements development, i.e. residential, commercial, industrial, institutional, tourism, utilities, waste disposal, recreational and transportation networks; and
- infrastructure development, i.e. power plants/stations and associated transmission line facilities, water supply systems, airports and airlanes, seaports and waterways, fishports, farm-to-market roads, major roads, bridges and railway trunklines, waste disposal facilities, educational/recreational and sports facilities, health facilities, telecommunication stations, disaster mitigation facilities and agricultural research and development farms and stations.

[87] NEDA. National Land Use Act of the Philippines, Final Draft. Pasig, Metro Manila: 29 November 1995.

A national system for land resource classification, delineation and allocation shall provide the framework for local plans. There will be standard criteria, procedures and mechanisms for assigning and/or changing land uses.

Institutional Mechanisms

In accordance with the Code, LGUs shall maintain principal responsibility in determining appropriate land use and allocation within the area through their physical framework and land use plans. The improvements introduced by the Act are in the institutional mechanisms used in physical and land use planning. The HLRB will be reconstituted to form the secretariat of the National Land Use Commission which will have planning, regulatory and quasi-judicial functions. The Commission will be directly under the Office of the President with the Executive Secretary as its chairperson.

To ensure consistency and quality control among local plans, model zoning ordinances on land use classification, physical planning, estate development and zoning are provided.

Financial Mechanisms

A welcome innovation in the Act is the introduction of sustainable financial mechanisms for the implementation of the government's land use program. For instance, agricultural land use conversion taxes will be imposed. The tax aims to encourage certain land uses, as well as to translate land use conversion into financial gains. The allocation of the proceeds from these taxes includes:

- for the Special Agrarian Reform Tax and
- for the Local Land Development Tax.

The Department of Agrarian Reform (DAR) is mandated to issue orders of conversion prior to the issuance and approval of any permit for agricultural land use changes.

Should the owner or developer of the converted land fail to complete its development, penalties shall be imposed thereon, as provided for by Section 139 of the Act.

Another mechanism is the establishment of special land development fund from proceeds from local land development tax. The fund will be utilized for "land use planning and zoning activities, operations of their respective waste disposal systems and maintenance of local park and recreational facilities as determined by the local sanggunian."[88]

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[88] Ibid.

Cities and municipalities may further levy and collect annual taxes on idle lands worth not more than 5% of the assessed value of the land as determined by Section 218 of RA 7160. Corollary to this, the coverage of and exemption from the imposition of idle land tax will be determined by provisions of Sections 237 and 238 of RA 7160.

Coastal and Marine Zones

The use of mangroves for preservation of selective production and wildlife sanctuaries takes precedence over other uses. In particular, the Act specifies that these areas cannot be converted to other uses (Article Two, Section 7). Other mangrove areas, when classified as such but are devoid of mangrove stands, shall likewise be preserved. The DENR is mandated to undertake reforestation activities therein within a period of 10 years. On the other hand, fishponds that are inefficient are converted back as mangrove forests.

Other areas not classified as mangroves can be subjected to other uses such as recreation and tourism, provided that no environmental degradation shall occur.

Agencies mandated to promote policies on development of coastal and marine zones include the DA, the PCG, the DENR and LGUs concerned. The policies include:

- assessment of policies on jurisdiction, administration and management of remaining mangrove and inland resources;
- assessment of bio-ecological characteristics of mangrove and inland coastal areas to identify appropriate rehabilitation and development schemes and projects for better management;
- assessment of water quality in coastal areas affected by industry; and
- review of existing policies on international fishing agreements and practices and the delineation of territorial fishing grounds among nations.

Moreover, 90 days after the effectivity of the Act, the DA and the LGUs concerned are mandated to develop an integrated system for coastal and marine resources management. The system aims to integrate the fisheries, industries, tourism, shipping, oil exploration and other economic activities on marine resources.

Waste Disposal Sites

Each city or municipality is mandated to allocate land for waste disposal, subject to the conduct of an EIA. This will necessitate the LGUs to have their respective waste management programs. Should no site be identified, the LGU can enter into an agreement with other cities and/or municipalities for establishing a common waste disposal site. The DENR shall initiate corresponding guidelines and

coordination activities. This ensures that waste management programs are in line with sectoral priorities of the national government.

Section 167 of Chapter 17 specifies alternative uses of government-owned lands, which include the location for waste disposal systems and other priority infrastructures/utilities defined in Sections 50 and 54 of the Act.

4. GREENING THE EIRR: THE TOOL FOR PUBLIC INVESTMENT PROGRAMMING

In line with the shift in economic development planning towards incorporating sustainable development policies, the NEDA has embarked on a project that incorporates analysis of environmental costs and benefits into current methodologies used for estimating economic and financial rates of return as part of project appraisal.[89] The appraisal is the basis for investment decisions of the Investment Coordinating Committee (ICC).[90]

The ICC ensures that only those projects proven to be financially, economically and technically feasible are allocated with resources. It uses economic, financial, technical, social and institutional standards in evaluating project proposals. The evaluation results become the basis for the total project configuration, pricing of products and/or services that come out of the investment, and how the cost of investment shall be shared by the various implementing agencies.

Presently, project evaluation takes into account environmental considerations through:

- checking environmental soundness of proposed technologies;
- ensuring the preparation of EIS and/or the issuance of ECC; and
- identifying environmentally-related benefits and costs that have to be quantified by the proponents and the Secretariat.

However, the present system does not reflect environmental concerns in the pricing scheme of the project appraisal. There is no quantification of environmental externalities through the figures reflecting economic benefits and costs. For instance, adoption of "green technologies" is not reflected in the computation of economic benefits. Furthermore, project proponents do not usually comply with PD Nos. 1151 and 1596, which require environmentally critical projects and those located in environmentally critical areas to submit an EIS and project description to the DENR-EMB. Even if they do submit an EIS, the document is used more as a

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[89] IEMSD. *"Greening the EIRR."* Quezon City: 1996.

[90] The ICC is an inter-agency committee, coordinated by the NEDA, which ensures that the total level of and individual allocations to public investment are consistent with macroeconomic targets. It also coordinates with the Development Budget Coordination Committee (DBCC) to ensure that only those projects with ICC approval are included in the proposed budget year's "baseline budget".

regulatory tool, i.e. only in fulfillment of the requirement before a project can be implemented. With the implementation of the EIRR project, the envisioned role of the EIS would be to serve as a planning tool, whereby it will guide project proponents on how best to design their projects.[91]

The project aims to integrate environmental income accounting into the computation of EIRR. Environmental externalities, which include direct and indirect effects of a project on the environment, will be computed in a project's appraisal, based on methodologies adopted by international financing institutions and current literature in resource economics. Furthermore, techniques in quantitative economic comparison of alternative technologies on how best to pursue the project to make it more environmentally sound shall be developed. Data for the generation of environmental costs and benefits will be gathered from official statistics and national income accounts, from site surveys, from the EIS and from technical specifications of the project. Workshops will be conducted within and by NEDA to introduce improved project appraisal system to relevant agencies and organizations. An appraisal manual will likewise be drafted by the agency to guide project proponents, as well as project evaluators and analysts, i.e. the ICC, the NEDA Secretariat and government implementing agencies. It shall contain new project evaluation guidelines which incorporate valuation of environmental impacts into the economic analysis of a project.

Thus, the final output of the project shall include:

- An ICC policy that articulates what environmental costs and benefits are to be included in project cost-benefit analyses;
- Techniques on environmental costs and benefits valuation, that shall be incorporated in the NEDA project appraisal course and handbook;
- Linkages with NSCB[92] for generating the needed database for project planners and analysts ;
- Linkages with other projects such as IEMP[93], MEIP[94] and ENRAP[95];
- Assistance to ICC on appropriate cost recovery mechanisms and final pricing of goods and services that will be generated by projects based on their impact on the environment and accelerated depletion of natural resources;
- Assistance to ICC in developing a burden-sharing formula between the national government and the LGUs for devolved activities with large environmental externalities; and
- Capability building for a core group within the NEDA Secretariat that will specialize in environmental cost and benefit valuation techniques through training, expert advise and information materials.

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[91] IEMSD. *"Greening the EIRR..."*
[92] National Statistical Coordination Board
[93] Industrial Environmental Management Project
[94] Metropolitan Environmental Improvement Project
[95] Environmental and Natural Resources Accounting Project

5. OTHER GOVERNMENT EFFORTS: INTERNAL POLICY CHANGES

There have been significant internal policies being promoted in certain government agencies that are geared towards promoting environmental protection. This reflects the increasing awareness within the bureaucracy of the need to internalize environmental concerns in their basic mandate and functions, not just adding these on to the list. In other words, qualitative changes have been attempted by some agencies to integrate environmental concerns in their regular activities.

Department of Agriculture

The DA, for one, has programs that aim to harness appropriate cost-efficient and environment-friendly strategies and technologies, which include:

- promotion of ecological approach to crop cultivation;
- assistance to LGUs in the prevention of environmental degradation; and
- restoration of productivity and ecological balance of island waters.

Department of Energy

The Department of Energy, on the other hand, created an environmental unit in-charge of monitoring compliance of the energy sector with environmental regulations. It is also developing an environmental database and is currently integrating environmental concerns in energy planning.

Environmental Management Bureau (EMB)

The EMB has developed strategies for integrating environmental concerns into its planning and project implementation activities. It provides technical assistance to regional offices regarding environmental quality management.

Board of Investments (BOI)

On the provision of financial incentives and disincentives, the BOI requires firms to import only brand-new equipment to help reduce energy and water consumption and minimize pollution. It further requires an ECC before an environmentally critical firm can operate commercially. Tax exemptions and incentives are granted to firms which consider the environment their responsibility. The establishment of an environmental unit has been approved. This will enhance the capability of the BOI to address environmental concerns. Meanwhile, the DOF has provisions in the Omnibus Investments Code which state that companies using anti-pollution devices may be given incentives.

Finally, NEDA is integrating environmental considerations in its various activities, especially in the formulation of the Medium Term Philippine Development Plan and the Long Term Development Plan. A separate Technical Working Group on Environment and Natural Resources was recently formed to integrate environmental concerns in the long-term plan. Various studies are being undertaken to explore mechanisms and processes which will mainstream environment into the agency's mandate. With respect to project evaluation and investment programming, it is currently conducting a study on how to "green" EIRR computation.

Efforts to upgrade land use planning include the formulation of terms of reference (TOR) for capacity building for sustainable land use planning. Six major tasks are involved:

1. Preparation of the TOR for subcontracting the preparation of land use plans for LGUs. These TORs will specify the scope of services of the consultants, content of the plan including types and scales of maps, etc. The package will also provide a model zoning ordinance at the provincial and municipal levels.

2. Directory and brief profile of consulting firms experienced in the preparation of land use plans.

3. Preparation of guidebooks for sustainable land use planning and coastal areas land use planning. These will provide the procedural and technical guidelines in preparing integrated land use plans covering agriculture, forestry and coastal areas within the context of sustainable development. A separate guidebook on integrated coastal land use planning shall also be prepared separately by the contractor.

4. Study on an incentive system for LGUs to prepare land use plans. This will elaborate on possible schemes (e.g. increasing IRA allotment, facilitating technical assistance from GOP and foreign funding institutions in industrial, agricultural, forestry development, etc.) to encourage LGUs to invest time and resources in the preparation of plans. Supplementing the incentive systems will be existing command and control measures.

5. Brief study on the linkages and integration of forestry, coastal, provincial, town/municipal land use plans. Linkages with other types of plans, e.g. the Physical Framework Plan, Forestry Master Plan, Agricultural Development Plan and other spatial plans will be taken into consideration.

Consultants act as resource persons for on-the-job training on sustainable land use planning for LGUs. Coverage will include the use and application of

guidebooks developed. Output of the training will include updated sustainable land use plans of LGUs.

B. Environmental Investments

1. Types of Investments

Environmental considerations in the country become more pronounced in the 1990s. This was translated into an increase in environmental investments. Currently, both the public and private sectors are involved in a number of activities that fall into any of the three categories:

1) Actual or proposed compliance-related investments. These refer to projects that are undertaken to comply with regulations of the DENR/EMB, foreign owners, foreign customers, external multilateral and bilateral donors and financial institutions. Included are investments made to secure an ECC, i.e. those made in the course of the EIA process, or to remove Cease & Desist Orders.

   A significant number of these projects are for end-of-pipe treatment, e.g. wastewater treatment facilities. Costs for such would cover engineering and design, equipment procurement, civil works design and construction, laboratory set-up, operation and maintenance training and initial inventories of chemicals and reagents. Operation and maintenance includes labor, utilities, laboratory analysis and ongoing research and development and engineering support.

2) Pollution prevention investments. The Pollution Management Appraisals (PMAs) conducted by IEMP would fall under this category. The PMAs aim to identify ways of reducing pollution at its source. Some of the recommendations made by the IEMP PMAs include:

   - various waste minimization options;
   - low cost/no cost housekeeping and maintenance items;
   - improved monitoring and collection of baseline data;
   - employee incentive and training programs;
   - sale or use of manure as feed and/or fertilizers;
   - water conservation;
   - material substitution;
   - improved material reuse and recovery;
   - improvements to existing wastewater treatment facilities;
   - use of treated wastewater for irrigation;
   - steam heat recovery for boilers, drying or process water;
   - installation of incinerators at farms; and
   - installation and operation of biogas digesters at farms.

3) Other types of investments in various stages of consideration. Examples of these would be:

- major process changes requiring large capital investments;
- new venture for hazardous waste collection transport and disposal;
- BOT or BOO schemes for common wastewater treatment facilities;
- BOT or BOO schemes for landfills;
- waste-to-energy projects;
- delivery of environmental consulting services;
- project development and financial packaging services for environmental investments; and
- privately-owned environmental investment funds.

2. BORROWING NEEDS

In order to pursue the above, project implementors will require financing for the following:

1. Working Capital Loans and Lines of Credit. This covers most of the non-asset or "soft" costs involved in environmental investments, i.e. EIA preparation, environmental management programs, feasibility studies, low cost/no cost improvements and increased management and labor requirements associated with training and increases in staff. Most of these cannot be financed on a stand-alone basis because they do not offer any specific collateral security.

2. Equipment Loans or Leases. This would apply to air pollution control devices, water and air monitoring equipment, those related to wastewater treatment such as aerators and mechanical sludge handling equipment.

3. Construction Loans. A significant portion of wastewater treatment investments, such as construction expenditures for site development and civil works, fall under this category.

4. Mortgage Loans. This would apply if land were included in the investment, which can be pledged as collateral. This can be manipulated to serve as an incentive for firms to locate outside of Metro Manila and other highly populated areas.

5. Foreign-Currency Loans and Export Credit Loans. This is sometimes necessary for imported equipment, such as air pollution control devices, heat exchangers and heat recovery equipment and incineration equipment.

6. Project Loans. This refers to funds borrowed directly or indirectly from donor agencies, or from providers of non-recourse project financing. Funding for BOT or BOO projects for combined wastewater treatment facilities usually fall under

this category. In these cases, all of the project's costs, including soft ones, are part of the financial package.

3. SOURCES OF FINANCING

To meet these borrowing needs, a number of sources have been identified in the IEMP study on funding sources for environmental investments. These are:

1. Internally Generated Funds from Companies

Presently, most environmental investments come from corporate funds. This is due to the lack of incentives for bank borrowing, given that most small and medium scale industries enjoy a mere 10-15% profit rate, while bank rates are usually in the higher range. Incentives can thus be provided for increasing corporate funds for environmental purposes.

2. Development Bank Wholesale Lending Programs

Development Bank of the Philippines

The Development Bank of the Philippines (DBP) is a government-owned bank that deals with wholesale and retail financing. Last 29 March 1996, the bank signed a loan agreement with OECF providing for a Y5,158 million facility to be relent to the private sector for pollution abatement and environment protection projects. The program for the facility is named "The OECF Environmental Infrastructure Support Credit Program (EISCP)."

The objectives of EISCP are:

1. to promote the protection and the enhancement of the quality of the environment; and
2. to mobilize, encourage and support activities and investments in environment-friendly projects.

The fund has two components: Y5,000 mil or PhP1.25 billion for relending, and Y158 million or PhP40 million for technical assistance. The loans will be relent in pesos and the repayment term is 3 to 15 years with a grace period of 5 years. The interest rate is fixed at 11% per annum, to be reviewed by DBP and OECF on March 21 and September 30 of each year. In the event that the rates change, these shall apply to new loans. Filipino citizens or corporations organized under the laws of the Philippines, at least 70% or whose capital is Filipino-owned, are eligible to avail of the loan.

The fund can be used for four basic types of pollution control projects:

- pollution treatment;

- pollution minimization/clean technology;
- toxic and hazardous waste management; and
- solid waste management.

In particular, the following projects are considered eligible for financing:

- installation of facilities and services for pollution control and abatement;
- installation of facilities and services for wastewater treatment, waste minimization and toxic and hazardous substance treatment and management;
- installation of equipment and services for production process improvement to reduce waste generation and increase resource recovery;
- installation of facilities and services to reduce, recover and/or recycle waste during manufacturing or production activities;
- resettlement of facilities, consulting services and other operating costs necessary for the effective implementation of environmental projects;
- procurement of instruments to monitor level of emissions/effluents; and
- installation of common treatment facilities for groups of industries located in the same area with similar wastes.

The following industries are considered of primary importance for pollution abatement projects:

- food processing;
- piggery;
- beverage production;
- dye and textile production; and
- chemical and petrochemical industries.

For waste minimization and pollution control facilities, the following industries will be prioritized:

- cement plants;
- automotive manufacturing;
- battery manufacturing;
- building supplies;
- commercial laundries;
- electronics;
- slaughterhouses, fish, fruit and vegetable canning, milk and dairy products, vegetable and animal oils;
- metal finishing;
- paints and solvents;
- pharmaceuticals;
- pulp and paper;
- tanneries; and

- hospitals and clinics.

The technical assistance component is geared towards improving the capability of DBP in evaluating environmental projects.

The fund is expected to be available by late 1996. According to DBP officials, they will aim for a maximum of one month of processing upon completion of requirements of the proponent before the loan is released.

Land Bank of the Philippines

LBP is the other government financial institution involved in wholesale and retail lending for development programs and projects in the country. It was initially intended to support land redistribution efforts of the government through the Agrarian Reform Program in 1963. Since then, it has evolved into a full scale government financial institution involved in various sectoral programs in the countryside. Just recently, it has set up an environmental unit (EU) tasked to evaluate the environmental component of all proposals submitted to the bank. The EU sees its role as facilitator, i.e. it assists the proponents in ensuring that the proposals are in compliance with environmental laws and regulations. Specifically, the EU is tasked to:

- review the project description of each sub-project to determine environmental effects;
- assist in reviewing or preparing an EIA, the cost of preparing the EIA to be shouldered by the sub-borrower;
- liaise with the DENR-EMB to accelerate the processing of official environmental clearance and permits; and
- maintain a list of qualified environmental consultants to assist in complying with the requirements of the CLF and other special financing programs.

Regarding the last point, the LBP eventually hopes to come up with a list of accredited consultants/experts by both the LBP and the WB. This list will be made available to all interested parties, the objective of which is to facilitate the preparation of an EIA and EIS for project proposals in both wholesale and retail lending.

At this point, the EU is concentrating on wholesale lending activities. It needs to increase its manpower to cover all lending activities and funds of the bank. Part of its efforts towards this end is to conduct training sessions for bank personnel on the role of the EU and consequently integrating the unit into the whole credit evaluation process. This is in line with the MOA dated 26 June 1992 mandating all government financial institutions to integrate environmental concerns in the credit process. In particular, it specifies that DBP and LBP should set up

Environmental Units *"whose responsibility is to pre-screen, check consistency and completeness of documentation requirements and pre-evaluate PDs prior to endorsement to EMB."* The objective of this is to create mini-DENRs in each of these institutions, thereby devolving the task of ensuring that proposals are consistent with environmental protection regulations and programs.

A concrete step towards this direction is the MOA between the bank and the DENR. The MOA allows the bank to issue a loan for backyard and small scale industries that are granted exemption certificates from undergoing the EIS process. The DENR has a list of projects that are given such exemptions. If the bank sees that the proponent is part of that list, then it can issue the loan at once without having to wait for the DENR regional office to issue the exemption certificate. This is still under negotiation, though. Nevertheless, it is a positive step towards facilitating the credit process without compromising environmental concerns.

One of the major funds handled by the bank is the Countryside Loan Fund (CLF) II, a fund from the International Bank for Reconstruction and Development (IBRD)-World Bank. The CLF is a credit facility for participating financial institutions (PFIs) and the LBP serves as a window for these PFIs.

Projects eligible for funding include any environmental protection project, such as wastewater treatment facilities, bio-gas facility, etc. Other eligible projects include:

- any agriculture-related productive activity, e.g. aquaculture;
- any food or agro-processing activity, e.g. canning;
- any countryside-based manufacturing activity that generates employment/export, *e.g. garments;*
- any service-oriented project that supports economic activity in the countryside, e.g. transportation;
- any countryside-based tourism-related project, e.g. hotels; and
- any countryside property development project, e.g. industrial estate development.

The following are eligible PFIs:

- commercial banks/unibanks;

The fund can be used for both incremental working capital and fixed asset investments to construct new productive facilities or expand existing ones for incremental capacity to be generated, or reinvested in existing enterprises. It cannot be used for land acquisition.[96]

3. Commercial Banks

Private commercial banks have not been very much involved in environmental investments except to assist borrowers in obtaining ECCs for loans that need to meet DBP environmental requirements.[97] There were no constraints in increasing banking participation except for the perception of risk associated with these kinds of projects.

4. Private Project Financing

This may become available for large projects, such as energy projects, BOTs for infrastructure and large industrial borrowers, most often from foreign sources. Lenders would include the IFC or the Private Sector Lending Group of the ADB. Such projects would need to demonstrate acceptable ownership, management, technical and market issues and contractual relationships in addition to financial feasibility. Loans less than US$5 million may not make sense for private project financing.

5. Investment and Venture Financing

Several venture capitalists and investment bankers have expressed willingness to invest in environmental businesses if they see the potential for high and fast returns.[98] IEMP interviewed a number of investment bankers and they mentioned that they were considering a few environmental investments. One group specified infrastructure as a high growth area, including BOT projects for water and wastewater treatment. Others are considering setting up investment funds for environmental or "clean" investments.[99]

6. Government Budget Allocations/Multilateral Donor Direct Investment Loans

The LGUs are now in-charge of providing municipal infrastructure, including those for waste management and ports development. In this regard, budgetary allocations are expected to reflect programs that would focus on environmental infrastructure. Moreover, provisions in the LGC now allow the LGUs to deal directly with multilateral institutions provided the amount being negotiated does not exceed PhP300 million, as these projects would have to go through the

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[96] Land Bank of the Philippines. Brochure entitled "*The Countryside Loan Fund II.*"
[97] IEMP. Financial Resources to Fund Environmental Investments. Manila: 1 December 1993.
[98] IEMP. Financial Resources...
[99] IEMP. Financial Resources...

NEDA Investment Coordinating Committee process (the process used for national government agency programs).

7. Penalties, Fines, User and Effluent Charges

Penalties and fines have not been major sources of funding for environmental investments because of the small amounts involved. The draft Environmental Code aims to correct this by introducing a schedule of fines that approximate marginal cost for the private sector to invest in pollution abatement equipment, as well as accounting for inflationary tendencies in the economy. Effluent charges are likewise introduced in the Code, the guidelines for the implementation of which shall be drafted by the DENR a year after the Code takes effect.

8. Multilateral and Bilateral Donor Grants

The USAID, WB and OECF have funded major environmental improvement projects in the Philippines. The ADB is also heavily involved in providing funds for environmental investments. Some details on two foreign donor agencies that focus on environmental investments are provided below:

United States - Asia Environmental Partnership

The US-AEP is a USAID-led organization founded in 1992 to assist the Asia/Pacific region in addressing environmental degradation and sustainable development issues through mobilizing US environmental experience, technology and practice. Corollary to this, it provides services such as providing market information, marketing advice and financial assistance for US firms to penetrate the Asian market to provide environmental products and technologies, i.e. creating more jobs in the US labor market. Various US government departments and agencies are involved therein, as well as businesses and NGOs that work with 35 nations and territories in Asia and the Pacific. It is initially intended to provide assistance for ten years from its formation.

The rapid economic growth in East Asia (save one or two exceptions) became a growth model propagated worldwide. However, there are certain questions on the sustainability of the growth model primarily on the effects of rapid industrialization on the environment. These were lessons learned from experiences of the first world countries which were able to enjoy the fruits of economic growth without having to worry about environmental issues then because the developing world still has very vast and rich natural resources. But because Asia, which makes up more than 50% of the world's population, is becoming developed, these natural resources are fast dwindling and environmental degradation in the area has become a worldwide concern.

On the other hand, the US has constantly been a leader in technological development. Environmental management has been considered as one of its areas of expertise. In this regard, the US government, through the USAID, saw the opportunity of coming up with a new model of cooperative development in Asia, one that makes use of the growing demand for environment-friendly technologies, i.e. Asia, and the relatively abundant supply of such technologies, i.e. the US.

Current Thrusts of the Program

Its specific objectives are:

- stemming the loss of biodiversity in Asia;
- preventing and controlling industrial pollution;
- assisting in the creation of urban environmental infrastructure;
- improving energy efficiency; and
- employing renewable energy technologies.

The three major components of the organization are the following: Clean Technology and Environmental Management (CTEM); Environmental Infrastructure in Urban Areas (EIU); and a Framework of Policies, Constituencies, and Public Awareness for sustaining clean production. Interwoven among these three components is the Environmental Exchange Program (EEP).

CTEM

CTEM is the core strategy of US-AEP. It aims to improve operating efficiency and environmental performance by concentrating on three spheres: incentives to persuade companies to refine practices; capacity of businesses to respond to inducements; and the transfer of technology that takes advantage of incentives and capacities within a given business sector or country.[100] In expanding incentives, it develops and disseminates public policy by bringing together key players and experts to provide technical assistance to address specific problems. To increase capacity, it develops partnerships between Asian and American organizations, particularly those that are in the same industry, including the academe, government and NGOs. In transferring technology, it has three information centers in Asia, one of which is in the Philippines. It also has technical experts stationed all over Asia and it provides incentive grants administered by the National Association of State Development Agencies (NASDA) and the Council of State Governments (CSG).

EIU

It is estimated that more than US$1 trillion will be needed to finance the urban infrastructure demands of Asian cities in the next ten years. To be able to position themselves well into the Asian urban infrastructure market, US-AEP has

[100] US-AEP. 1995 Annual Report.

maintained its presence in key cities in Asia. It has a Commercial/Environmental Specialist based in ADB which allowed US technology consultants to avail of US$3.2 million in providing technical assistance and planning. It further has infrastructure representatives in Thailand and Indonesia that render expertise in creating proper investment climate for water supply, wastewater, solid waste and hazardous waste projects at the municipal level. It also sponsored workshops on privatization for municipal officials through the Institute for Public-Private Partnerships and the Center for Financial Engineering in Development. Engineers in the US and all over Asia held various workshops which focused on urban infrastructure in Asia, as well as on financial mechanisms to support these projects.

FRAMEWORK OF POLICIES, CONSTITUENCIES AND PUBLIC AWARENESS

The agency focuses its efforts on specific conditions of the country where they operate. The assistance provided depends on issues that hamper the furthering of environmental programs in the country. It thus tries to ensure that the necessary institutional support for its infrastructure programs will be there. Some of these interventions include sponsoring short term technical assistance and training in the US, exposure trips for Asian journalists or NGO leaders in the US and meetings between American experts and industrial trade associations or finance ministers.

EEP

This component is managed by the Institute for International Education (IIE) which is a large nonprofit educational and cultural exchange organization in the US. It provides Asian professionals and relevant organizations and businesses to address their most pressing environmental problems. There are three kinds of exchanges involved:

Environmental Business Exchange. Asian participants identify sources of US technology, observe key facilities and technologies first-hand and evaluate their suitability for Asian applications. American participants may also travel to Asia to evaluate the scope of environmental problems and suggest solutions that may draw upon US sources for appropriate technologies and practices.

Environmental Technical Exchange. Asian leaders are provided with short term technical experiences on a variety of topics, e.g. incineration of hazardous and industrial waste, solid waste management, etc.

Environmental Fellowships. These provide Asian and US professionals with practical work experiences for exchanging information and expanding their understanding of environmental issues and various approaches to solving problems. They may be placed in businesses, NGOs or government agencies.

Asian Development Bank[101]

The ADB has committed itself to promoting environmentally sustainable economic development within its developing member countries (DMCs). Along with social concerns, environmental issues rank as one of the two most important priorities of the bank. Under its Medium Term Strategic Framework for 1994-1996, there is an almost equal amount allocated between projects with economic growth goals and those with social/environmental objectives. Its Office of the Environment (OENV) ensures that environmental considerations are appropriately integrated and monitored in each stage of the project cycle in the bank's various technical assistance and loan operations. The functions of the OENV include:

Environment review of projects and programs. The bank uses its own EIA and IEE process to assess the impact of a project on the environment. On this basis, it determines whether a project is feasible for ADB funding or not. In addition, it requires the use of Environmental Loan Covenants (ELCs) which require borrowers, executing agencies and guarantors to incorporate certain environmental commitments during project implementation. Sometimes, even upon approval, a project is still subjected to Conditions to Loan Disbursements (CLDs), whereby releases of loan tranches are conditional upon meeting the requirements specified therein. Failure to meet the requirements will result in withholding of funds.

Promoting environmental lending and designing projects and programs with environmental objectives. ADB plans to continually increase the number of technical assistance grants and environmental lending in the environmental sectors of its DMCs.

Country operations work. The extent of involvement of ADB in the environmental sector of its DMCs depends largely on the environmental agenda of the countries themselves. Hence, the strategies of the bank vary for each country. Experience has shown that DMCs have not put environmental issues on top of their priorities. Nevertheless, it attempts to influence the prioritization scheme of governments by conducting capability-building activities in the environmental sector.

Mobilizing financial resources for environmental programs. Given the growing scarcity of ODA funds for developing countries, co-financing arrangements are being undertaken by ADB together with other financing institutions. A major criteria used in choosing environmental programs is the track record of the country with respect to repayment, as well as its reputation for efficiency.

Building environmental institutional capacity in DMCs. The poor management of resources in DMCs is usually attributed to poor capacity. Poor capacity, in turn, is brought about by scarcity of funds. The problem is perpetrated by the fact that poor

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[101] Phua, Hia. *"The Asian Development Bank: Policies on the Environment and Private Sector Financing."* Quezon City: 9 August 1996.

management of resources also exacerbates the problem of scarce funds. Hence, the solution that ADB sees involves human resource development, particularly the upgrading of capabilities in project implementation. Currently, the bank has over 160 institutional strengthening projects and over 50 regional technical assistance projects for building environmental management capabilities. The bank recognizes the importance of involving NGOs in all aspects of the project and has increasingly enlisted NGOs in the assessment of people's needs, demands and absorptive capacity. ADB has further provided technical assistance in strengthening international institutions such as the ASEAN Environment Program, the Interagency Committee on Environment and Development and the South Pacific Regional Environment Programme. The bank has translated the Rio declaration into an action plan that it intends to pursue in the medium term. It identifies priority areas for assistance and specifies the type of assistance that will be provided.

9. Innovative Financial Mechanisms

Other sources would be innovative schemes such as the debt-for-nature swap. The US government has applied this scheme in the Philippines through the set-up of the Foundation for the Philippine Environment (FPE). Initially, FPE funding was meant only for biodiversity conservation projects. Those that deal with pollution were not eligible for funding under this scheme. However, because the organization subscribes to the theory that poverty alleviation is the solution to major economic and environmental problems, it has decided to expand its coverage to include alternative livelihood projects. It believes that only when poverty is addressed can conservation programs become sustainable. Hence, the organization has approved funding for certain solid waste management programs being implemented on a small-scale basis, which include alternative livelihood components.

4. LGU SOURCES OF FINANCING

Taxation

Before decentralization was put into law in 1991, a major constraint in the implementation of LGU programs was revenue mobilization. According to the study by the Center for Research and Communication (CRC) on policy analysis relating to local governments:

> *"Local government finance is highly centralized not only in terms of taxing authority and expenditure responsibility; centralization extends to day-to-day influence by (the) national government on fiscal decisions and administrative procedures. Local tax rates or ranges of levy and valuation schedules are governed by national laws, rules and policy decisions. The Local Tax Code (PD 231), the Real Property Tax Code (PD 464), and the Decree on Local Fiscal Administration (PD 477) have predetermined the nature, scope, and limits of local fiscal policy and*

administration. Central government pronouncements have in fact pre-empted the use of local funds.

About 40% of general fund revenues are pre-empted by statutory requirements such as the statutory reserve, election reserve, infrastructure fund transfer, aid to hospitals and integrated national police, and transfers to the barangay development fund. Moreover, 20% of the BIR allotment to the General Fund is earmarked for programs mandated by the national government per PD 144. Under Section 6 of PD 144, local governments are required to allocate no less than 20% of their annual internal revenue allotment to development projects."[102]

The passage of the LGC of 1991 has granted extra taxing powers to LGUs. While it retains most of the common limitations prescribed by the Local Tax Code (PD 231), some of these have been lifted, such as:

- levies on the income of banks and other financial institutions;
- restrictions on wharfage fees and charges to rates not exceeding the Tariff and Customs code on wharves constructed and maintained by local governments;
- taxes on the business of persons engaged in the printing and publication of any newspaper, magazine, review or bulletin published regularly and having fixed prices for subscription and sale; and
- taxes on the registration and issuance of licenses or permits and for driving of tricycles.

On the other hand, the specific taxing powers of LGUs include:

Provinces

- tax on transfer of real property ownership;
- tax on business of printing and publications;
- sand and gravel fee;
- professional tax;
- amusement tax;
- fees for sealing and licensing of weights and measures;
- tax on peddlers; and
- annual fixed taxed for delivery trucks or vans of manufacturers or producers of certain products.

Municipalities

- gross receipts business tax;

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[102] NEDA. Technical Cooperation for the Management of Change: The Case of the LDAF and its Strategic Contributions to Meaningful Decentralization in the Philippines. Pasig: June 1995.

- regulatory fees and charges; and
- fishery rentals, fees and charges.

Cities

Cities can impose taxes, fees and charges allowed for both provinces and municipalities at rates not more than 50% of what they can impose, except for professional and amusement taxes.

Barangays

- taxes on stores or retailers with gross sales or receipts not exceeding PhP30,000.00 in cities or PhP20,000.00 in municipalities, at a rate not exceeding 1% of gross sales or receipts;
- service fees or charges;
- barangay clearance; and
- other fees and charges, i.e. on gamecocks, breeding cocks and cockpits; on places of recreation charging admission fees; and on billboards, signboards, neon signs and similar forms of outdoor advertisements.

Relative to this, there are certain implications of the fiscal and taxation policies enumerated in the Code. Although these are not directly connected with environmental investments, they nevertheless affect LGU decisions on environmental programs because taxes are the biggest source of revenues for all LGU projects. As noted by studies conducted on IRA, the increase therein does not adequately compensate for the added expenditures associated with the devolved functions. If the Code were fully implemented, the IRA would only account for a 51% increase. Expectations during the drafting of the Code was that the IRA would increase by as much as 300%. Furthermore, yields from property taxes would erode if basic rates are not updated, if no additional taxes for the SEF are levied and if LGUs do not adjust real property values using fair market values. Finally, LGUs can maximize their revenue potentials if the maximum allowable tax rates on local business tax and other local taxes, charges and fees are imposed. The biggest difference, though, lies in the rescheduling of real property taxes.

Other Sources

Revenue sources for LGUs other than taxes are available. User charges such as public utility charges and toll fees could be imposed through their legislative councils, including the prerogative to determine the rates. A major requirement of this, though, is that institutional reforms such as setting up of separate public enterprise units accompanied by skills improvement, should be established.

An additional source of financing for LGUs is provided by E.O. 72. It allows LGUs to collect fees and other charges previously collected by HLRB for the issuance of locational clearances. This could serve as a sustainable source of funds

which could be used for local projects that would otherwise be difficult to finance. This, however, is true only to the extent that the LGU may issue locational clearances. Otherwise, the agency issuing the clearance gets to collect the fees and charges correspondingly. At the moment, HLRB has issued guidelines on the devolution of this activity. It has come up with a protracted schedule, whereby LGU capabilities in land use planning have to be ensured before locational clearances are left to their discretion.

Handbooks on Revenue Mobilization

A study conducted by the USAID-Local Development Assistance Project on LGU Revenue Mobilization concludes the following:

- With reference to Sections 297 and 299 of the LGC, both provisions open immediate opportunities for borrowing actions by LGUs with particular reference to obtaining financing for revenue-generating projects.

- Equally, they open opportunities for private banks, investment houses and government-financed banks or programs to explore the borrowing needs of LGUs with particular reference to support for revenue-generating projects.

- Training, information exchange and further special development activities are needed in order to vigorously implement sections 297 and 299 by all entities.

The study emphasizes that training and information dissemination should play a major role in order to address the problem of revenue mobilization. One of the outputs of the study is a set of handbooks and manuals on revenue mobilization that LGUs can use as reference materials. The LGA is tasked to coordinate training activities.

Each handbook contains suggested policies and strategies for promoting efficiency and cooperation in undertaking credit financing activities, and more importantly, increasing the number of participants from both sides. The most conservative estimates show that there is a projected PhP4 billion demand for this handbook among LGUs. This should serve as a huge incentive for the private sector to get involved.

The handbook for LGUs include:

- suggested general principles for LGUs, including the necessary steps for loan applications and in using securities;
- relevant provisions in the Code;
- list of possible projects for credit financing;
- process for negotiating loans;
- list of banks and financial institutions;

- an approach to credit evaluation;
- a pro forma schedule on resources generated and expended;
- the Credit Information Bureau, a private credit rating company that assesses the capacity of the borrower to repay obligations; and
- the necessary elements for credit issuance for bonds.

On the other hand, the handbook for financial institutions includes the following information:

- a brief description of the potential market and its sustainability;
- suggested policies in exploring opportunities with LGUs;
- relevant provisions in the Code;
- historical overview of LGU borrowings;
- characteristics of funding sources for LGUs;
- the Municipal Development Fund;
- a pro forma schedule on resources generated and expended;
- the Credit Information Bureau, Inc.;
- the Memorandum of Association of the Capital Market Development Council, which is composed of government agencies, private organizations and institutions that have agreed to develop the capital market in the country; and
- preconditions for a municipal bond market in the country.

Handbooks on training, policy development and revenue mobilization were also drafted.

For the training handbook, training needs of LGUs are identified, as well as descriptions of the courses that are suggested to be offered. An observation trip on credit finance in the US was undertaken by representatives from both parties. An outline of the trip is provided.

The handbook on policy development contains analyses of the various policies involved in credit:

- tax-exempt bond status;
- trust, trustee and intercept usage;
- credit analysis and ratings;
- high interest rate environment;
- alteration on municipal development fund policies;
- the Central Bank and the Securities Exchange Commission; and
- expanded policy and visibility exposure for LGU credit finance.

Finally, the handbook on revenue mobilization contains the various aspects involved in mobilizing funds for LGUs.

Short-Term Recommendations For Improving LGU Revenue Mobilization[103]

1. Fiscal Incentives

Most of the people interviewed by IEMP recommended the use of financial incentives, interest rate subsidies and direct subsidies to encourage environmental investments. A caveat to this is that the government should have safety nets so as to avoid previous experiences where companies use the incentives supposedly for pollution abatement equipment, to avoid paying taxes for equipment purchased that were not necessarily for pollution control.

2. Incentives for Financial Institutions

These would refer to incentives that would encourage proponents to access funds from financial institutions providing credit for environmental investments. Examples of such would be:

- tax deductible investments;
- accelerated depreciation;
- tariff relief on imports;
- cost-shared grants for project identification/project development/feasibility studies/financial packaging;
- direct investment grants;
- seed capital for a special fund;
- tax abatements/tax credits;
- research and development credits;
- income tax holidays; and
- real estate tax waiver.

Financial institutions can likewise encourage investments in this sector by lowering their IRR requirements for projects that meet all other criteria. This is relevant for investments that are not linked to expansions or new project investments.[104]

3. Regulatory and Market-Based Incentives

This is being addressed in the proposed Philippine Environmental Code that is pending at the Philippine Senate. Should the Code be passed, guidelines will have to be formulated within a year of effectivity. This would definitely encourage the private sector to get into environmental investments.

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[103] IEMP. Financial Resources...
[104] IEMP. Financial Resources...

4. *Development and Nurturing of a Cooperative Relationship Between EMB/DENR and the Financial Community*

The emerging importance of the financial community in the environment sector cannot be denied. Corollary to this, banks will be looking at environmental investments with increasing interest as the concept of lender liability will be inevitably linked with environmental damage.[105] The EMB can play a major role by ensuring that the government's priorities are reflected in the lending criteria to be applied by banks. In particular, relationships can be developed whereby:

- banks are provided with a better understanding of the reasons why they should be concerned with the environment management programs of their customers, including the management of environmental liabilities;
- a forum can exist for the advocacy of a more flexible and innovative approach to evaluating requests for loans for environmental purposes;
- loan officers can be trained and educated on the merits of pollution prevention projects and other environmental investments;
- banks can be encouraged to market and publicize the availability of "clean" banking products; and
- linkages can be developed with the insurance community on the management of contingent environmental liabilities.

5. *Development of a "Clean" Fund*

The concept of a "clean" fund revolves around a special fund that would specifically be used to increase the demand for environmental investments and financial resources available for these types of projects. The fund would address the financing gap caused by constraints mentioned above. It would be administered by the government, most probably through the EMB, hence making it more flexible in providing grants and loans to project proponents. It would also be able to provide funds for non-borrowing requirements such as project development and training, as well as for providing technical assistance in the technical aspects of specific investments.

Requirements for the set-up of this fund include:

- legislative action;
- development of funding sources, such as corporate contributions, penalties/fines/effluent charges, budget allocations, and donor grants and loans;
- design of fund programs and program criteria, including eligible purposes, investor eligibility, eligible costs, type of funding;
- fund administration;
- fund sustainability; and

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[105] IEMP. Financial Resources...

- coordination mechanisms with other interested agencies and parties.

The draft Philippine Environmental Code contains provisions for the set-up of an EGF. It contains most of the requirements for a "Clean" fund, and would be used specifically for environmental investments and cleanup operations. The passing of the Code would prove to be crucial for the success of the government's environment program for the medium and long term.

6. Improvement of LGU Revenue Mobilization

To improve revenue mobilization capabilities of the LGUs, the following recommendations were formulated by the LDAP:

- Formulation and adoption of an annual revenue program. The LGUs should quantify new expenditure requirements to meet the Code's obligations. The existing tax ordinances and the new Tax Code should be reviewed to assess future revenue potentials of the LGU. Also, there should be a detailed review of the exact income that the Unit may expect from the IRA. Based on these, tax ordinances should be promulgated, along with adoption of tax administration practices that would yield quick and permissible increases in revenues. Finally, the LGU should try to develop equitable, cost-effective and productive local tax policies and practices.
- Each province should adopt an updated basic real property tax scheme. It should further enact a Special Education Fund ordinance authorizing an updated annual tax on the assessed value of real property.
- Each province and municipality within Metro Manila should revalue properties based on fair market values, procedures of which are contained in Sec. 212 of the Code. Realtors can be used as sources of data, as well as the zone values established by the Bureau of Internal Revenue (BIR).
- Tax ordinances should be adopted to allow each Unit to collect at new authorized rates and among different bases. Note that although the Code provides revenue-raising powers to the LGUs, the ordinances should be locally enacted to legalize collection of taxes and fees. This is especially relevant because studies have shown that the IRA is not enough to compensate for the devolved functions from national agencies.
- High priority systems and practices in local revenue administration should be installed. Included are:

    - operation of a tax roll on each type of tax ;
    - current billing of taxpayers on a timely and scheduled basis;
    - monitoring of taxpayer payments and collections follow-up;
    - design and operation of simplified systems for paying local business taxes;
    - assessment of local business taxes by treasurers;
    - use of Presumptive Income Levels and systems of cross-checks in assessing gross receipts of taxpayers;

- updated records systems;
- computerization of revenue operations; and
- organization/operation of effective tax information campaigns.

- Enforce tax collections rigorously and develop equitable, cost-effective and productive local tax policies and practices. These include:

  - Code-specified ceilings on interest and surcharges for tax delinquencies;
  - Code-expanded distraint and levy powers on tax delinquencies accompanied by increased liability of treasurers for failure to use such powers;
  - sustained emphasis on selling delinquent real properties at public auctions;
  - Code-expanded civil remedies for collection of delinquent taxes, including opening of books and records to treasurers, and grant of authority under the new Code to innovate on revenue mobilization; and
  - Evaluation of productivity of their revenue systems, whereby revenues are compared with the costs of their administration.

All national agencies with devolved functions are mandated to develop and distribute guidelines and manuals that would assist the LGUs in implementing the Code. To ensure the success of decentralization, the National Monitoring Committee of the LGC Oversight Committee should constantly monitor this activity. Furthermore, the DOF should be taking a more proactive role in identifying technical needs of LGUs either by directly providing assistance or arranging for provision through the private sector or other means, such as educational institutions.

As for borrowing from credit market, there is a need to address credit risk management because of the historical relationship of the LGUs with private and government banks.[106] Banks can come up with policies that can influence the management of risky projects, so they are packaged in a way that they are combined with less risky ones to make it more viable. Variable interest rates can create this effect. On the other hand, the government can introduce risk reducing mechanisms to make credit risk management appealing to banks:

- institution building among the LGUs, as abovementioned;
- instruments/techniques to break down information asymmetries in LGU credit markets; and
- credit guarantee schemes for LGU loans.

[106] Ibid.

Limitations on cost-benefit analysis for environmental projects is a serious matter. Only when private financial institutions can prove mathematically that funding environmental programs are profitable will they enter into these contracts. Provision of financial incentives such as those mentioned above are commendable. On the other hand, they represent loss in revenues for the public sector. There is a mere reallocation of resources from the government to the private sector. Although this can translate into higher economic growth, there is the question of equity and social considerations, as the government is left with less resources for programs that do not offer any profit at all, particularly those that address social considerations. If natural resources were properly priced and are subjected to market forces, there will be less government intervention required. In effect, less resources will be sacrificed by the government, leaving more that can be used to address social and equity issues. A caveat is in order here, though. There are some natural resources that have varying values. In such cases, the government will be better off not assigning values to them, thus, utilization possibilities will be extremely limited. If such market failures cannot be avoided, the government must be very careful in identifying those resources that can be left to the laws of supply and demand and those that will remain under its protection.

C. Sustainable Financing Mechanisms in the Philippines

After the Rio Declaration in 1992, participating governments have been using sustainable development as the overarching principle in economic development planning. In translating this tenet into their respective action plans, strategies, targets, programs and projects, proponents have been increasingly relying on sustainable financing as the means to achieve such an objective.

Governments, international agencies, NGOs and the private sector have been trying to find innovative mechanisms that will ensure a steady stream of funding sources for environmental programs and projects. Traditional ways of using command and control measures solely for environmental protection and management were proven inefficient and unsustainable. Developed countries have started to use economic instruments in their environmental programs. Although no program has been implemented long enough to serve as a comprehensive model for sustainable financing, trends have shown that increased reliance on market forces for environmental programs has a better chance in achieving sustainable development. Consequently, developing countries such as the Philippines have started to implement innovative financing mechanisms in pursuit of sustainable economic growth.

The growing interest in the use of economic instruments for environmental protection was first premised on the theory that efficiency in managing and protecting the environment would be better achieved if market forces were allowed to influence decisions of players in the environmental sector. Concretely, MBIs, as

opposed to command and control measures, are supposed to reduce administrative costs. They can further create incentives for polluters to limit the amount of pollution and can even induce environment-friendly production techniques.

Trends in the use of economic instruments revealed that the level of efficiency expected from their use could not be realized due to the following constraints:[107]

1. Distribution Effects. Concrete examples would be the use of effluent fees and permit markets (studies conducted by Buchanan and Tullock, 1975 and by Hahn and Noll, 1983, respectively).

2. Administrative and Transaction Costs. The use of economic instruments requires a substantial amount of monitoring, such as for effluent fees. Findings of certain studies (e.g. McCaffery and Miller, 1986) show that sometimes, monitoring costs are higher and more complex than costs entailed in enforcing regulations. For tradable permits, identification of buyers and sellers requires substantial information and coordination schemes.

3. Competitiveness. The environmental sector is a new entrant in the market. Because of this, there are a few players in the field, particularly on pollution control and management, thus prices can still be influenced by a small number of firms. Thus, smaller firms are prevented from entering the market and the sector's viability as a profitable venture is not maximized.

4. Uncertainty. The very foundation of environmental economics is the theory of marginal costs applied to pollution abatement efforts of the firm. However, there are not enough data nor models that allow practical measurement of these cost curves. Because of this, there is a great level of uncertainty on how much of environmental objectives can actually be achieved by using economic instruments.

5. Unconventional Pollutants. According to a study by Malik (1989), there are many pollutants, particularly toxic ones, that are difficult to monitor. Setting of adequate market instruments would be difficult and may result in arbitrary fees and fines imposed on would-be polluters. Again, this contradicts the efficiency characteristic of these instruments.

Recent studies conducted have gone beyond the theory of efficiency, focusing on these instruments as sources of sustainable financing for environmental programs[108].

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[107] Feitelson, Eran. *"An Alternative Role for Economic Instruments: Sustainable Finance for Environmental Management,"* in Environmental Management Vol. 16, No. 3. Springer-Verlag New York Inc.: New York, USA, 1992.
[108] Feitelson.

1. MARKET-BASED INSTRUMENTS (MBIs)

Definition

MBIs are schemes that use the market and the pricing system to encourage or discourage the private sector from adopting a particular consumption or production pattern, i.e. to influence how buyers and sellers behave. On the production side, MBIs can influence investment decisions on which inputs to use, what technologies and processes to apply and what management strategies to implement to achieve certain objectives. These in turn affect production costs and, consequently, the price of output. This price will, then, influence consumer behavior on purchase decisions, assuming the product is not produced by a monopoly, or even if it is, there are alternative products that can be substituted.

Using MBIs to further environmental protection and pollution control goals was tested in developed countries, and is now being talked about in the developing world where environmental issues are now being integrated in planning for economic growth and development. When viewed from the point of economic history, reliance on market forces is still considered superior in achieving development goals, with government intervening only in areas where market failures persist. Environmental issues were once considered as market failures, hence the use of MBIs to preserve the environment were virtually unthought of until such time when degradation was reaching an alarming level. The use of the laws of market to rally the private sector behind environmental goals was an innovation that would prove to be effective and acceptable to all sectors concerned.

CACs

The most common form of environmental protection measures is the use of command-and-control systems (CACs). These are instruments of the government which dictate regulations and standards on waste disposal, air pollution and toxic chemicals use. Violations of these standards would result in monetary penalties or legal sanctions to be imposed by authorities. Thus, CACs are composed of standards, prohibitions, limits, permits, licenses and other forms of control.

The problem with CACs though is that regulations are effective only if monitoring and implementation are done properly. Asian experience has shown that if law enforcement in general is very poor, despite a well formulated legal framework for environmental regulation[109], environmental degradation becomes worse. Furthermore, CACs do not instill a conscious effort for environmental protection among industries, since the only objective is for them to avoid paying penalties. Even if they do, most of their investments are end-of-the-pipe solutions rather than pollution prevention. What is worse in the Philippines is that penalties

[109] Markandya, 1993; EIP Preliminary Policy Review, 1994.

are set at very low levels, hence companies choose to just pay fines rather than invest in pollution-control equipment that would cost them more. This defeats the purpose of setting standards and does nothing to prevent further pollution from occurring. Finally, CACs do not discriminate among firms that produce pollution at varying levels and have different characteristics, particularly in their ability to comply with standards and regulations. The relative costs to individual companies are not taken into account.[110]

Advantages of MBIs

The advantage of using MBIs aside from CACs is that they translate into two phrases that are best understood by business: minimizing costs and maximizing profits. These are the two overarching principles of business, and any process that would contribute to the attainment of these goals would be seriously considered. Moreover, MBIs allow companies to make the option of using the best technological method to attain environmental objective. Hence, they encourage innovation and initiative in coming up with ways to reduce pollution from source because MBIs deal with the whole process of production.

By using MBIs, companies are able to improve performance, and at the same time, contribute to environmental protection goals. Economic gains would include reduction of costs of waste disposal or simply lower costs of fines and charges should they opt to adopt environment-friendly technologies. Trading permits would even allow greater profits for companies that set their pollution levels lower than the standards set by the government. Finally, with simultaneous education campaign by the government and the education sector, increased awareness by the public would induce them to patronize products that do not harm the environment. MBIs would then translate into greater profits for industries that promote environment protection.

Noteworthy is the fact that MBIs are done on a voluntary basis. Companies may still opt not to minimize pollution from source since there would not be any violation for doing so for as long as they pay their fines. In this regard, CACs are still necessary to achieve environmental objectives. There should be a proper combination of both instruments especially in a country like the Philippines where there is acute intervention from the government in pursuing economic development. Nevertheless, as the economy relies more and more on MBIs for environmental protection, there will be less need for government regulations eventually. As administrative costs become lower, more government funds can be freed for other purposes such as social development programs.

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[110] IEMP. Market-Based Instruments to Promote Pollution Reduction in the Philippines. Manila: 30 November 1993.

Types of MBIs

Examples of the more commonly used MBIs are provided below:

a) Financial Incentives

These incentives are provided by the government that companies can avail of to lower costs of production. Examples would be grants, subsidies, loan guarantees and tax incentives. For environment-related purposes, incentives can be given to control and/or abate pollution and at the same time increase productivity and profitability. These are usually offered hand in hand with regulatory measures to ensure efficient implementation of the latter. They also assist small and/or cash-strapped companies to undertake investments in environmental programs that would otherwise be unprofitable for them to invest in.

Among these incentives, subsidies are often criticized because they tend to subsidize pollution and do not conform with the polluters pay principle.

Financial Incentives Granted by the Board of Investments

The BOI is a department under the Department of Trade and Industry (DTI) where small, medium and large scale firms can register and avail of incentives. It comes up with an annual IPP which is the overall plan of the BOI to promote investments. It contains a list of economic activities wherein investments are encouraged. The BOI uses the set of incentives provided under EO No. 226, otherwise known as the Omnibus Investments Code of 1987, as the tool for attracting investments.[111]

One of the goals of the 1996 IPP is "to ensure efficient environmental management and sustainable development of natural resources."[112] In line with this, the BOI provides incentives for:

- agro-industrial estates, where the developer is required to provide common wastewater and sewage treatment facilities and solid waste disposal and drainage systems; and
- environmental support facilities: waste management/treatment/control and industrial tree plantation.

Projects are classified according to type, i.e. whether they are new or expanding, where additional capacity is provided by the firm for the latter. If a project is new, it can either have a pioneer status, i.e. those producing new products or those employing new processes at least locally, or a non-pioneer status.

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[111] Board of Investments. 1996 Investment Priorities Plan. Metro Manila: March 1996.
[112] BOI. 1996 Investment Priorities Plan.

For pioneer projects, foreign equity can be as much as 100%. For non-pioneer projects, a maximum of 40% foreign equity participation is allowed.

New and expansion projects are required to get an ECC. All projects that involve handling, transport, processing and/or storage of toxic, hazardous substances and/or nuclear wastes shall be subject to the Toxic and Hazardous Substances and Nuclear Wastes Control Act of 1990. Also, no project involving importation of wastes for final deposition as a material of no economic value shall be eligible for registration.

Upon registration, firms can avail of the following incentives:

1. duty of 3% on imported capital equipment and its accompanying spare parts except for those locating in Metro Manila, unless exempted from the locational restriction
2. income tax holiday (ITH)
3. exemption from taxes and duties on imported spare parts
4. exemption from wharfage dues and export tax, duty, impost and fees
5. tax exemption on breeding stocks and genetic materials
6. tax credits

    - on domestic capital equipment and/or spare parts
    - on tax and duty portion of domestic breeding stocks and genetic materials
    - on raw materials and supplies

7. additional deductions from taxable income

    - equivalent to 50% of wages for five years upon registration
    - 100% of wages if the firm locates in a less developed area

8. non-fiscal incentives

    - employment of foreign nationals for five years
    - simplification of customs procedures for importation of equipment, spare parts, raw materials and supplies and exports of processed products
    - importation of consigned equipment for an unlimited period
    - privilege to operate a bonded manufacturing/trading warehouse

b) Creating Markets for Waste

This can either be waste exchanges among companies or creating a market for waste permits.

Industrial Waste Exchange Program

The Industrial Waste Exchange Program (IWEP) was introduced in the Philippines in 1987 by the DENR-EMB together with McGill University in Canada.[113] It ran for four years in Metro Manila, Cebu, Cagayan de Oro, Albay, Batangas, Laguna, Benguet, Cavite, Davao, Iloilo and Zamboanga del Sur. A bulletin was published every year, containing a listing of companies that were either buyers and/or suppliers of waste. The EMB acted as information center and broker. It also provided services such as arranging meetings, providing laboratory analysis and disseminating technical information. Unfortunately, there were no sustainable financial mechanisms that accompanied the project. Hence, when funding ran out, the program had to be discontinued. Furthermore, the mere fact that it was government-led made industries wary of submitting information for the bulletin. Out of 15,000 industrial firms listed in the last Bulletin in December 1990, only 593 were listed as suppliers and 127 were buyers.

The Philippine Business for the Environment (PBE) has taken the initiative to revive the program and come up with sustainable finance schemes to ensure continuity of the project. At present, it publishes a bi-monthly magazine entitled *Business and Environment* whereby half of the publication contains relevant articles on environmental protection, i.e. pollution prevention, waste minimization and clean technology. The other half of the magazine contains a list of waste products classified by major group, by company and by industry, which aims to match suppliers of waste materials with the users. Aside from direct advantages of the list in contributing to recycling efforts, there is further cost reduction in waste minimization expenses. Waste treatment becomes less expensive if there is demand for such wastes. Corollary to that, users lower their cost as the prices of their raw materials are minimal.

Listing in the magazine is free at the moment. However, PBE plans to charge a listing fee to companies within the year (i.e. 1996) similar to fees charged in the classified ads. According to the organization's computations, revenue projections from this activity are more than enough to compensate for the costs incurred in publishing the magazine. Moreover, it will still be cheaper for companies to pay for the advertisement of their wastes rather than spending a lot on waste treatment and disposal systems. The magazine itself will have a subscription fee by mid-1996 adding to the projected revenues of the organization.

The IWEP does not have a monitoring component at the moment. In the future, the PBE hopes to document successful cases of waste exchanges and publish these in the magazine. Together with the network of supply and demand for industrial waste generated by IWEP project, these cases can serve as an impetus for new industries to develop, specifically those that convert wastes into useful

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[113] IEMP. Market-Based Instruments...

products, thereby creating further employment opportunities and industrial growth in Philippine society.

Aside from the magazine, the information generated from the IWEP will be disseminated through link-up with other network systems, such as the Martlink, an electronic information network of the Foundation for Resource Linkage and Development (FRLD). This network has nodes in other major urban areas of the country, i.e. Cebu, Davao and Cagayan de Oro. IWEP also plans to hook up with other electronic bulletin boards in the country such as the Philippine Sustainable Development Network (PSDN) and the National Statistics Office (NSO) for greater access to its database.

The market for waste permits necessitates providing permits for companies to "pollute" up to a certain extent. This presumes that the pollution-carrying capacity of the area has been measured and computations of permits are based thereon. Given that some companies are not as pollutive as others, either because of non-pollutive production methods or because of pollution prevention and control programs it practices, those who emit less amounts of pollution can sell their quotas to those who would like to exceed their limits. This is called permit trading. The system is ideal for areas where industries are congregated and the government is capable of measuring pollution standards ideal for the area.

Although this scheme appears to be tolerating pollution, it actually encourages companies to control and lower their pollution levels so they can trade permits to make profits.

In the Philippines, RICs can use this scheme to abate industrial pollution. This, however, presupposes that the government is capable of measuring the pollution carrying capacity of the area. Efforts towards this end should be encouraged.

c) User Fees

User fees are monetary amounts imposed on raw materials used as inputs to encourage industries to decrease their wastes by using raw materials more efficiently, or better yet, by recycling their wastes.

d) Pollution Charges

Fines and fees are based on the amount of pollution emitted to the environment. These are also known as green taxes. This would encourage firms to implement pollution prevention and control programs. For countries that have practiced using green taxes, the money therefrom is used to form environmental

funds used by industry to prevent further environmental damage from industrial practices.[114]

Fees on Mine Wastes and Tailings

Presently, the mine wastes and tailings fee is the closest example of pollution tax being implemented in the country.[115] Under DAO 85, the fees being imposed by the DENR are:

- PhP0.05 per ton on mine wastes from metallic mines;
- PhP0.10 per ton on mine tailings from metallic mines for those using approved impoundments and those discharging to the sea by pipelines, launders and tunnel; and
- PhP1.00 per ton on mine tailings discharged on impoundments not duly approved.

No fines are charged for mine wastes and tailings that are reused for other purposes, e.g. as filling materials for civil structures. This encourages recycling.[116]

This mechanism does not reflect the polluter pays principle because fees are drawn from reserve fund, representing accrued mine wastes and tailings fees collected for compensation, etc., without identifying which company was directly responsible for polluting the environment.[117] What happens is other companies subsidize those that pollute and draw from the reserve fund to pay their fines. Also, current fees are used to compensate only private owners of infrastructure, private land, agricultural lessors and lessees and share tenants. Damage to common property is not compensated for.

The Draft Revised Philippine Environment Code has provisions for imposing water pollution charges. Furthermore, fines, fees and charges were increased to reflect the polluters pay principle in the amounts charged.

Another kind of charge implemented by some countries is the production charge, which is based on the output of the company emitting pollution. This would result in a higher price of product that is produced in a more pollutive manner. Differential pricing occurs therefrom.

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[114] US-AEP. *The Asean Quarterly on Pollution Prevention.* Manila: December 1995.
[115] IEMP. Market-Based Instruments...
[116] IEMP. Market-Based Instruments...
[117] IEMP. Market-Based Instruments...

e) Risk Liability Systems

Under this scheme, the firms are made liable for whatever damages they may cause to the environment. This is designed for companies producing highly hazardous and/or highly pollutive wastes. An example would be trust funds that require high-risk firms to post surety bonds before they can start operations.

The draft Environment Code introduces such a system through the setting up of the EGF. The EGF is meant to finance emergency responses, cleanup or rehabilitation of areas that may be damaged during the project's implementation.

Environmental Guarantee Fund (EGF)

The EGF is formally defined as "a negotiated amount, on a per project basis, that covers expenses for information and communication activities, monitoring activities by multi-sectoral teams, any repair or rehabilitation work and compensation for damages to the operation of the project."[118] It was created to have the necessary mechanisms and resources to deal with accidents caused by industrial projects that harm the environment. The legal basis for its creation stems from DAO No. 21 Series of 1992, entitled "Amending the Revised Rules and Regulations Implementing PD 1586 (Environmental Impact Statement System)". There was no explicit reference to the EGF in the Order. However, DENR was able to establish it on a per project basis because of the power of the agency to issue ECCs with certain conditionalities as well as the need to fund expenses of multi-partite monitoring teams.[119] Note that the fund has two uses. This has created confusion at times because the subdivision between these two purposes is not clearly defined.

Three possible forms of the EGF, depending on the type and location of the project, are:

- Multi-partite monitoring fund - a periodic cash payment to cover expenses incurred by multi-partite monitoring teams in conducting monitoring activities;
- Trust fund - a trust account or performance bond to be used for compensating aggrieved parties for any damages to life and property and financing environmental restoration and rehabilitation of environmental damage caused by the project operation, including abandonment; and
- Cash fund - a joint account, managed by the EGF Committee, used to implement a company's environmental management and rehabilitation programs.

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[118] Vasquez, Rachel A. *Institutionalizing Environmental Guarantees in the Philippines*. DENR: May 1996.
[119] Ibid.

The Benguet Corporations' Grand Antamok Project was the first project required by the DENR to establish an EGF.[120] It was used by the government to resolve the deadlock between affected stakeholders and Benguet Corp. To date, there are 96 projects that have established EGFs per requirement of the DENR. Of these, 28.13% are in the mining and quarrying sector, while 25% are in power plants. From 1992 to 1995, an average of 20 projects annually were required to put up an EGF.

The recently concluded experience with Marcopper Mining Corporation (MMC) further illustrates the importance of the EGF. Without it, there would have been no ready source for funding the monitoring activities of the government, as well as the rehabilitation of affected areas which will cost the company P1.34 M.

The IEMP conducted a survey among the government, 33 industries and 3 NGOs. The results showed that the greatest use of the EGF was for education on environmental and pollution management, particularly with respect to accessing appropriate technology. Industries have been showing a growing interest in waste minimization technologies, replacing the traditional "end-of-pipe" waste treatment. Note that government policies are still geared towards encouraging the latter. Industries, however, are realizing that there is a win-win situation that can be developed with waste minimization, since not only do they meet environmental standards and develop good public relations, but they significantly lower production costs as well. This can be perpetrated if policy will be geared towards such.

Because the EGF is not explicitly stated in PD 1586, its application is on a case by case basis, agreements on which depend on respective interpretations of proponents and stakeholders, including the DENR. There are no uniform rates to speak of, or at least a uniform formula for computing the amounts, despite similarity in facilities and impacts in a lot of cases. There are proposals to introduce formal risk computations. This variable has quantitative problems since it is very difficult to estimate risks associated with biophysical, health and economic effects and translate these into monetary terms. Furthermore, there are opportunity cost considerations on the part of the company in being unable to use the funds for productivity increases or expansion purposes.

In this regard, the DENR has been lobbying for the passage of House Bill No. 4 which includes the following:

- provision of legal authority in implementing the EGF;
- expansion of guarantee instruments for the proponent from trust fund to environmental insurance, surety bonds, letters of credit and self-insurance; and

[120] A total of P5,550,000: P500,000 for the performance bond, P50,000 for the trust fund, and P5,000,000 for the cash fund for rehabilitation and reforestation of mined-out areas.

- financial liability for environmental rehabilitation covering emergency responses, cleanup or rehabilitation of areas damaged during the project's implementation and abandonment.

DAO 21 s. 1992 is also being revised to include a more refined definition of the EGF. A monitoring fund will be established and will be permanent, non-negotiable, and an ECC condition for all environmentally critical projects.[121] This makes the EGF purely contingent in nature. The revised Order further limits the scope of the EGF to projects that:

- use chemicals listed in the Philippine Priority Chemical List;
- extract natural resources and require rehabilitation and abandonment; and
- establish or install pollution control structures that could endanger life and property in case of failure.

The DENR is currently conducting dialogues and workshops to come up with guidelines on the establishment of the EGF and demonstration of social acceptability of projects under the EIS system to ensure that they are acceptable to the stakeholders.

Relative to this, the DENR has completed its administrative and procedural guidelines for implementing programmatic compliance to the EIS system of industrial development areas, including those on environmental guarantees. Prior to these guidelines, the DENR required individual EIAs for each project locating in an industrial development area. With DAO No. 11 s. 1994 entitled "Supplementing DENR Administrative Order No. 21 s. 1992, and Providing for Programmatic Compliance Within the Environmental Impact Statement System", a single ECC will be issued to the whole industrial development area. This would necessitate computation of combined effects of all industries locating therein, as well as the need to compute for the pollution-carrying capacity of the concerned area.

f) Deposit-Refund Systems

These entail placing surcharges or deposits on recyclable items (usually packaging products) which consumers can refund upon returning the item. In the Philippines, softdrink bottles are being recycled and consumers are made to pay deposits when purchasing the beverage, which will be refunded upon return of the bottle.

Holland is planning to extend the deposit-refund concept to chemicals such as cadmium and mercury, whereby producer and importer will pay a deposit. The cost is passed on to the user of the product that contains the substance, and will be

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[121] DENR-EMB Office Circular No. 3 s. 1993 provides a technical definition and scope of environmentally critical projects.

refunded to the final user, thus, expanding the system from just two parties involved in the exchange.[122]

Softdrink and beer companies in the Philippines have been implementing this system for quite some time. Consumers automatically pay deposits for glass bottles when they buy and they can refund the deposit once empty bottles are returned.

Nestle Philippines

One particular multinational company in the country that makes use of recycling in its operations is Nestle Philippines.[123] The wastewater treatment facilities are designed to biologically treat wastewater which is, later on, discharged into natural waterways. The sludge is thickened, dried and is used as organic fertilizer or as land fill. In the meantime, discharged water is used to grow tilapia, a fresh water fish. The solid waste disposal system, installed in Nestle's coffee production centers, converts coffee grounds into steam. A specially designed boiler burns coffee grounds that are pre-dried in a rotary drier. The steam produced is used for manufacturing processes and auxiliary services. In the packaging division, food products are packaged in refill packs and reusable containers. The recycled materials like paper, board, glass, etc. have also been increased recently. The objective of the company is to substantially reduce the weight of total packaging material usage by the year 2000.

2. SURVEY OF THE APPLICABILITY OF MBIs IN THE PHILIPPINES

IEMP conducted a survey among industries in various regions of the country to determine the applicability of MBIs for promoting environmental protection and pollution control. The industries interviewed were composed of pig farms, electroplating, semiconductors, tannery, textile, coconut oil-milling, fish canning, sugar, pulp and paper and cement. International literature on the use of MBIs was used as a basis for determining the scope and variety of MBIs to be promoted. The regions were chosen based on the level of industrialization in the area. Finally, matching between industries and MBIs was done based on the results of the survey, whereby consideration was given to the compatibility of MBIs with the target industry. The characteristics reviewed were composed of:

- physical characteristics including the production and waste control processes used;
- factors that influence decisions surrounding pollution abatement; and
- options or incentives for improved waste management involving the use of MBIs.

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[122] IEMP, Market-Based Instruments...

[123] Nestle, Philippines *"The Nestle Policy on the Environment."* Makati City: 1996.

Evaluation of MBIs

In evaluating MBIs, the criteria used were:

- Market Penetration. This was used to assess effectiveness of the instrument in influencing firms within a given type of industry and in penetrating environmental management decision-making.

- Equity and Fairness. This assessed the impact of the instrument across firms in the same industry to determine whether some firms will be unduly required to bear a disproportionate degree of burden compared to other firms in the same industry.

- Economic Efficiency. This assessed whether expected economic benefits outweigh economic costs in using the instrument, i.e. the efficiency of using the instrument in pollution abatement. Available and technologically viable alternatives for meeting the objectives of the instruments, including international competitiveness of the industry, were taken into consideration.

- Political Feasibility. This assessed whether the instrument would be feasible to implement given the current political setting, including identification of policies that have either popular or unpopular political backing.

- Administrative Feasibility. This assessed the institutional constraints in implementing environmental management procedures, including constraints on the availability of resources or information required to implement the instrument.

- Effectiveness in Achieving Environmental Objectives. This considered the overall effectiveness of the instrument in controlling and preventing pollution, as opposed to conventional end-of-pipe solutions.

Ranking Results

In ranking the MBIs, the results in terms of applicability were as follows:

1. Financial Incentives/Subsidies;
2. Creating Markets for Wastes;
3. User Fees on Raw Materials and User Charges for Centralized Waste Treatment Facilities;
4. Pollution/Effluent Charges;
5. Risk and Liability Systems; and
6. Refund-Deposit Systems.

Financial incentives were most relevant for sugar mills, electroplating firms, coconut oil mills, tanneries, fish canneries, pig farms and cement firms. Industries

recommended the use of grants, reduced interest rates on loans and tax allowances for investments in pollution control equipment. Policy studies have shown that this instrument is most effective for industries with the largest, most toxic waste streams. Also, incentives should extend to investments in improved production processes, not just on pollution control equipment, to achieve maximum use of the instrument by increasing productivity and profitability. The age of equipment should be taken into consideration when assessing the need for financial assistance. Hence, for old equipment, it may be more economical to invest in modernizing equipment rather than purchasing pollution control equipment.

A caveat is in order here. Financial incentives should be implemented only in conjunction with a proper penalty scheme so as to encourage firms to voluntarily invest in pollution control equipment. Penalties should be at least equal to the cost of investing, in order to avoid just paying the penalty for polluting, simply because it would be cheaper for them to do so.

Market for wastes was second, partly because there already exists a market for waste materials of some of the industries interviewed. Nevertheless, the establishment of the IWEP of PBE is an answer to this.

User fees were found to be applicable to water consumption because industries interviewed were between moderate to heavy users of water. This instrument encourages recycling and efficient use of resources, as well as discouraging the use of certain materials that pose environmental hazards during production. Substitution of less environmentally damaging resources is also encouraged as long as the fine plus the cost of material is more than the cost of using the substitute material. For raw materials, they may take the form of tariffs or surcharges for those that are imported or locally sourced. The only problem for this instrument is that if the industry is non-competitive, i.e. a monopoly or oligopoly, the added cost would only be passed on to the consumer, rather than encouraging the firm to use a substitute or to use the resource more efficiently.

User charges for common wastewater treatment facilities is relevant for industries highly concentrated in a geographical area. It resolves problems of economies of scale and of small firms unable to put up individual facilities on their own. The user charges should be less than the cost of polluting to encourage firms to participate in the scheme. Private operators or LGUs can implement the facility. The problem with the LGUs is the lack of capability to raise sufficient funds for such a project. In this case, the BOT scheme becomes a relevant alternative.

Pollution charges, on the other hand, were not ranked highly because of the varied nature of industries interviewed. Monitoring requirements are high for this type of instrument because charges would be based on each type of pollutant, hence large firms and those with geographical concentration were more amenable to its use. Countries that have implemented this scheme show that only with proper monitoring and well-defined sources can this be successful. This instrument goes

hand in hand with financial incentives because firms that would pay a high user charge would be induced to invest in pollution control equipment.

Another issue here is the standard used for setting fine structure. Current regulations deal with concentration of pollutants. However, firms can skirt this by simply diluting their wastes. Hence, total pollution weight or load should be used. Current monitoring procedures, however, still do not allow for its implementation.

Risk liability systems were likewise applicable to large firms because of the requirement of putting up financial or guarantee bonds. In the proposed EIA system contained in the revised DAO 21 and the draft Environmental Code, this scheme is required for all projects requiring an EIA. This guarantees a source of funds for cleanup operations or for rehabilitation of degraded areas.

Finally, refund-deposit systems were not very significant for this particular set of industries. For firms that implement this, however, success rates are very high. The scheme helps in the advertising and promotional efforts of the firms because of the concept of their products being environment-friendly.

Conclusion

In sum, MBIs should be able to induce a change in behavior of firms with respect to environmental protection and pollution control and abatement. Concretely, MBIs should be able to produce the following results:[124]

- relocate industries in environmentally acceptable areas, away from highly polluted ones, e.g. Metro Manila;
- increase investment in environmental management, whereby industries invest in their own technologies and activities, or channel funds to government programs, e.g. through effluent charges, taxes, etc.;
- increase industry's rate of compliance with existing standards and permits;
- increase industry's self-regulation through assumption of greater responsibility for compliance monitoring and the burden of demonstrating acceptable practices; and
- increase the efficiency with which natural resources and raw materials are used in industrial processes.

3. BUILD-OPERATE-TRANSFER SCHEME (BOT)

The BOT scheme is an alternative process (as opposed to the traditional ODA and local debt sources) for governments that are financially strapped in meeting their economies' capital investment requirements to sustain economic growth. It is a contractual arrangement entered into by a private sector proponent with the government for the construction, financing, operation and maintenance of

[124] IEMP. Market-Based Instruments...

an infrastructure facility for a fixed period, after which the facility is transferred to the government. Its objectives include the following:

- accelerate build-up of infrastructure;
- encourage private sector participation;
- overcome fiscal constraints;
- access better technology and expertise in the private sector; and
- superior operation and maintenance capability.

Advantages and Disadvantages of BOT

BOT projects are literally in their infancy stage. Most governments that use this scheme to fill in gaps in infrastructure requirements have not implemented programs long enough for post-project evaluation to be conducted. However, there is enough experience that shows some advantages and disadvantages of using the scheme. All of these refer to experiences in negotiations and project start-ups. Governments and project proponents have yet to complete the BOT process. Only after such a transfer can a comprehensive evaluation of the success or failure of the BOT scheme be made.

The ADB participated in some BOT projects. Among the advantages it mentions are:

- It will promote open competition and provide the lowest possible cost;
- Project risks will be the responsibility of the private sector;
- The private sector can provide wider access to capital markets, better management skills, access to latest technology and implement a project faster than the public sector;
- Project financing will allow governments to allocate scarce resources to other priority areas for economic and social development; and
- Governments can compare existing public sector units with private sector operations, resulting in improved performance for both.

The weaknesses enumerated by the bank are:

- The total cost of a project may seem to be nigh. This must be weighed against the private sector cost of capital, the project sponsor and all contractors accepting the risk;
- Monopolistic control may be awarded to one operator. Any project should ideally be part of an overall deregulation program and awarded in an open, competitive market;
- Governments must develop planning, technical and negotiating skills to develop a proper program and negotiate "fair" deals on behalf of the users;
- BOTs are highly complex, expensive and time consuming; and

- There has been no evaluation of BOT projects since the "downside" has not really been tested.

Notwithstanding these, the bank proposed the following recommendations:

- Governments must develop a sound regulatory environment and clarity of government policies.
- Awarding of projects must be transparent.
- There should be proper and sensible allocation of project risks.
- Appropriate incentives should be provided to investors, e.g. tax concessions, repatriation of capital, pre-completion bonuses, etc.
- Governments should only deal with strong and experienced sponsors and contractors.
- The EIRR must be carefully calculated to ensure a bigger chance of success of the project.
- Governments must develop complementary sectors: commercial banking, capital markets and insurance.

The BOT Law

In July 1990, RA No. 6957 entitled "An Act Authorizing the Financing, Construction, Operation and Maintenance of Infrastructure Projects", also known as the BOT Law, was signed. It contained rules and guidelines governing the responsibility of the government and the private sector in conducting BOT projects. This was later on amended and became RA 7718 which guides the present BOT schemes of government projects, not only in the power sector, but in other government priority areas as well, such as ports, airports, highways, railways, mass transit, telecommunications, sewerage, solid waste, water supply, health facilities, tourism estates, markets, government buildings and other types of infrastructure facilities that are authorized by appropriate government agency.

A significant aspect of the BOT Law is that 25% of a BOT project's cost can be loaned from ODA funds. This fund is being administered by DBP. This fund is deemed necessary because the cost of each project is so huge it exceeds the limit of any single borrower. In addition, a Philippine Strategic Holdings Equity fund is being planned with Clemente Capital of New York wherein proceeds from such will be used for investments in infrastructure projects.[125]

The BOT Law has four major philosophical principles, namely:

a) Investors in infrastructure development are entitled to reasonable returns. Hence, the law will not be subject to any legislative ceiling on profits and annual tariffs, tolls, fees, or other charges for using the facility may be adjusted according to a predetermined formula based on price indices as stipulated by the contract.

[125] Infrastructure Finance. Economy: New Scope for Private Investment.

b) Government must share in the risks and costs for some categories of infrastructure facilities. These may be in the form of financial incentives granted by the government as allowed under the Omnibus Investment Code, or in the form of cost sharing of up to 50% of the total project cost for provision of infrastructure support facilities to the project such as access roads.

c) The length of time, requirements and costs of the entire bidding process are rationalized to avoid duplications and needless expenses on the part of both government and private sector. There is a clear delineation of agency responsibilities, criteria for approval and decision rules and a time-bound step-by-step approval process.

d) The private sector is given flexibility to initiate new ideas or concepts. This specifically refers to the provision of the law to allow direct negotiation of contracts for unsolicited proposals under reasonable conditions.

Financing Instruments for BOT Projects

Private infrastructure projects in the country are being financed through various sources, both in terms of debt and equity. The following is a list of available financing instruments for BOT projects.

Equity

Equity holders provide long-term capital to a project and take the most risks, but in return, share in profits. The project sponsors are expected to put in the bulk of equity in a project; the rest is provided by creditors and equipment suppliers. Foreign sponsors usually play a big role in greenfield projects. Foreign companies bring in expertise and funds, especially for technologically complex or large projects.

- International Equity Placements

Large private companies can raise funds through the US equity market through American Depository Receipts (ADRs). These enable foreign companies to issue equity on the US market without complex settlement and transfer mechanisms. They are issued by a US Depository Bank and the underlying shares are held by a Custodian Bank in the home country of the former.

- Investment Funds

There are several investment funds that have been created to mobilize investors in the world's major financial centers for equity investment in developing country infrastructure projects:

1. Asian Infrastructure Fund

This is a US$1 B private equity fund established to invest in non-listed equity or equity-linked securities of entities engaged in development, ownership, or operation of infrastructure facilities in selected countries in Asia. The fund's philosophy is to engage in strategic partnerships as a minority fiscal partner with leading local and international investors throughout the region.

2. Global Power Fund

This aims to provide mezzanine financing to power projects in IFC-member developing countries. It provides a mix of financing, including equity, subordinated debt, completion guarantees and bridge financing to cover riskier construction period of power projects.

Debt

- Foreign Sources

1. Multilateral Agencies

These agencies, such as the ADB and IFC, play a catalytic role in infrastructure finance. They offer long term loans, over ten years, at an interest rate slightly above the London Interbank Offered Rate (LIBOR). They usually limit their exposure to 15-25% of project cost, but their presence adds credibility to the project and attracts other banks thereto. Moreover, loans granted under these agencies' co-financing schemes are exempt from country loan loss provisions that would otherwise have to be provided.

2. Export Credit Agencies

These agencies fund projects with high foreign content. They provide coverage for sovereign risk which paves the way for commercial bank financing. ECAs have very little experience with project finance. They do not take construction risk, hence the construction phase is usually financed through commercial banks.

3. The International Bond Market

An infrastructure project can be funded directly by bond issuance such as the case of Enron Subic Power Plant. Also, a creditworthy project sponsor can issue securities and reinvest proceeds in the project.

Bonds have less stringent documentation, which offset constraints faced by commercial banks and which create potential for complementary bank-bond financing. The innovation being examined is the provision of debt finance by banks during the risky years of the project, followed by refinancing with longer term, securitized debt once the project is completed. Hence, the limited maturity of bank debt does not constrain project financing as bond markets cope more easily with maturities of ten years or more.

- Domestic Sources

1. Foreign Currency Deposit Unit (FCDU)

Because of the influx of foreign currency from overseas contract workers' remittances, the FCDU has been a major source of funding.

2. Private Sector Infrastructure Development Fund (PSIDF)

This was established as a conduit for ODA funds made available for infrastructure development. It would get funding from the ODA and onlend these funds into commercially viable infrastructure projects of national priority. It is intended to focus on larger, commercially viable projects with major extended capital requirements. In particular, it is intended for projects that cost between US$40 and 400 million.

The PSIDF would finance up to 30% of the total project cost. It is expected to provide additional long-term funds for viable projects without usurping the responsibility of the sponsor to commit substantial amounts of equity and project-guaranteed funds.

3. Wholesale Relending Programs - DBP and LBP

The DBP and LBP serve as conduits for concessional funding made available to the Philippines. They can fund up to 70% of the total project cost, subject to certain limits. Terms of financing could run up to 15 years at a fixed or variable interest rate based on a premium of the prevailing WAIR.

4. IFC Initiated Local Funding Window. The IFC is considering using its AAA credit rating to raise long term funds up to PhP2 billion to be onlent to qualified infrastructure projects. The term of the funding would be for 15 years at 91-day Tbill rate.

Private Sector Requirements

The private sector has its own prerequisites before venturing into BOT schemes:

- a stable political and economic environment;
- clarity in laws and regulations;
- strong domestic capital markets to borrow local long-term debt and, eventually, to float off project on local stock markets;
- easy and speedy processing;
- a fair sharing of risks between the government and private sector; and
- realistic incentives to provide attractive returns and protection of investment.

Projects Eligible for BOT Financing

Those allowed under RA 7718 are the following:

- infrastructure projects where legal title of facility reverts to the government at some fixed period after the commissioning date. This includes the BT or BOT mechanisms as well as the ROT (Rehabilitate-Operate-Transfer) and BLT (Build-Lease-Transfer).
- projects which allow the proponent to develop commercial facilities adjoining the infrastructure to be built, with the corresponding legal titles to be transferred to the government at some fixed period. This includes the DOT (Develop-Own-Transfer) scheme. An example of this would be commercial developments and/or airport passenger terminal, a toll road, or other investments integral to a mass transit system.
- facilities where the legal title will not be transferred to the government during their useful life. These include the BOO (Build-Own-Operate), the ROO (Rehabilitate-Own-Operate), the RLO (Rehabilitate-Lease-Operate) and the CAO (Contract-Add-Operate).
- any structure that may be needed in the future but is not specifically defined by the amended law, provided its usage is approved by the President.

In particular, the following projects are eligible for the BOT scheme:

1. highways, including expressways, roads, bridges, interchanges, tunnels and related facilities;
2. railways or rail-based project packages with commercial development opportunities;

3. nonrail-based mass transit facilities, navigable inland waterways and related facilities;
4. port infrastructure such as piers, wharves, quays, storage, handling, ferry services and related facilities;
5. airports, air navigation and related facilities;
6. power generation, transmission, distribution and related facilities;
7. telecommunications, backbone network, terrestrial and satellite facilities and related service facilities;
8. information technology and database infrastructure;
9. irrigation and related facilities;
10. water supply, sewerage, drainage and related facilities;
11. education and health infrastructure;
12. land reclamation, dredging and other related development facilities;
13. industrial and tourism estates or townships, including related infrastructure facilities and utilities;
14. government buildings and housing projects;
15. markets, slaughterhouses and related facilities;
16. warehouses and post-harvest facilities;
17. public fishports and fishponds, including storage and processing facilities;
18. environmental and solid waste management and related facilities such as collection equipment, composting plants, incinerators, landfill and tidal barriers; and
19. other infrastructure and development projects as may be authorized by the appropriate agencies.

Agencies/LGUs may likewise accept unsolicited proposals for BOT undertakings. An unsolicited proposal is not part of the priority list of infrastructure projects enumerated by the agencies and LGUs but approved by the NEDA Board and involves a new concept or technology. It should not require direct government guarantee, subsidy or equity. Furthermore, the agency or LGU concerned would have invited proposals by publication in the newspaper with general circulation.[126]

Eligibility for BOT projects is based on the project's profitability and on the presence of dependable revenue streams. Foreign investors are no longer restricted to 40% ownership or equity participation; rather, they can now control 100% of the total project.

Local governments are encouraged to use the BOT scheme to lessen their dependence on the national government and the Internal Revenue Allotments (IRA) for financial assistance. If it can develop and package a financially viable project, it can directly solicit investor interest. The BOT scheme encourages the LGUs to exercise their expanded powers as provided for in the LGC of 1991, allowing them to adopt and implement their own capital expenditure programs.

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[126] Republic Act No. 7718 and its Implementing Rules and Regulations.

The BOT Centre

The BOT Centre is a department under the Coordinating Council of the Philippine Assistance Program (CCPAP), an attached agency to the Office of the President. The CCPAP was created in 1989 under AO No. 105 to "facilitate mobilization and administration of funds generated by the Philippine Assistance Program (PAP) and ensure its successful implementation".[127] In September 1993, Pres. Ramos issued Memorandum Order No. 166 assigning the CCPAP Chairman as the Action Officer for the BOT Program. This led to the formation of the BOT Centre under CCPAP. Its main function is to promote the BOT Program (a.k.a. the Philippine Infrastructure Privatization Program or PIPP) and conduct BOT training for implementing agencies, the LGUs and the private sector. The BOT Centre likewise coordinates and monitors the implementation of all BOT projects in the country.

The BOT Centre aims to contribute to economic growth by developing and implementing infrastructure projects. In support thereof, the following activities are being undertaken:

- provide appropriate support to implementing agencies and LGUs to achieve strategic project development and implementation goals more rapidly;
- promote the BOT Program and the public-private partnership approach to project implementation on a worldwide scale;
- facilitate the entry of project sponsors, developers and financiers; and
- provide training and technical assistance to implementing agencies and LGUs in all phases of the project cycle.

LGU Training for BOT Application in the Environment Sector

The BOT Centre is in the process of conducting training seminars for the LGUs nationwide in using the BOT scheme for environmental infrastructure projects. The objectives of the seminar are:

- to initiate project development activities among agencies and LGUs toward preparation and implementation of environmental infrastructure projects;
- to familiarize participants with the BOT project development cycle and relate it to their own project plans;
- to review the legal framework and project approval process for environmental infrastructure projects;
- to assist participants screen potential environmental infrastructure projects and identify viable candidates for implementation; and
- to prepare action plans for continued development of environmental projects.

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[127] Department of Finance. Handbook on Doing BOT Business in the Philippines.

The training sessions will be held in three phases: one for Luzon, one for Visayas and one for Mindanao. Those for Luzon and Visayas have taken place, and were participated in by national government agencies (23 and 11, respectively), LGUs (24 and 19), water district representatives (11 and 7) and other entities (3 and 4), the latter composed mostly of project personnel.[120]

The choice of participants is determined by the BOT Centre, whereby priority is given to LGUs that are deemed capable of undertaking BOT projects with minimal training needed. The criteria used were composed of the following:

- those coming from highly urbanized cities;
- those coming from capital towns;
- LGUs that expressed interest in undertaking projects for BOT funding; and
- LGUs that received unsolicited proposals from proponents from the private sector.

The criteria used were based on the fact that BOT projects can become successful only if the LGU has the capacity to pay for their counterpart in the project. Moreover, beneficiaries/users of the project should afford to pay whatever user fees and charges the BOT project will be collecting for the project to be self-liquidating. On this basis, highly urbanized cities and capital towns were given priority in the training.

A glaring weakness of the training is in the total number of LGUs invited to participate. The following table shows how minimal the impact of the training is with respect to the total number of LGUs, most of which are in need of assistance in capability-building:

Table 1. Total Number of Local Government Units Trained.

AREA/NO. OF LGUs	TOTAL NO. OF LGUs[129]				TOTAL NO. TRAINED	% TRAINED
	Province	City	Municipal	TOTAL		
LUZON	38	29	743	810	17	2.1%
VISAYAS	16	20	388	424	17	4.0%
MINDANAO	23	16	411	450	N/A	N/A

However, despite the result, there are plans of replicating the training. The NEDA has expressed interest in undertaking this activity through its Regional Offices (NROs). Since NROs work closely with their constituent LGUs through the Regional Development Councils, coordination and credibility will not be a problem and the NROs will be able to identify LGUs most in need of training. Details of the training are still being worked out through an MOA between the NEDA and the BOT Center. The target is for the training to commence in 1997.

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[128] BOT Centre. Directory of Participants to the "Advanced Management Program (AMP) In Environmental Infrastructure." June 1996.

[129] NEDA-Regional Development Coordination Staff.

An overview of the environmental infrastructure sector is provided. This sector has been a growing concern of government because of improper and inadequate handling of sewage, wastewater and solid waste over the years. Moreover, there is an increasing demand of potable water coupled with decreasing supply. The socio-economic impacts of such problems are presented to the participants so they can get an overall view of how environmental infrastructure affects the lives of their constituents.

Meanwhile, these concerns have been devolved to LGUs, hence have become the responsibility of government units. The problem is that not all LGUs are equipped to meet the demands of their new responsibilities. In recommending actions for LGUs, the lecture stresses the role of the private sector in providing assistance to LGUs to meet environmental infrastructure demands. Sustainable financing concepts are introduced, such as:

- cost recovery;
- affordability;
- willingness to pay; and
- privatization schemes.

Aside from providing an overview of the environmental infrastructure sector, an orientation on the project development cycle is rendered. How the cycle comes into place within the context of macroeconomic and sectoral planning, as well as within fiscal and monetary planning, is discussed. It presents details on the pre-investment, investment and post-investment phases of a project. More importantly, the components of a feasibility study are outlined in the manual. This has been pointed out as the major weakness of many LGUs, hence problems of attracting private financing as well as getting approval for ODA financing are often encountered.

As the training continues, the participants are given a detailed presentation of the BOT process, as well as the advantages of such a scheme. The BOT Law and its components are explained. Other relevant laws, such as the Water Crisis Act and ownership issues with respect to treatment facilities/water permits/water distribution, are likewise presented in relation to the BOT Law to ensure consistency and compliance with existing regulations.

In order for LGUs to properly plan for a project to be subjected to BOT financing, the legal framework under the BOT Law, particularly the Approvals process, is outlined as follows:

Stage I: Project ID and preparation;
Stage II: ICC[130] approval of the list of priority projects, including the range of allowable government support and the documents required;
Stage III: Prequalification/bidding/award, including the documents required for bidding; and
Stage IV: Final clearances for contract award.

For unsolicited project proposals, additional steps are required for a project to be considered for BOT financing.

The present BOT Law gives rise to policy issues on certain environmental infrastructure that inhibit smooth implementation. For one thing, there are no national technical standards and regulations for waste management, toxic waste disposal, nor for recycling. Related to this, there is no authority mandated to set these standards. Meanwhile, the lack of environmental structures has resulted in higher collection and cleaning costs for the government. In comparison, developing countries spend 95% of their solid waste budget on collection and cleaning, while developed countries allocate only 70% of theirs on such activities. These issues need to be addressed by concerned agencies and policy-makers so the BOT scheme can make a qualitative difference in providing gaps in environmental infrastructure.

The training attempts to go beyond providing the proper framework for LGU implementation of the BOT process. Participants are furnished with details on relevant environmental sectors. As part of this, project profiles for the following are provided:

- solid waste;
- water storage, treatment and distribution;
- a public market and shopping center;
- a government administration center; and
- post-harvest facilities.

These are projects that are most common among LGUs because of the devolved responsibilities in the LGC. Each profile contains project description and scope, conditions necessary for a successful bid, environmental and social impacts and financial and economic analyses. A more detailed project evaluation model for the latter criteria is provided in the manual.

Related to this, a computer-based model called Management Screens is introduced to the participants. Essentially, the model provides a systematic approach in selecting LGU projects that can be financed using the BOT process. Evaluation of the proposed project's viability is based on weights and scores for the following indicators:

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[130] Investment Coordinating Committee under the NEDA Board.

1) addresses major LGU targets and goals;
2) lack of competing infrastructure;
3) high public support;
4) social and political impact; and
5) environmental impact.

Financial and Economic Internal Rates of Return (FIRR and EIRR) are computed and assigned scores to determine market demand and viability. Other indicators used are those considered important by the private sector so as to assess whether the project can possibly find a BOT sponsor or proponent. Should the projects garner low scores on the IRRs, various packaging techniques are suggested to improve marketability of the project, such as provision of land development rights or tax holidays for the proponent. On the other hand, if the project registers a high IRR, the LGUs are encouraged to transfer some of the financial benefits back to the public via reduction of assumed tolls and tariffs or charging land rentals to the BOT company.

After the theoretical part of the model is introduced, the participants are given some project screening exercises to allow first-hand experience in handling the model. The LGUs are encouraged to use projects that are actually proposed for implementation in their respective areas for the conduct of the exercises. The BOT Center personnel then evaluate results and provide suggestions on how LGUs can further improve their proposals and packaging to make them more viable for private sector funding.

Because this is the first attempt to train LGU personnel on the BOT scheme, evaluation of the success of the seminar can be done only after a significant amount of time. The most logical indicator would be the number of LGU priority projects that would eventually be financed by the private sector to determine percentage of the total number of priority projects and self-sustainability in the future. Monitoring activities should therefore be considered in the regular functions of the BOT Centre, or in a national government agency mandated with such functions.

Assessment of the BOT Process: Energy Sector

The BOT process in the Philippines has been implemented in quite a number of infrastructure projects of the government. However, all these projects fall within one sector: the energy sector. Hence, in conducting an assessment of the success of providing a viable mechanism for public-private partnerships, i.e. the BOT process, it will have to be conducted using power projects as its basis. Nevertheless, lessons learned and experiences gained can still be applicable to other sectors of the economy.

Immediately after, then, President Corazon Aquino stepped into power in 1986, the power sector was posing an imminent threat of a major crisis, based on the calculations of energy demand and supply of the National Power Corporation (NPC). The agency had been the main provider of the country's electricity requirements for the past two decades.[131] However, because of political and economic crisis that gripped the country during the mid-80s and the mothballing of the Bataan Nuclear Power Plant due to strong political opposition, it was foreseen that the agency will not be able to meet the increasing energy demand of the country. Not only did they lack manpower and technical know-how, but equally important was the insufficient funds for major power projects needed immediately to avert energy crisis.

The imminent power crisis in 1987 gave the impetus for the drafting of the Power Crisis Act which allowed the NPC to deal directly with the private sector in procuring power projects consistent with the Power Development Program. The Program, drafted by the NPC and approved by the DOE, essentially contains an efficient portfolio of generation and demand-side resources which attempts to meet future energy requirements through the coordinated addition of required generation and transmission facilities. Hence, on 10 July 1987, President Aquino signed EO No. 215 entitled "Amending Presidential Decree No. 40 and Allowing the Private Sector to Generate Electricity." PD 40 *"places the responsibility of setting up transmission line grids and the construction of associated generation facilities in Luzon, Visayas, Mindanao and the major islands of the country to the National Power Corporation (NPC)."* E.O. 215, on the other hand, allows the private sector to construct and operate electric generating plants that fall into any of the following types:

- cogeneration units: those that produce electric energy, thermal energy, or energy used for industrial, commercial, heating or cooling purposes through sequential use;
- plants with the intention to sell production to the grids, consistent with the development plans formulated by the NPC;
- plants intended primarily for internal use, which also plan to sell excess production to the grids; and
- plants intending to sell directly or indirectly to end-users but are outside the NPC grids.

The Implementing Rules and Regulations (IRR) of E.O. 215 specify the various responsibilities of agencies involved in the energy sector. The NPC is one of the four agencies responsible for providing power all throughout the country, the other three being the DOE, the National Electrification Administration (NEA) and the Energy Regulatory Board (ERB). In particular, the NPC is responsible for

[131] NEDA. Philippines' Private Power Program. Pasig City: 1996.

formulating and implementing programs that provide electricity throughout the country's power grids. In this regard, it may tap the private sector to participate in generation and transmission projects. The other agencies' responsibilities are the following:[132]

- The DOE has overall jurisdiction in accrediting qualified Private Sector Generating Facilities (PSGFs) which refer to any electric generating facility using indigenous energy resources, renewable resource power production facility, cogeneration facility, or any electric generating facility selling power to NPC grids;
- The NEA is in-charge of rural electric cooperatives, particularly the construction and operation of power generation facilities for self-generation; and
- The ERB is concerned with the implementation of regulations concerning power rates of investor-owned electric distribution utilities, electric cooperatives and NPC.

Further to the E.O. was the drafting of RA No. 6957 on July 1990, otherwise known as the BOT Law; which was entitled "An Act Authorizing the Financing, Construction, Operation and Maintenance of Infrastructure projects." It contained rules and guidelines governing the responsibility of both the government and the private sector in providing energy. This was later on amended and became RA 7718, which is what guides the present BOT schemes of government projects, not only in the power sector, but in other government priority areas as well, such as ports, airports, highways, railways, mass transit, telecommunications, sewerage, solid waste, water supply, health facilities, tourism estates, markets, government buildings and other types of infrastructure facilities that are authorized by the appropriate government agency.

Even with the regulatory framework in place, the country still had to undergo power outages daily for the next few years. Particularly bad was the period 1990-1994, when even the major capital of the country was experiencing 8 to 10 hour brown-outs. Needless to say, productivity was greatly hampered and the economic growth of the country slowed down to almost a standstill by the beginning of the 90s. However, without initiating privatization schemes, it was almost impossible for the government to solve the power crisis. The private sector provided the much needed funds and expertise in putting up power projects efficiently. For instance, the first BOT power project, the Hopewell plant in Navotas, started the contract negotiations in May 1988. By January 1991, two and a half years after, the plant had been set up and was providing energy for distribution by the NPC. By 1995, twenty-three new plants had been set up and power outages were virtually eliminated. The projections are such that by 1998, all baseload power plants will have been set up and power supply will be ahead of demand.

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[132] DOE. Energy Regulations No. 1-95

Costing Schemes

Twenty-three power plants set up to start operations from 1991 to 1994, all were financed using the BOT scheme and its variants, such as the BOO[133], ROM[134] and ROL[135]. The Sual 1000 MW coal-fired thermal power plant is still under construction and is scheduled to start operations in 1999. The total cost of all twenty-four projects was US$4.466 B. Four more projects worth US$1.174 B are lined up for bidding. Finally, from 1996 to 2005, ten projects are in the pipeline, seven of which have a total cost of US$1.961B.

The figures may initially be high. However, an innovation that justifies high-cost projects was the concept of "avoided costs" by the NPC. Avoided costs are defined as the least incremental cost that an electric utility, i.e. the NPC, would incur towards meeting its anticipated power demand, if such utility does not buy power from a PSGF. If the amount of the project falls below or is equal to the avoided cost of the NPC, then the proponent is granted the authority to construct. The computation of avoided costs is based on the following formula:[136]

$$AC = \frac{\text{PV of debt service payments} + \text{PV of O\&M expenses} + \text{PV of Fuel Costs}}{\text{PV of Energy Generation}}$$

where AC = Avoided Cost
PV = Present Value
O&M = Operation and Maintenance

Debt service payments are based on:

- required capital investment cost estimated by the NPC;
- construction schedules as estimated by the NPC;
- financing structure based on existing commercial terms (e.g. EximBanks, Eurobonds, etc.); and
- discount factor based on commercial interest reference rate and/or social discount rate.

Fuel costs are based on import prices, while energy generation is based on plant capacity.

Costs of environmental mitigation measures in compliance with environmental rules and regulations are likewise added on the NPC balance sheet.

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[133] Build-Operate-Own
[134] Rehabilitate-Own-Manage
[135] Rehabilitate-Own-Lease
[136] NEDA. *"Project Evaluation Report: 1000 MW Sual Coal-Fired Power Plant Under the BOT Scheme."* 11 April 1994.

On the part of the proponent, costs are "levelized" to adjust for income taxes, since NPC projects are tax-free. Furthermore, interest and exchange rate adjustments are made, whereby two exchange rates are used: the commercial rate and the ICC-prescribed rate. Levelized costs convert yearly variable series of costs into a single, constant, present-worth equivalent value.[137] When used for power plants, levelized costs allow a direct economic or financial comparison of one generation unit versus another. In other words, they allow for a direct comparison of the NPC and the project proponent's costs.

Government Guarantees

The quick response of the private sector meant that there were sufficient profits generated in the power sector to attract a significant number of bidders. An expected consequence would be the sharp rise in power rates. However, inflation was kept at a manageable level, because the profits realized were partly from guarantees provided by the government. One of these was the assured minimum amount of energy to be purchased by the NPC whether it would be distributed for final consumption purposes. In other words, the private sector could safely calculate its sales from power plants without worrying about consumption fluctuations. In the Hopewell example, the NPC guaranteed to purchase all electricity generated by the plant regardless of consumption through the grids. Other guarantees included the provision of plant site and access roads, payment of all real estate taxes and assessments, rates and other charges with respect to the site, provision of fuel and startup electricity through interconnection facilities with MERALCO and the connection of power lines necessary for transmission of the plant's output.[138]

Finally, maybe even more importantly, the losses incurred by the economy in general due to the decrease in productivity and production activities were more than enough to offset the relatively high costs the private sector was charging in providing energy at a rate the government could not match. The political will of the government in undertaking "fast-track" power projects despite higher short term financial costs proved crucial to the success of the program.

The total contribution of the involvement of the private sector from 1991 to 1995 was an additional generation capacity of more than 2000 MW, representing 21% of the country's total generation capacity. In addition, there was an increase of 1150 MW from ROM and ROL activities.

Presently, the government offers less guarantees to the private sector in undertaking power generation projects. There is a ceiling set for payment of Capacity Rates, whereby they should not exceed the senior debt (as defined in the Agreement), but shall exclude equity and any and all amounts attributable to a

[137] Memorandum to Guido Delgado, Office of the President from Enrique Crousillat, NPC, 5 March 1996.
[138] NEDA. Philippines' Private Power Program. Pasig City: 1996.

refinancing or restructuring of the project debt.[139] Put in another way, the private sector is now expected to bear more of the commercial risks involved. Furthermore, unsolicited project proposals will not be entitled to subsidies, equities and guarantees, whether direct or indirect. Despite it, there is still a significant number of bidders willing to undertake power generation projects to meet future energy demands. Hence, despite this new cap on guarantees, the private sector still deems it profitable to participate in the power sector.

Energy Forecasts

With the targeted growth rates set for the Philippine economy, energy demand will necessarily follow suit. Table 2 presents the schedule of energy demand in the country for the next 10 years. In determining energy demand, forecasts of economic growth rates served as the main endogenous variable.

Table 2. Energy Demand for the Period 1995-2005.[140]

	ENERGY SALES IN GWH				PEAK DEMAND IN MW			
	Luzon	Visayas	Mindanao	Phil.	Luzon	Visayas	Mindanao	Phil.
1996	24415	3482	5635	33532	4239	657	959	5855
1997	27331	3918	6641	37890	4744	739	1130	6613
1998	31088	4406	7989	43463	5397	832	1359	7588
1999	35019	5062	9330	49411	6079	955	1587	8621
2000	39054	5794	10711	55559	6779	1080	1822	9681
2001	43111	6727	12102	61940	7484	1254	2059	10797
2002	47616	7536	13640	68792	8266	1405	2321	11992
2003	52623	8348	15339	76310	9135	1556	2610	13301
2004	58191	8995	17219	84405	10102	1676	2930	14708
2005	64383	9636	19294	93313	11177	1796	3283	16256

On the other hand, energy potential using different energy sources has been determined, as shown in Table 3 below:

[139] Memorandum signed by Sec. Roberto S. de Ocampo, Department of Finance, entitled "Guarantee of Project Agreements."
[140] NPC, Power Development Program, 1996-2005, Diliman, Quezon City: September 1995.

Table 3. Energy Potential in the Philippines.[141]

	NO. OF SITES	CAPACITY	ENERGY
HYDRO	245	12308	47459
Luzon	131	8589	31805
Visayas	32	430	1516
Mindanao	82	3289	14138
GEOTHERMAL	40	2365	14502
Luzon	21	1320	8094
Visayas	12	895	5488
Mindanao	7	150	920
COAL		2155	
Luzon		577	
Visayas		923	
Mindanao		655	
OIL AND GAS		3000	
Luzon		3000	
TOTAL		20098	

From these schedules, the NPC has determined the needed generating capacities, totalling to 12,828 for 1996-2005. From these, the NPC will have to put up 7528 MW while MERALCO will need 5300 MW for their loads. To meet these needs, the NPC has lined up power plant projects, all of which will be financed under the BOT scheme.

Table 4. Power Plant Line-Up.[142]

YEAR	TOTAL SYSTEM IN MW
1996	270
1997	580
1998	980
1999	1690
2000	969
2001	1382
2002	1868
2003	1300
2004	1800
2005	2039

These projects will allow the NPC to increase its total installed capacity in the main grids from 10016 MW in 1995 to 20839 MW by 2005.

In terms of energy sources whose potentials have been identified, the additional energy sourced from each type within the next ten years will consist of the following schedule:

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[141] NPC. Power Development Program, 1996-2005. Diliman, Quezon City: September 1995.
[142] NPC. Power Development Program, 1996-2005. Diliman, Quezon City: September 1995.

- Hydro: 2061 MW
- Geothermal: 940 MW
- Coal-Fired Thermal Plants: 2050 MW
- Natural Gas: 3000 MW

Aside from putting up more power plants, another major feature of the Power Development Program is the interconnection of the three island grids, i.e. Luzon, Visayas and Mindanao grids. This will allow efficient sharing of energy resources to maximize the capacities in each plant.

To meet the targets of the Power Development Program, the total amount of investments will have to be within the range of PhP488 Billion, of which 84% will have to be for power generation facilities. Clearly, the private sector still has a large role in meeting the government's targets. In this regard, the government is currently reviewing RA 7718 to further improve its relationship with the private sector. In particular, there is an attempt to get rid of identified bottlenecks and resolve perennial sources of conflict. One such study being conducted is the possibility of eventually privatizing power generation facilities, i.e. greater reliance on the BOO scheme.

Lessons Learned

There are a number of lessons learned from the experiences of the power sector with respect to the BOT scheme. Some of them are:

- A sound regulatory and legal framework. With the passage of E.O. 215 and RA 7718, private enterprises were given the legal authority to undertake profitable, at the same time necessary, projects otherwise reserved for the government.[143]
- Projects are structured competitively. The private sector was allowed to make profit, hence increasing the range of possibilities for project financing.[144]
- Partnership between the government and private sector. Both parties did not have full guarantees for the success of the project, nor did one bear an unequal amount of risk over the other. Hence, diversification of risks among players allowed them to be on equal footing, and both were able to meet their respective objectives.[145]
- Political will. The government had to veer away from its traditional role of being the sole provider of basic infrastructure and services. Because they recognized the potential of the private sector to participate in such activities, the government was able to meet the demands of the public quickly, at the same time, divert its meager resources to less profitable sectors. On the other hand,

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[143] NEDA. Philippines' Private Power Program. Pasig City: 1996.
[144] NEDA. Philippines' Private Power Program. Pasig City: 1996.
[145] NEDA. Philippines' Private Power Program. Pasig City: 1996.

the private sector was able to earn profits while simultaneously undertaking a crucial role of providing necessary services to the public.

As the BOT scheme has proven its success, the government is looking into the possibility of increasing the range of activities for its application. The ADB has recognized the increasing use of the BOT process for future infrastructure projects in the country.[146] In the transport sector, four major mass transit projects are financed through the BOT scheme. Three of these involve the state-owned Philippine National Construction Corporation.[147] The water supply sector is another example of a service that needs immediate investments. Problems are encountered at the moment because the use of avoided costs has not been institutionalized in the sector.[148] In this regard, the BOT Centre conducted training and numerous consultations to improve proposals and models of project proponents, and enticed the private sector to participate with the same intensity and vigor as was demonstrated in energy projects. Furthermore, there is still a need to improve the capability to compute for user charges in this field. The private sector has not yet developed appropriate and tested models that will ensure consumers' willingness to pay water supply charges at competitive rates. Again, the government can provide specific financial incentives for the private sector to participate.

D. Framework for National Government Assistance in Financing Local Government Projects with Social/Environmental Objectives

In recognition of the risks accompanying decentralization, the NEDA, with the support of the WB, commissioned a study on "Financing Local Government Projects with Social/Environmental Objectives." It involved professors from the University of the Philippines-School of Economics to come up with policy studies and recommendations on how to address the problem of financing such projects. The final output was a framework that would guide government units, both at the local and national level, in undertaking programs that could be done on a joint basis.

1. PRINCIPLES OF DEVOLUTION

The following principles of the Local Government Code are given recognition in the framework:

- **Accountability of elected officials**. National agencies shall not intervene in the implementation of the project, except in cases of default. Nevertheless, they shall develop monitoring mechanisms to assess the performance of the LGU.

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[146] ADB. *Oxford Analytica Asia Pacific Daily Brief.* 21 June 1996.
[147] ADB. *Oxford Analytica Asia Pacific Daily Brief.* 21 June 1996.
[148] Based on the interview conducted with Ms. Tina Avila of the BOT Centre.

- **Autonomy of local governments.** The LGUs shall set their own priorities independently. In turn, national agencies should not promise grant financing specifically to serve their own preferences in investment proposals.

- **Consideration of local needs, resources and preferences**. Public consultation shall be given due accordance, specifically with communities directly affected by the project.

2. PRINCIPLES OF NATIONAL GOVERNMENT ASSISTANCE

In addition to the abovementioned principles of devolution, the following principles are further incorporated in the framework:

1. **Importance of community involvement.** This refers to greater participation of NGOs in project implementation.

2. **LGUs have a closer feel of the people's needs.** Based on this, there is the intention to allow for greater flexibility in the decision-making of LGUs. National agencies shall limit their selection criteria of target communities to general provisions only.

3. **Community equity contributions and LGU counterpart are essential to the quality of project outcomes.** Involving LGUs in the costs would make them more accountable in spending for the project. Not only will they consider themselves as major stakeholders, but they can also serve as a gauge of how much the LGU needs the project, as they will be forced to prioritize their investments.

4. **Cost recovery through user charges is encouraged; recurrent operation and maintenance expenditures shall be given low priority for national government grants.** In line with the objectives of the LGC on resource mobilization, the LGUs shall be encouraged to collect user fees for the operation and maintenance of local public facilities. This further lessens the dependence of the LGUs on the national government for projects that are operated at a loss.

5. **Implementing arrangements will promote inter-agency coordination**. This aims to prevent overlapping in target areas and beneficiaries.

6. **Private sector participation should be elicited whenever feasible**. The private sector's advantage in undertaking projects, particularly in terms of quality and cost-efficiency, should be taken advantage of. Schemes such as competitive bidding, BOT, franchising and volunteerism will be promoted to finance such projects.

7. **The grantors' objectives will be safeguarded**. To ensure that the project is in line with the sector's objectives, the national agency will continually monitor the delivery and outcomes, undertake joint reviews of progress and provide technical assistance during implementation. Grantors refer both to sector/line agencies and oversight agencies, i.e. Dept. of Finance, Dept. of Budget and Management and the NEDA.

3. INTERVENTION CRITERIA

The overarching goals of the MTPDP, i.e. sustainable development and social development anchored on poverty alleviation, continue to be the guiding principles for this particular framework. A set of criteria has been developed to assess whether a project is feasible under this framework or not, whereby the national government intervenes in the financing and management of national programs that have been supposedly devolved:

- **Equity**. This is based on two factors: income class and economic class, the latter referring to economic indicators such as poverty incidence. The poorer the LGU fares in these two categories, the greater the need for intervention in allocation of resources. The intervention is intended to be *"transitory and limited so as not to discourage sound fiscal management and prudent use of resources."*[149]

- **Externalities.** This refers to spatial externalities, whereby non-residents of a particular LGU will be affected. The fact that residents other than those under their purview will either benefit or incur costs due to the project might cause it to be given a lower priority.

- **Economies of Scale**. A larger area served by a project might be implemented more effectively if the costs were to be shared by the LGUs jointly affected. A national agency can facilitate this joint effort by intervention measures such as promoting such projects and bringing the affected LGUs together.

4. NATURE OF INTERVENTION

Grants provided to the LGUs under this framework will have three characteristics:

- **Matching**. Grants will be given to the LGUs on the condition that they provide their appropriate share of the costs and preparation work. The agency will provide a smaller share of the cost if the project has revenue-raising possibilities for the LGU. On the other hand, the agency will shoulder a bigger cost if the

[149] NEDA-Public Investment Staff. Policy Framework for National Government Assistance for the Financing of Local Government Projects with Environmental and/or Social Objectives. Pasig City: June 1996.

LGU is of a relatively lower economic class, whereby the investment needs are higher relative to their local resources.

- **Specific**. This refers to the authorized expenditures of the national agency. The project should be in line therewith.
- **Close-ended**. Grants of this nature shall be temporary and limited.

Note that project proposals that do not specify the above criteria shall be subjected to the usual ICC procedure on LGU access to ODA loan funds. In particular, they could avail of loans sourced either from the Municipal Development Fund or from a government financial institution under relending terms determined by their respective policy-making bodies.

5. PROCEDURE

The following steps shall be followed in getting approval for projects:

1. **Formulation of a proposal in the context of a sector program**. The national agency will initiate the formulation of a co-financing program. This will be based on its sectoral plan, including sectoral targets at the national and regional levels. The sectoral plan in turn is based on the Social Reform Agenda and the Philippine Agenda 21. Under this, it is emphasized that it is the *"responsibility of national agencies as proponents to do the usual steps in program development."*[150]

2. **Program Approval Process**. The agency submits the proposal to the NEDA Board through the ICC. This is the usual procedure for any proposal that requires ODA financing. The NEDA will ensure that the project is consistent with devolution objectives. It will also determine budgetary provision and funds flow mechanism. Finally, it will decide on the form and level of support from the national government for the devolved activities. The cost-sharing formula proposed by the national agency shall be used as a basis.

3. **Program mobilization**. The national government is to *"assume the responsibility for financing and securing the needed budgetary appropriations."*[151] A project management office (PMO) shall be set up in the central agency which will undertake promotional activities to inform the LGUs of such a program. The PMO can perform other functions such as accrediting the LGUs, monitoring of project and providing technical assistance to the LGUs. An intermediary body at the regional level shall likewise be set up for conducting some of the national agency's activities, such as project selection and monitoring.

4. **Project identification and planning**. The LGUs will be given the autonomy to identify local projects and program activities in their local socio-economic

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[150] Ibid.
[151] Ibid.

development plans and land use plans. Meanwhile, the national agency does promotional activities on social/environmental projects that can be subjected to this framework.

5. **LGU project approval process**. The central agency will set a maximum allocation for each region that will allow them to meet sectoral targets addressed by the program. Further subdivision of this allocation can be done by a regional body, i.e. the RDC. It can further act as technical oversight *to "make sure that performance standards are well understood at the field."*[152] It further states that *"to the extent possible, programs should elicit proposals from the LGUs rather than PMO field units doing them for LGUs."*[153]

6. **Project Implementation**. This will be the responsibility of the LGU. Monitoring will be done by the regional body identified, such as the RDC, or by the body created by the RDC for this purpose.

6. POLICY IMPLICATIONS OF THE FRAMEWORK

The framework attempts to address two issues that demand urgent attention: the need for the government to undertake social and environmental programs at the local level, and the concern for the lack of technical capability of the LGUs to undertake them. While the sectoral functions have been devolved to the LGUs, national government agencies still see the need to intervene. For one thing, the LGUs lack experience and skill in undertaking the devolved functions and performing efficiently at this point in time. From the start of the devolution process in 1991 until now, resource mobilization has hampered the LGUs from performing effectively. On the other hand, these programs cannot wait for the LGUs to learn from their experiences before they take them on, simply because of the urgency of problems these programs address.

It is recognized that this framework serves only those programs that meet the criteria of the framework, i.e. those that contribute to equitable distribution of finances among the LGUs, those that contain externalities and those that can be subjected to economies of scale. The objectives and rationale are laudable, and indeed reflect the gaps in the regular provision of services by the LGUs. Most commendable is the encouragement of user charges for cost recovery, a process that ensures sustainability of the program. Hopefully, this criteria will be a major factor in choosing programs to be implemented.

It claims to subscribe to the tenets of the LGC by stating principles such as accountability of local officials, autonomy of local governments and consideration

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[152] Ibid.
[153] Ibid.

of local needs, resources and preferences. However, these principles seem to be secondary to intervention if the proposed procedure were to be followed in detail.

From the very start of program identification, the principles of decentralization are not clearly taken into account. If one were to be true to decentralization, the formulation of the proposal would primarily be based on LGU project proposals which, presumably, would reflect the needs and conditions of the locality. The role of the national agency would focus on checking for overlaps and providing venue for joint efforts of LGUs whose individual projects affect common communities and/or geographical areas.

If the LGUs do not identify these programs as their priority, but there is an immediate need for them to do so, then maybe the national agency can undertake promotional activities. This is especially relevant to environmental projects, such as watershed development or sewerage systems because the catchment area usually extends beyond the boundaries of one LGU. Experience has shown that because of large catchment areas, the LGUs tend not to prioritize these projects. In this case, national government intervention is in order. Otherwise, the LGUs might find it presumptuous of the agency to be marketing a neat proposal to them without prior consultation with their development plans. As it is right now, the reverse process is being proposed, whereby after the agency has formulated the program proposal, it then gives it to the LGUs for them to match their projects with the agency's program.

The contradiction here is that the IRR expects the LGUs to identify *"local projects and program activities within their priorities and local plans."* In other words, it is presumed that the implementing activities are already contained in local documents and are to be matched with the program proposal initiated by the national agency. This program proposal is based on the agency's sectoral plan. Hence, from the very start, national agencies could have used local development and land use plans as their primary data in developing program proposals. More importantly perhaps, it would be necessary for these programs to be identified as priorities of the LGUs to be supportive of the programs especially since they are expected to shoulder 50% of the costs. It would be very difficult to get their support otherwise.

Finally, the formulation of another oversight body at the regional level is proposed. It should probably be ensured that the functions of this body would not overlap with the monitoring functions of the national agency, and that no additional layers within the bureaucracy are created. Otherwise, this defeats the purpose of the LGC which is to promote efficiency by deleting unnecessary steps for implementation of local government projects.

IV. Case Studies in Implementing Sustainable Financing Mechanisms for Marine Pollution Prevention and Management

In recognition of the growing importance of environmental management concerns in all aspects of the government, the DENR has embarked on three major projects that are aimed to incorporate such issues in the functions of almost all implementing agencies, including the LGUs. Furthermore, the private sector and the NGOs have served as major partners in the conduct of most of these programs. Provided herewith is a summary of these projects.

A. National Government

1. METROPOLITAN ENVIRONMENTAL IMPROVEMENT PROJECT (MEIP)

The MEIP is a UNDP-funded project administered by the WB which primarily aims to assist pilot urban centers in Asia in addressing and eventually reversing the degradation of their environments.[154] Coverage of the program includes Beijing, Bombay, Colombo, Jakarta, Manila and Katmandu. Six areas of work have been identified:

1. development of a Regional Environmental Management Strategy (EMS) to provide a framework to guide government institutions, private sector agencies, NGOs and communities in planning activities to address urban environmental problems;
2. enhancement of coordination and collaboration between: (i) environmental protection institutions and (ii) economic policy planners and sectoral agencies;
3. identification and feasibility study preparation of high-priority investment projects for the improvement of urban environmental management;
4. establishment and/or strengthening of metropolis-wide networks, linking government efforts in urban environmental management with the initiatives of the private sector, NGOs and low income communities;
5. provision of technical assistance to communities, as well as to private enterprises, in the identification, planning and implementation of local projects to improve waste and resource management; and
6. facilitation of information exchange within and among the MEIP pilot cities.

In Manila, the DENR is the lead implementing agency of the MEIP. Five cities and twelve municipalities in Metro Manila and portions of Laguna, Cavite and Bulacan are the pilot areas for the project. Major projects of the MEIP-Manila include:

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[154] MEIP. *The Urban Environment.* Vol. 1, No. 1, June 1994.

a) **Urban Air Quality Management Strategy in Asia (URBAIR)**

An action plan has been prepared to address air pollution problems, whereby implementation will be carried out by government agencies, the private sector and NGOs.

The components of the action plan include:

- improved fuel quality;
- fuel switch to less pollutive;
- air quality monitoring;
- traffic management;
- transport demand management;
- inventory/dispersion modelling;
- technology improvement;
- institutional and regulatory framework to enforce rules and regulations related to air pollution;
- land use planning;
- awareness raising/training; and
- further studies.

Each component is translated into a number of activities to be undertaken by relevant agencies. The milestones identified in the plan are:

- approval of the action plan by the PCSD;
- introduction of unleaded gasoline in all cities nationwide in 1995;
- decrease of sulphur content to 0.5% in diesel in 1996;
- identification of lead substitute for "lubricity";
- all tested vehicles pass emissions test;
- decrease in the blood lead level from 1993 levels in vendors, policemen and street children;
- reduction of the Hartridge Smoke Level from 66 to 50;
- passage of the Clean Air Act in Congress; and
- TSP reduction by 30% from 1993 levels while aiming for 180 by 1995.

b) **Industrial Efficiency and Pollution Control (IEPC) Project**

The IEPC Project is composed of a study on the use of common wastewater treatment facilities; the development of a pollution charge system to reduce contribution of industrial firms to the degradation of the Metro Manila environment; preparation of a training and information, education and communication plan; a study on the "Economics of Pollution Control Options in the Cavite Industrial Area"; and finally, application of waste minimization/clean technology for industries. An investment program is also

being prepared to finance investments of private industry in environment-related projects.

b1) Common Industrial Wastewater Treatment Facilities (CTF)

The objectives of this program are:

- to identify 5-10 cost-effective CTF schemes which will achieve lower units of cost of wastewater treatment than if undertaken individually and subsequently develop 2-4 of these schemes to the stage of preliminary engineering and appraisal; and
- to prepare pollution reduction action plans for 8-10 individual enterprises and 2-4 CTFs suitable for permit approval by DENR or LLDA.

In particular, the following outputs are expected from the study:

- a regulatory framework for THW management;
- waste producers' awareness of THW and options for dealing with them (on-site storage, collection, transport, treatment and disposal);
- a feasibility study for the establishment of individual and collective facilities for dealing safely with THW; and
- recommendations for the reduction of THW arising at the source.

Phase I of the project covered:

- site selection;
- data collection and analysis to determine the number and type of participating industries based on techno-economic considerations;
- systems alternatives for in-plant control, pre-treatment, collection and conveyance system, treatment plan, ultimate disposal, cost estimate, environmental impact and system selection; and
- institutional aspects, such as alternative models of ownership and management.

In assessing the present situation in Metro Manila with respect to THW management, the study reveals that there is no comprehensive plan for effectively managing THW. In effect, there are no identified current and future needs for THW facilities, including appropriate means of dealing with specific waste streams.[155]

Disposal schemes in the country resulted in adverse impacts on the environment. A survey done by the study enumerated the most common schemes practised by industries:

[155] Entec Europe Ltd., Toxic and Hazardous Waste Management Project. Metro Manila: January 1996.

- discharge to rivers, watercourse and the sea of liquid/sludge THW, either directly from the production site or indirectly using road tankers;
- offshore marine disposal of THW, in direct violation of existing legislation and international obligations;
- introduction of THW into the municipal waste stream, resulting in its disposal at facilities licensed only for municipal solid waste (MSW);
- domestic waste facilities such as septic tanks, often with major implications not only for the operation of the septic tank but also for the collection and disposal of resulting sludge;
- disposal at "closed" dump sites in and around Metro Manila;
- burial at other sites controlled by generators, or simply at some other convenient location that is uncontrolled and unlicensed for waste dumping;
- above-ground dumping, causing uncontrolled runoff and/or air dispersion; and
- disposal to a transport operator, without regard to what happens to the waste once it leaves the generator's site .

Nevertheless, there were some positive experiences cited by the study:

- the Bayer incinerator at Canlubang;
- Integrated Waste Management Inc. Incinerator at Calamba;
- Export of Erthco, a US-based company, for overseas disposal;
- Increased use of on-site treatment for aqueous liquid wastes, although this is focused on high BOD wastes which, other than the BOD loading, do not pose major health and environmental threats;
- Recovery of wastes that have potential value; and
- Stockpiling of THW by generators, hoping for the availability of proper disposal facilities in the future.

Findings of the study revealed the following:

- The quantity of THW is much greater than what was previousiy estimated, with data collection showing 200,000 MT of THW produced each year in NCR, Region III and Region IV alone.
- Waste minimization, including reuse, recovery and recycling is a viable option, but does not completely eliminate THW, implying the need for specialized treatment and disposal in order to avoid adverse impacts on the environment, on public health and on the economy.

- Varied THW requires varied treatment and disposal methods. Some cases required individual treatment procedures at the source, while some can be treated with CTFs.
- CTFs can be operated as private enterprises, with THW generators paying fees for the treatment and disposal of their wastes. However, due to the large initial investment required, effective enforcement of laws, rules and regulations with respect to treatment handling, transport and disposal is necessary before private investors become willing to establish CTFs. This indicates the need for a strict regulatory framework provided by the government.

Conclusions of the Study

The IEPC has come up with the following conclusions relative to THW management:

- THW is a growing threat to Metro Manila, potentially harming not only human health but water supplies, fisheries, tourism and even industry itself;
- There are clear indications of large quantities of a wide range of THW that are disposed of improperly, although there are no quantifying methods employed yet;
- Despite problems caused by improper disposal, priority should still be given to minimization of producing THW at the source;
- *"There will be some scope for managing some forms of THW effectively either on site or in collective facilities designed to handle a particular waste stream produced by several sites in the same geographical area";*
- A central treatment, storage and disposal (TSD) facility is required to deal effectively with a wide range of different wastes, including the more intractable forms of THW;
- The TSD facility can be funded through the BOT scheme, not only to access private funds but to tap overseas experience and technology as well; and
- Given the long lead time for any new TSD facility, short-term options must be pursued, e.g. in storage, to help reduce the existing adverse environmental impacts of THW.

Meanwhile, Phase II involves the preparation of detailed feasibility studies for selected industries. Training programs for industrial units and CTF operators were recommended and are being undertaken. At the moment, studies are being prepared for each industrial subsector/area and firm involved in the sample.

Other related efforts in minimizing THW are the following:[156]

- work on the implementation of RA 6969 by IEMP;
- identifying potential CTFs serving specific industrial sectors and establishing on-site treatment at larger individual enterprises; and
- the Pasig River Rehabilitation Project, which is focused on reducing discharges of harmful effluents by industry, including PMAs of individual companies.

b2) Training and Information, Education and Communication (IEC) for Industrial Efficiency and Pollution Control (IEPC)

This part of the study on pollution control has the following objectives:

- Provide a forum for the different institutions, i.e. government, industries, NGOs, communities, academic institutions, etc., to exchange perspectives and assessments of needs in urban environmental management;
- Establish a coordinating unit, i.e. a Clearinghouse, to track the information and manpower needs of all concerned and mediate the supply and demand for these needs; and
- Prepare a series of targeted training and IEC initiatives.

The main outputs of the study are:

- Training and HRD Action Plan for the first five years of operation of the Clearinghouse;
- Assessment of the feasibility of establishing a Clearinghouse Secretariat within one of the institutions in the sector; and
- Detailed plan to manage the operations of a training and HRD Fund placed under the supervision of the Clearinghouse Board.

The five-year Human Resources Development (HRD) and IEC Plan for IEPC has been developed. It identifies training and human resource development needs in the industrial pollution control sector. Moreover, it envisions sustainable development of world-competitive industries on the basis of a well-informed workforce highly trained in the areas of industrial efficiency and pollution control. It further recognizes that such a workforce can consistently operationalize and improve technologies, such as waste minimization and pollution reduction/ prevention, which will ensure sustainability of industrial development in the country.

[156] Entec Europe Ltd.

The Clearinghouse shall be integrated into the regular functions of the EMB.

As part of a study on the "Improvement of the Quality of Industrial Effluent Data in the Philippines," a Standard Reference Manual for industry level Pollution Control Officers (PCOs) was formulated to guide PCOs in preparing self-monitoring reports to be submitted to the DENR and LLDA. The main objective is to improve the quality of effluent data from industrial plants, as well as standardize the forms for firms in self-reporting of effluent data and make a report providing an assessment of the present state of effluent monitoring in Metro Manila. The Manual was presented in a workshop on industrial effluent sampling held last year for PCOs of industries located at the NCR. At present, the DENR is drafting the necessary order for the use of the approved Reporting Form in the quarterly self-monitoring reports which industrial firms are required to prepare.

Worksnops have been conducted in pursuit of the objectives of this project. A training needs assessment survey of various sectors involved in pollution control was undertaken, the findings of which were presented in a workshop. Furthermore, institutional aspects of the Clearinghouse were discussed in a separate workshop, the output of which consisted of a system of tracking information and manpower needs of all concerned which will mediate the supply and demand for these needs.

Efforts in rehabilitating Laguna Lake include workshops held for 416 accredited PCOs of companies within the NCR. Lectures on the latest rules, regulations and other requirements of the DENR and LLDA were delivered, emphasizing EIAs and the adjudication of pollution cases. Technical assistance programs on waste minimization/clean technologies, industrial pollution database, industrial waste exchange program, PMAs, environmental training, technology services and equipment were also presented for the information of the participants. Corollary to this was the updating of information on the firms' industrial pollution management for the database of the DENR, EMB, LLDA and River Rehabilitation Secretariat (RRS).

Meanwhile, Philippine representatives to foreign workshops have likewise presented papers on improving pollution control and abatement. Examples of these are the papers presented by Prof. Manny Gaspay of the Asian Institute of Management on "Decision-Making Processes for Sustainable Development in the Philippines: The Handling of Quantitative and Qualitative Issues", and Ms. Bebet Gozun of the MEIP on "The Economic Valuation of the Impacts of Pollution in Laguna Lake."[157]

[157] Both papers were presented at the workshop entitled "Human Resources for Sustainable Development" held in Brisbane, Australia on 30 January - 1 February 1995. The workshop was organized by the Asia Pacific Economic Council - Human Resources Development and Business Management Network, and was participated in by representatives from six Asian countries, Australia and Canada.

b3) Economic Incentives to Promote Water Pollution Prevention and Abatement

This study aims to look into the feasibility of establishing a pollution charge system in the country. The activities involved include:

- Assessment of the legal alternatives to imposing water charge;
- Review of the technical aspects of existing regulations and preparation of a detailed proposal for updating and suggesting complementary efforts;
- Assessment of the unit values for the water charge; and
- Development of an Action Plan for the implementation of the proposed water charge system.

The study came up with three recommended pollution charge models based on studies conducted on the environmental conditions of and industrial discharges into Laguna de Bay:

- ***Ratio Model.*** This includes the setting of a revenue target, as well as charging a fixed and variable fee for all industries discharging wastewater. The fixed fee is set at a level necessary to meet the revenue target regardless of concentration and load. The variable fee is calculated by multiplying the dischargers' compliance ratio, computed as actual concentration divided by the standard, by a base fee.
- ***Variance Model.*** This is similar to the ratio model, except that the variable fee is calculated by multiplying dischargers' annual BOD loading in excess of the amount allowed under a concentration standard by a unit charge expressed in PhP per kg of BOD.
- ***Marginal Compliance Cost Model.*** The objective of this is to create a strong incentive for industries to comply with effluent standards. No fixed fee is established and revenue generation is not an objective. The charge is calculated by multiplying the annual BOD loading in excess of the amount allowed by the standards by a unit charge, expressed as PhP per kg, and set at a level greater than the firm's BOD unit removal cost.

b4) Economics of Pollution Control Options in the Cavite Industrial Area

Guidelines for environmental protection and industrial pollution control in Cavite are being formulated in response to the request from the RTD of Region IV. The Technical Working Group for the activity is composed of representatives from the government, NGO community and industry. Moreover, lessons learned from LLDA experience are being incorporated through representatives from LLDA Authority sitting in the TWG.

Aside from the guidelines, a full-blown study on the economics of various pollution control options is being undertaken. This is composed of three phases:

- Collection, review and analysis of existing information to identify a representative cross-section of industrial activity in the project area, to determine and assess existing and potential environmental problems associated with these industries and to evaluate the technical and financial aspects of existing pollution control systems.
- Identification of cost-beneficial and implementable pollution control options available to specific industries identified. CTFs and pollution prevention concepts form part of the options. Research and methodologies used will be documented to enable replication of the study in other parts of the country.
- Project implementation which will begin with a workshop to discuss the findings and recommendations of the study team. The expected output consists of individual firms having the necessary technical and financial information to make "wiser" decisions on their respective pollution control programs.

b5) Waste Minimization/Clean Technology for Industries

This project assists private industrial firms to reduce waste by identifying clean technologies available in the market and conducting actual plant audits (called PMAs) to determine specific WM/CT needs of audited firms. Coverage of the project includes:

- twenty-five actual plant assessments which carry out environmental audits of plant production processes;
- workshops among participants from industry, government and consultants to discuss the WM/CT process that was conducted for a particular sector, as well as the findings and recommendations; and
- technology-matching to facilitate exposure visits to waste minimization and clean technology in the US to assess applicability and cost effectiveness of such technology in the Philippines.

The industrial sectors covered are:

- food processing;
- slaughterhouses/piggeries;
- beverage production;
- chemicals;
- electroplating; and
- tanneries.

The choice of industry was based on organic pollution and THW emitted. Industry associations provided assistance in identifying volunteer firms. Training workshops for each industry type were conducted by the associations

themselves. Trips to the US to gather information and technology on PMA process were sponsored by its members.

PMAs were conducted for the Beverage and Tannery industries, with two companies from the former and three participants from the latter volunteering for the appraisal. The process consisted of a walk-through of the facilities, thereby identifying opportunities for waste minimization, pollution prevention, cleaner technology and pollution control. In addition, two separate workshops were conducted for the respective industry associations of the aforementioned sectors to share PMA experiences, which resulted in the replication of PMA process by other firms in the same industry.

A unique feature of the MEIP PMA is the inclusion of a DENR representative in the process. Industries are usually wary of revealing production processes to government for fear of being penalized for violating government regulations, some of which they may not be aware of. However, the MEIP was able to work out an arrangement that the information acquired during audits will not be used against them.[58]

Results proved the success of the project. For instance, the Philippine Electroplaters' Association (PEA) developed a waste minimization program for its 40 members. Other volunteer firms reported substantial savings after implementing the recommendations from PMAs. Likewise, industry associations involved experienced a growth in their membership, paving the way for waste minimization schemes to be implemented by more firms.

Other workshops include those for chemical and dairy and food processing industry subsectors which focused on discussions on the process of conducting environmental assessments to identify options for waste minimization, pollution prevention, cleaner technology and pollution control for these industries.

Economic incentives will be implemented to reduce pollution once the draft Environmental Code is passed in Congress. In particular, pollution charges shall be levied on polluters, the amount of which depends on the level of pollution emitted and disposed of. A test case is the LLDA whose Charter allows the agency to impose pollution charges on polluters of the lake. The fees collected will be maintained by LLDA to be used for maintenance activities of the lake, as well as for monitoring, infrastructure and other relevant programs of the agency.

In line with improving industrial performance in minimizing pollution, a rating system will be developed for industries. The objective is for industries to comply with pollution laws and create the atmosphere for them to be eligible for ISO-14000. A non-government agency will implement the program, and twenty (20) industry associations will be tapped initially. The DENR has drafted

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[58] MEIP. Local Environmental Action Agenda Manual: Models of Community Governance. DENR, Quezon City. 1996.

an MOA containing the implementing measures for the program to be signed by the President. Public disclosure of generated waste shall be required of polluters, and colors will be assigned to industries, depending on their category. For instance, black will be assigned to industries that pollute the most, while green will be for those that implement waste minimization schemes but are still polluting nonetheless. Incentives for industries that are able to eliminate all waste are still being worked out.

c) Community Participation and Advocacy for Ecological Waste Management in Three Barangays and One Public Market in Metro Manila

Community participation, or community governance, is seen as a long term viable solution to solving solid waste management problems at the micro level. For one thing, solid waste management has been devolved to the LGUs. Disposal problems have grown over the years and flooding and health diseases are now being attributed to lack of proper facilities and technology in managing solid waste. However, funds for such projects are still wanting and the LGUs have yet to develop their capabilities in raising their own financing for the newly devolved functions. Allocations from national coffers are not enough to cover for their funding needs. Given these, the MEIP introduced ecological waste management initially to a few communities and tested the viability of such a technique. The technology implemented has very low costs involved. The whole community participates in the process, thereby ensuring commitment of the stakeholders themselves in making the project work.

The Paco Public Market and three barangays in its vicinity have undertaken a community-based and community-led solid waste management project. The private sector has participated in this activity through PRC-Unilever which provided the research and data gathering for the implementation of a waste management scheme. Vendors and haulers in the public market had organized themselves into cooperatives for easy mobilization. Composting of waste was the selected option for waste management, and in the process, four tons or 40% of the total waste in the area were processed daily, which was equivalent. Selected participatory techniques in community governance of their environment have been tested and documented for possible replication in other communities. Other areas in the country that have implemented similar schemes are Naga and Davao. A comprehensive evaluation of the successes and failures of these projects shall be undertaken by DENR by the end of 1996.

In a speech[159] by Ms. Bebet Gozun[160] on Community Governance in Urban Environmental Management, the factors for success of community-based projects, based on the lessons learned by the MEIP, were outlined:

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[159] Speech delivered at the World Bank's Second Annual Conference on Environmentally Sustainable Development held at the National Academy of Sciences, Washington DC, USA, on 19-21 September 1994.
[160] Ms. Gozun is the National Programme Coordinator of MEIP/IEPC-Manila

- The community must understand the problem and must be willing to act. Awareness of the problem which directly affects them, as well as the realization that something must be done, will eventually convince the community that they themselves can do something to solve it. Planning and organizing must be undertaken by the citizens themselves.
- A champion is needed. A strong leader always emerges from within a community, one who will generate and sustain interest in the project. The leader is usually capable of pushing and guiding the community to contribute to the project's success and sustainability.
- Individual members of the community must have a sense of ownership of the project itself because they are the primary stakeholders.
- No community can survive without outside support. Access to technologies which are available from government, NGOs, the private sector and foreign-assisted projects should be tapped. Furthermore, projects, especially during the start-up stage, need technical, financial and logistical support from outside sources. In this regard, communities should establish linkages with the LGUs, NGOs and other relevant organizations to ensure the success of their programs.
- Projects must be doable. Initial projects must not be too ambitious in order to increase the chance of success. The benefits therefrom must be tangible so as to encourage the community to undertake more projects using the same approach.

In order to eventually lower the rate of total urban environmental degradation, the MEIP intends to replicate its success stories nationwide in the near future. A model ordinance on waste management for the LGUs to implement waste minimization schemes has been drafted by the MEIP project and propagated for the LGUs nationwide to adopt. Part of the financing schemes indicated in the ordinance involves collection of garbage fees, the amount of which depends on the volume of waste generated by the household. The DENR targets establishing at least one Ecological Waste Management Project in each province by the end of 1996 and in all the LGUs by the end of 1997. It has trained 300 information officers to go around the country and introduce the concept of community-based solid waste management to local governments and communities.[161]

To be able to access initial funding for a comprehensive waste management program and waste minimization schemes, the DENR plans to schedule a forum involving the DBP and LBP, whereby the finance institutions will outline the various windows available to the LGUs, as well as to the private sector, that can be used for funding of such projects.

[161] MEIP, Local Environmental Action in Metro Manila: Models of Community Governance, DENR, Quezon City: 1996.

d) Valuation of Economic Impacts of Environmental Degradation in Laguna Lake

The economic impacts of deterioration of the water quality of Laguna Lake have been valued in terms of the effects on fish production on its potential as a source of drinking water for Metro Manila and on the health of the people residing along the lake's shores. The study was used in the preparation of the Master Plan for Mount Makiling and Laguna Lake.

e) Public Sanitation Facilities (PSFs)

PSFs have been established in selected areas in Metro Manila which do not have access to sanitation facilities and potable water. Assisted by the WB, the government funded the construction and/or rehabilitation of 41 PSFs from 1980-1987, composed mostly of toilets, bathrooms, public standpipes, laundry areas and septic tanks in highly congested and depressed areas of the city. The MMDA operated the facilities at the onset, then passed on the management including the collection of user charges and payment of maintenance personnel, water and electricity dues to local community user groups called Barangay Sanitation Facilities Associations (BSFAs) or Barangay Councils (BCs).

In 1992, the MEIP commissioned a study to conduct an evaluation survey and study the current conditions of PSFs and to recommend actions concerning the PSF program. Out of 41 PSFs, 25 remained operational but needed varying degrees of rehabilitation. The Program decided to assist by attempting to mobilize the community to address its need for water and sanitation facilities. The objectives of this project were:

- to assist PSF user group and barangay and municipal officials in assessing PSFs and in designing action plans pertaining to the PSFs; and
- to draw out mechanisms from case experiences which can be adopted by other PSFs.

Community participation was mobilized during all stages of the project, from data gathering and analysis, to the design of rehabilitation plan, to actual rehabilitation of the facilities. Dialogues with residents were conducted regularly and cross-facility visits were undertaken to exchange information on the various experiences of the different PSFs.

Lessons learned from the project were:

- Since these are highly congested areas which have no direct access to potable water and sanitation facilities, and the urban poor cannot afford the installation of individual and common facilities, PSFs are still appropriate for urban poor settlements.
- Participatory research is imperative in the entire life of the Project.

- The community is capable of community-action planning and implementation, and can contribute toward the sustainable management of community-based projects.
- Linkages with LGUs and NGOs are necessary for auxiliary services and technical support to PSFs.

f) **Youth Ecology Camp**

The Camp is a one week live-in workshop for high school student leaders and teachers. The main objectives are:

- to heighten awareness among the youth on issues concerning local, national and international environments;
- to cultivate a deeper understanding of the need for a renewed people/earth partnership; and
- to organize a Global and National Youth Environmental Network to plan and facilitate specific projects and activities addressing particular environmental problems.

The Brown Fund

In order to preserve and replicate the successes of the MEIP, a Brown Environmental Management Fund, or Brown Fund, has been established on September 1995 through a grant from the Institutional Development Fund (IDF) of the WB to the DENR. The fund aims to develop a viable and sustainable institutional mechanism, first in Metro Manila, and later, throughout the country. The intention is for the various stakeholders, i.e. the public sector, the private sector and NGOs/POs involved in urban environmental management to be able to access the Fund. In the short term, it aims to establish a non-government institutional capacity to promote and support the joint collaboration of citizen and business groups in urban and industrial environmental management.[162]

A Steering Committee (SC) handles the Fund. The SC is composed of two representatives from the government, i.e. the DENR and the DTI, representatives from NGOs, i.e. two from networks and two from community-based NGOs and three representatives from industry, i.e. one from each national association, a subsector association and an area or municipality/city-based association. The DENR serves as the chairperson. All members have a tenure of one year, except for government representatives.

The SC's functions are to:

- serve as the sole policy-making body of the fund;

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[162] MEIP. The Brown Fund. DENR. 1996.

- develop selection criteria for subprojects which will be eligible for grant funding;
- develop procedures for subgrant application, processing, awards, reporting, evaluation and monitoring;
- undertake final review and approval of reports submitted by subgrantees;
- undertake final evaluation and approval of request for fund disbursements;
- supervise, monitor and evaluate the performance of all subprojects awarded;
- conduct ocular inspection/evaluation of subprojects prior to their turnover/ termination;
- subject to WB concurrence, select, appoint or designate the members of the TAT;
- exchange views with WB representatives on the progress and results of activities funded by the fund;
- approve semi-annual progress and financial reports prepared by the secretariat and submit the documents to the WB; and
- perform such other functions as may be needed to properly manage the fund.

Guidelines for operations of the SC have been formulated, as well as selection criteria for subprojects that can avail of the fund. Noteworthy is the criterion on sustainability that the project must possess before it can be considered for grant funding, whereby the project must be income-generating/provide livelihood. Furthermore, the project must be community-based or area-based and should be implemented within a year of approval of application. Only projects for NCR, Bulacan, Cavite or Laguna will be eligible. The SC is given one month to evaluate a proposal and awards shall be given quarterly. Monitoring will be conducted by a TAT formed by the SC every so often. Before the project is turned over to the community, the SC is required to visit the site and make their final evaluation.

2. INDUSTRIAL ENVIRONMENTAL MANAGEMENT PROJECT (IEMP)[163]

The IEMP project is a government initiative that intends to respond to the growing concern for the environment. It is premised on the perception that the industrial sector is ready to change traditional attitudes and practices towards pollution control and waste management. The ultimate goal of the project is to encourage sustained economic growth in the industrial sector while reducing the adverse effect of environmental pollution and improving public health. Consistent with the framework of the Philippine Strategy for Sustainable Development (PSSD), the government's main strategy for environmental protection, it promotes waste minimization as the most viable method of reducing pollution.

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[163] IEMP Paper distributed during the *"Forum on DENR Foreign Assisted and Special Projects (FASPS) Success Stories and Lessons Learned,"* at the HRD Management Facility, DENR Compound, on 15 August 1996.

The three components of the project are:

1) Pollution Reduction Initiatives

Under this, industrial pollution is assessed at the source and recycling opportunities for selected industries are identified. Support services are provided and industries are encouraged to change from the traditional end-of-pipe treatment to waste minimization through the implementation of process modification, recycling/reuse and waste exchange.

Industry subsectors were further ranked according to the potential risk they pose to public health. The risk ranking system is called the National/Regional Industry Prioritization Strategy (NRIPS). Three thousand three hundred industry records, or 27% of the DENR records, were reviewed and subjected to the NRIPS methodology. Based on the results, priorities and targets on compliance monitoring of industry subsectors were set. Volunteer firms for PMAs were recruited particularly those that belonged to subsectors with the greatest relative potential risk to environment and public health. The PMA is a periodic assessment of waste minimization opportunities that a firm can undertake to lessen waste generation, as well as improve process efficiency. A review of existing information provided by the plant is conducted, followed by on-site visit. This includes facility walk-through and data gathering. The PMA team, then, evaluates the information collected and prepares an appraisal report containing technical and feasibility analyses of waste management options recommended. Expected output includes a waste minimization program that can make operations more efficient and profitable.

An important assumption made is that firms would voluntarily participate in the project once they become aware of the benefits from implementing a waste minimization program.[164] The basis of such an assumption is that a substantial amount of potential savings can be derived from lower costs of production due to less raw materials used, less energy consumed, lower costs for waste treatment and disposal and lower treatment plant costs due to a lower volume of wastewater. At present, 134 firms have joined the PMA process. To encourage more firms to join, the DENR has issued DAO 11 series 1992, which provides incentives for volunteer firms, resulting in a 35% rate of success in recruitment. A summary of results is provided in Table 5.

Results clearly indicate the huge amount of savings generated by waste minimization schemes which translate into larger profits for industries.

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[164] IEMP Paper distributed during the *"Forum on DENR Foreign Assisted and Special Projects (FASPS) Success Stories and Lessons Learned,"* at the HRD Management Facility, DENR Compound, on 15 August 1996.

2) Capability-Building

Training workshops have been conducted for government and industry, as well as for NGOs and the academe, to expand local technical knowledge and capabilities on pollution management, monitoring and enforcement. In particular, the following representatives, totalling 2,500 officials and staff members, were invited to participate in the workshops:

- DENR staff members;
- PCOs;
- Environmental consultants;
- Members of the academe;
- LGUs;
- NGOs; and
- Other representatives from various government agencies.

Table 5. Summary Of PMA Benefits By Industry Subsector.[165]

INDUSTRY/SUBSECTOR	No. of PMA Firms	Percent Implementation	Capital Investments (PhP)	Annual Net Benefits (PhP)
Sugar Milling	13	100	48,131,000	85,983,900
Desiccated Coconut	9	100	2,319,000	25,003,800
Coconut Oil Milling	10	100	5,038,000	24,553,700
Tuna Canning	10	100	23,917,400	55,011,500
Seafood Processing	4	100	642,300	9,326,800
Pulp and Paper	7	100	25,594,400	11,259,000
Fruit & Vegetable Canning	4	100	4,701,100	1,368,800
Starch Manufacturing	4	100	3,150,600	218,805,000
Softdrink Bottling	2	100	5,037,200	5,959,300
Slaughtering	5	100	496,300	3,090,800
Distilled Spirits	3	100	2,344,500	8,049,700
Wood Products	3	100	15,565,300	38,467,600
Hog & Poultry Raising	13	100	21,194,000	21,362,900
Tanneries/Leather Tanning	2	100	673,800	274,000
Industrial Chemicals	6	100	495,600	3,296,400
Metal Finishing	8	100	6,028,000	10,221,000
Cement	2	100	381,948,500	276,190,000
Others	5	100	302,700	1,531,800
Total	**110**		**547,579,700**	**799,756,000**
Total, US$			**20,280,730**	**29,620,593**

[165] IEMP Paper...

Modules, all based on Philippine case studies, consisted of the following:

- Environmental Risk Assessment;
- Environmental Impact Assessment;
- Compliance Monitoring;
- Compliance Audit;
- Pollution Management Appraisal;
- Data Collection, Sampling and Sample Analysis; and
- Industry Seminars for Industry Associations.

3) Policy Studies

The IEMP has completed six policy studies that focus on increasing the availability of private sector financing for pollution control investments, as well as strengthening command-and-control policies to ensure flexible environmental regulations at the national, regional and local levels. The following is the list of policy studies done by the project:

1. "Proposed Standard for Characterization of Hazardous Wastes Under RA 6969". The study reviews hazardous waste management, particularly in the following areas: prioritizing guidelines, database, regulations on treatment, storage and disposal, enforcement policy and facility inspection process.

2. "Analysis of Current Regulatory Programs for Pollution Management." Recommendations were made on increasing sanctions and stricter enforcement, strengthening environmental programs according to their objectives, reaffirming the DENR's primacy in pollution management and developing financial responsibility.

3. "Environmental Risk Assessment and Pollution Reduction Planning Under the Philippine Environmental Impact Statement System." The EIS System was reviewed and consequent recommendations on unburdening and strengthening the EIS System were made.

4. "Market-Based Instruments to Promote Pollution Reduction in the Philippines." Analysis of the suitability and ranking of six MBIs were made:

    - financial incentives;
    - creating markets for waste;
    - user fees;
    - pollution charge;
    - risk and liability system; and
    - deposit-refund system.

5. "Financial Resources to Fund Environmental Investments." Recommendations were formulated on increasing environmental investments in high priority industries identified in the NRIPS study, including the promotion of environmental investments in pollution prevention and collective/combined treatment facilities. These included industry specific incentives/subsidies, technical assistance, reforms in the financial institutions and the development of a clean fund.

6. "Case Studies in Decentralized Environmental Management." The study contains strategies in clarifying policies (e.g., resolving conflicting statutes, political and administrative authorities and drafting of guidelines and manuals), strengthening program administration (e.g., the need for DENR management diagnostic and training programs), organizational development of LGUs and facilitating multi-sectoral participation for strengthening environmental protection and management through decentralization/devolution.

Aside from the three components of the study, the IEMP came out with various publications:

- Pollution Management Guidebooks on Pig Farming, Desiccated Coconut, Fish Canning Industries
- EIS System: Policies and Procedures
- Revised EIA Handbook
- Handbook on Financing Environmental Investments
- Quick Reference Guide on Financial Evaluation of Waste Minimization Projects
- Market-Based Instruments: Synopsis

The IEMP was able to provide technical assistance in drafting DAO 11, which contained the EIS Programmatic Compliance, and DAO 28 on importation of recyclable materials. It further drafted guidelines on the social acceptability component of the EIS System, including the implementing rules and regulations, and subjected these to a national dialogue.

Finally, it worked closely with the House Committee on Ecology in drafting House Bill No. 4, entitled "An Act Revising the Philippine Environmental Code." Key IEMP recommendations on air quality, water quality, waste management, fines and penalties, improving the EIS System and institutional arrangements were used in the Bill.

3. INTEGRATED ENVIRONMENTAL MANAGEMENT FOR SUSTAINABLE DEVELOPMENT PROGRAM (IEMSD)

The IEMSD is a three-year program jointly undertaken by the UNDP and the GOP, through the DENR and the NEDA. It was meant to fill the gap identified in the PSSD, particularly on the lack of attention towards preventive elements relative

to environment protection, as opposed to the emphasis on environmental rehabilitation. These preventive elements would include:

- integration of environmental considerations in decision-making;
- proper pricing of natural resources; and
- strengthening of citizen's participation and constituency-building for environmental policy advocacy.

Based on the above, the Program is divided into the following subprograms:

- ***Environment and Natural Resources Accounting.*** This will develop a framework and procedures for environment and natural resources accounting for integration into national planning, sectoral planning and environment and natural resources management. Outputs would be operative systems for environment and natural resources accounting, establishment of satellite ENR accounts for key sectors and pilot regional sector accounts for resources planning and management.

- ***Integration of Environment and Socio-economic Development Policies.*** This program will work towards merging environmental concerns into sectoral policy formulation and implementation. It will examine the use of economic instruments and incentives to supplement traditional command and control approaches, formulate a system of sustainable development indicators, develop methodologies for integrating environmental concerns in program and project evaluation, and examine cross-sectoral impacts of certain policies. Legislative measures and administrative actions affecting key policies which would lay the foundation for integration of sustainable development concerns into the planning and policy-making processes would be the final output of the subprogram.

- ***Environmental Impact Assessment Subprogram.*** This aims to strengthen the EIA system through extended use for policy assessment, design of an environmental technology assessment system, application of relevant environmental risk assessment techniques, operationalization of social acceptability criteria and promotion of public participation. This would further result in preventing programs and projects from producing hazardous impacts to the environment.

- ***Sustainable Development Models and Resource Management Schemes Subprogram.*** This attempts to provide working models for the various components of the program, as well as to document examples of successful sustainable development in local areas for replication in other areas.

- ***Environment and Natural Resources Database Subprogram.*** This aims to establish an integrated directory of Environment and Natural Resources information and an Executive Reporting System to support policy- and decision-

making for sustainable development. Outputs would include a computerized and publicly accessible directory of environment and natural resources databases, a pre-feasibility study for the creation of an Environmental Resource Center and an Executive Reporting System for more informed decision-making and policy analysis.

- ***Programme Management Support Subprogram.*** This includes the capability-building component which aims to enhance the capability of key government agencies, NGOs, POs and LGUs in environmental planning and management. Also under this subprogram is the environmental information, education and communication component which will develop IEC capacity for public participation on policy initiatives under PSSD, Agenda 21 and support activities under IEMSD. It is hoped that this will result in strengthened public and NGO participation in national and sectoral policy formulation and sustainable development planning and management.

There have been a number of activities conducted under the different subprograms. For the EIA subprogram, a study is being conducted in strengthening institutional capacity for EIA in the country. A workshop was held on 15 February where the following documents were reviewed:

- proposed criteria for EIS documents;
- proposed qualification criteria for individual EIA consultants; and
- proposed EIA trust fund.

Meanwhile, under the subprogram on integrating environment and socioeconomic policies, a seminar was held early this year which covered concepts, tools and principles in environmental economics and policy analysis. In particular, the training goals were:

- provide the participants with knowledge and skills on the basic concepts in environmental economics;
- provide the participants with the theoretical foundation required to better appreciate the opportunities in incorporating environmental considerations in the various stages of planning and policy-making; and
- enable the participants to understand the potential use of specific tools such as economic instruments and incentives to supplement traditional command and control approaches to environmental management.

For the environment and natural resources accounting, a workshop was held in May 1995 to find ways of incorporating environmental considerations into the present system of national accounts. Attempts are being made to adjust usual measures of economic output such as GDP, to provide better indicators of social welfare, by incorporating environmental concerns into the input and output

equations.[166] For instance, damages to health from air and water pollution should be reflected in the output portion of the accounts. On the other hand, there are certain positive effects caused by nature, such as aesthetic and recreational services, which should be reflected in the accounts as well. Data gaps still exist such as defining nature, both renewable and non-renewable resources, as capital assets, thus being subject to depreciation.[167]

Other efforts include the merging of the system of national accounts (SNA) with the system of integrated environmental and economic accounting (SEEA) for sustainable development. The SEEA is a *"framework that integrates the two aspects of people's environment - physical and economic aspects - and to some extent, the social aspect. It is a framework for putting together quantitative information for monitoring, analysis and evaluation purposes."* [168] The relationships of the elements in the framework need to be established in order for it to be useful for planners, economists and statisticians.

The SNA focuses on the economic aspect of output, while the SEEA is geared towards measuring the contribution of the environment. The SNA computes for the contribution of assets to production and income. However, it does not fully measure the value of extraction of natural assets, as well as the exact value of residuals "deposited" back to the environment. The SEEA attempts to extend the SNA to measure environmental stock and flow included in economic production and consumption but are not measured accordingly. Once the SEEA is set into place, the balance of stock and flow of all resources can be better achieved and sustainable development concerns can be addressed more properly.

Data requirements of the SEEA have to be met before the system can be implemented. The ENRAP[169] is intended to answer this need. Furthermore, a TOR for the formulation of sustainable development indicators has been drafted under the IEMSD. The framework to be developed under this subproject will endeavor to outline the various tests a project or program must pass, as well as the indicators to be used for the tests, to ensure sustainability.[170] The indicators will attempt to integrate the economic, social and environmental aspects of growth and development. Similar studies will be reviewed and those that can be used with the present database will be adopted.

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[166] Logarta, Jose. *"Environmental Accounting Objectives, Status and Needs."* Training Workshop on ENR Accounting. Olongapo City: May 1995.
[167] Logarta.
[168] Arboleda, Heidi. *"The System of National Accounts (SNA) and The System of Integrated Environmental and Economic Accounting (SEEA) For Sustainable Development."* Training Workshop on ENR Accounting. Olongapo City: May 1995.
[169] Environment and Natural Resources Accounting Project.
[170] IEMSD. *"Terms of Reference for the Formulation of Sustainable Development Indicators."* 1996.

B. PRIVATE SECTOR

Activities geared towards environmental protection and management are not solely the responsibility of government and the NGOs. Industry, particularly large companies that can afford to place investments with long-term maturities, have gradually been taking the initiative in doing their share in environmental rehabilitation programs. Admittedly, most efforts of industry are still done in compliance with environmental rules and regulations. Profitability of such investments is still a contentious issue, especially for industries that add a low profit margin on their output. Nevertheless, there have been efforts to prevent environmental degradation at the source. Industry associations are conscious of the need for pollution prevention and control investments. Some companies volunteered to be subjected to PMAs conducted by the government. However, this is more of the exception than the rule. Private foundations increase the number of environment-related projects they finance. But because of the very nature of their organization, sustainable finance mechanisms do not constitute a major part of their strategies and action plans. Some case studies are presented here for illustration purposes.

1. PRIVATE COMPANIES

a) San Miguel Corporation

San Miguel has its own environmental program. The company has recently increased its efforts in treatment and disposal of its wastes. Each SMC plant has a wastewater treatment facility provided by the company. These facilities are solely for the use of SMC plants. There are two plants located in Bacolod, Negros Occidental and Sta. Rosa, Laguna, that go beyond treating wastewater. The treated water is gathered into a pond used for tilapia breeding. The fish in turn is used by farmers in the neighboring areas either for their own consumption or for selling in the market. However, this does not add to the economic value of the facilities because this scheme is meant more for increasing SMC's goodwill with neighboring farmers rather than for direct economic purposes such as making the facilities profitable. Nevertheless, SMC practices take into account pollution prevention by segregating wastes, recycling those that can be used (such as solid wastes for fertilizer, spent grain for animal feeds, etc.) and treating those that will be discharged to the environment.

The canning factory of SMC is currently doing research on recycling aluminum cans of SMC products. There are plans of putting up a recycling plant that will cater not only to cans of SMC products, but also to other companies as well. Furthermore, the recycled products will be sold to other packaging corporations aside from SMC. Considering the advanced technology existing in

other countries, the growth of a new industry in waste recycling in the country is not far-fetched.

In promoting their environment protection efforts, the company issues an Environmental Update, a brochure that contains a complete list of their environmental programs, whether in-house or in conjunction with other organizations.

One MBI that SMC is implementing is the deposit-refund system, specifically for their softdrink glasses and plastic bottles. A deposit is made for every bottle purchased, which can be redeemed by returning the used bottle. These are then recycled, hence contribute to minimizing waste dumped into the environment.

b) Philippine Investment Management Consultants, Inc. (PHINMA)

PHINMA is a group of 40 private corporations involved in various industries such as cement, steel and other building materials, paper and packaging, energy, trading and property development. With respect to the cement industry, the company occupies a dominant position. It has six plants accounting for approximately 50% of domestic production. It also has interests in the financial sector, being part owner of Asian Bank and having significant interests in Far East Bank & Trust Co., one of the leading banks in the country.

The company takes environmental considerations in their production operations seriously. They have purchased equipment that minimizes air pollution from cement plants. Wastewater treatment facilities are also present in some of the plants, which recycle most wastewater generated therefrom. The target is for the facilities to recycle 100% of their wastewater.

PHINMA admits that some of these projects have negative returns on investment, or at the most, do not yield more than 5% ROIs. In other words, the environmental program of PHINMA does not yield lower costs for the company, or conversely, higher profits. This may further mean that environmental costs are not yet internalized within the pricing system of the company. Management justifies its existence, though, by recognizing these projects as necessary components of manufacturing plants and of the business in general. The problem with this set-up is its non-sustainability and, for as long as these environmental projects dip into the company's profits, there will be no incentive for them to continue on a long term basis.

PHINMA factories plan (at least those in the cement, pulp & paper and packaging industries) to get accreditation with corresponding ISO classifications. This would entail that environmental concerns, at least with respect to pollution mitigation, will be incorporated in the production system. This in turn will lead to the reflection of environmental costs in the price of the products, creating a system of prices that reflect the true economic costs of producing them.

c) Philippine Geothermal, Inc.

PGI is a subsidiary of UNOCAL, an American firm that sources and supplies energy worldwide. It has been operating in the country since the 1970s. It introduced the first two geothermal plants in the Philippines and continues to operate them up to now. In sourcing geothermal energy, the main threat to the environment is the potential air pollution the plants generate. The PCOs in each location are tasked to ensure that hydrosulphur levels emitted by plants are well within the limits set by the DENR. Wastewater is also generated in the process. However, water pollution is prevented by injecting waste thousands of feet below the ground. This process would normally be prohibitive in cost. But because the technology of sourcing geothermal energy requires the use of such equipment, PGI can implement such a process in getting rid of its wastewater. Chemical wastes are first treated in an abandoned well (PGI ensures that one exists near the power plant) and then injected into the ground using the machinery used to source geothermal energy 10,000 feet below ground level. Because of the depth, surface water is not disturbed since waterways are usually 200 feet or less below the ground. Furthermore, there is no chemical or biological process that takes place between waterways and the injected waste, hence, the waste do not damage the ecosystems above.

d) Pilipinas Shell Corporation

Case Study on the Use of Financial Incentives

The company has a Marine Environment Protection Department that ensures compliance with marine pollution-related laws and regulations of the country. Part of its program for the year was to acquire oil spill equipment in the event of emergencies in transporting products to and from its refineries. The purchase was done jointly with Caltex Philippines for its refineries in Batangas. Because Shell is less than 60% Filipino-owned, the purchase had to be subcontracted to a company that was at least 60% Filipino-owned. Trans-Pacific, the company contracted by Shell to do the purchase, availed of the BOI Incentive[171] of duty-free importation of waste control facilities, provided the methods were new in the Philippines (as was the case with the oil spill equipment).

For the refineries in the Visayas region, the three oil companies jointly purchased oil spill equipment for emergencies.

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[171] The Board of Investments (BOI) has an annual Investment Priorities Plan which contains fiscal incentives for private companies to undertake investments in the country. The Plan contains a list of specific economic activities wherein investments are to be encouraged. Executive Order No. 226 contains the set of incentives used by the BOI.

Partnerships with the Government

An MOA[172] was entered into by the three oil companies. Essentially, the MOA provides for joint efforts in protecting the marine environment. Marine safety standards shall be used against tankers, port facilities, equipment and support in making decisions in transporting their cargo. With respect to their oil spill equipment, the oil companies have agreed to make the Waterborne Industry Oil Spill Equipment (WISE) available upon request for oil spill emergencies, whether or not the spill was caused by any of the three corporations. Expenses incurred in the use of WISE shall be borne by the party accountable for the oil spill.

The MOA further states that the oil companies shall cooperate closely with the government in upgrading their oil spill equipment, as well as providing training for personnel to operate the equipment. In line with this, Shell has developed an orientation course on tankers employed by the company. It aims to target PCG personnel because most of them were not oriented on the technical composition of a tanker. This activity has yet to be conducted on a regular basis since PCG has not expressed interest in institutionalizing the training course despite the fact that Shell is conducting the training for free.

Study on the Creation of the National Oil Spill Prevention and Response Commission (NOSPARC)

One of the main concerns of Shell, with respect to the marine environment, is the proposal to create the National Oil Spill Prevention and Response Commission (NOSPARC) within the government. A study on its creation was commissioned by the Executive Secretary's Office in Malacañang. The rationale for the research paper was based on several observations on the marine environment in the Philippines:

- the lack of focus on the issue of oil spill prevention and response;
- no prompt response system is in place;
- no rehabilitation measures are available in case of oil spills;
- no on-site equipment is available for most parts of the country;
- no contingency plan has been drafted by the appropriate agencies; and
- lack of enforcement of marine pollution control laws and regulations.

Oil spills are not new to the country. Table 6 provides a breakdown of the number of oil spills that have occurred in the country for the past twenty years. Most causes of these incidents have been identified as:

[172] Memorandum of Agreement on Marine Environmental Protection signed by Caltex Philippines, Petron Corporation and Pilipinas Shell Petroleum Corporation, on 22 November 1995 at Makati City.

- human error;
- defective equipment
- substandard tankers/barges;
- lack of training;
- poor communications; and
- weather.

Except for the last point, all the other reasons are controllable. Hence, programs can be developed and undertaken to minimize the damage to the marine environment due to human activities that can cause oil spills.

Table 6. Oil Spill Incidents in the Philippines (1975 - 1995).

AREAS AFFECTED	NO. OF OIL SPILLS
MANILA	40
BATANGAS	22
BATAAN	7
ILOILO/NEGROS	6
PALAWAN	1
OIL EXPLORATION AREAS	0
OTHER AREAS	3
WHOLE COUNTRY	79

It is only very recently that the private sector initiated the development of response systems. The PCG is primarily responsible for protecting the marine environment against this problem. However, it has been remiss in this area of responsibility, mainly due to the following reasons:

- lack of budget;
- confusion due to overlapping of functions with other government agencies;
- lack of ships and aircraft, particularly for monitoring purposes;
- insufficient equipment;
- high manpower turnover; and
- limited training of personnel.

Nevertheless, PCG is still deemed as the most appropriate agency to deal with this problem because of the following advantages:

- huge source of manpower;
- existence of a nationwide organization, considering that the PCG falls under the Philippine Navy;
- strong regional relationship; and

- it has the respect of the maritime industry, relative to other government agencies.

The main thrusts of the program of the proposed NOSPARC consists of the following:

a) Prevention

The first step in marine protection is preventing accidents that might damage the environment. The following strategies compose the first part of the program:

- enforcement of rules and regulations;
- encouragement of public vigilance and involvement;
- requiring vessel safety standards for vessels that will be hired for cargo transport;
- requiring port standards for choosing a loading and unloading area;
- availability of navigational aids;
- practice of safety management;
- provision of education and exercises; and
- drafting of safety rules and regulations.

Relative to vessel safety standards, pollution prevention is considered as a main category in assessing the ship's compliance with standards. Other categories include:

- documents and certificates;
- safety management;
- manning level and certification;
- lifesaving equipment;
- firefighting equipment;
- cargo/ballast systems;
- mooring equipment;
- bridge equipment and procedures;
- communications equipment;
- engine room and steering gear;
- loadline items; and
- general appearance.

b) Cure

Once accidents occur, the quickness of response of pollutant becomes crucial to minimize the damage caused by the accident. This second step has the following components:

- crisis management;
- providing a variety of options, such as monitoring, protecting/deflecting, dispersion, containment/recovery and cleanup;
- ability to respond properly, which means having the proper equipment, manpower and materials; and
- support.

c) Rehabilitation/Restoration

The long term treatment of the damaged environment would necessitate the following:

- bioremediation;
- segmentation;
- repopulation of the damaged body of water;
- surveillance/periodic testing; and
- waste disposal.

d) Compensation

There are a number of issues on compensation. At present, reimbursement for oil spills in the country are provided by two voluntary organizations: (1) the Tankowners' Voluntary Agreement on Liabilities on Oil Pollution (TOVALOP), composed of shipowners and tanker owners; and (2) the Contract Regarding Supplement Towards Liabilities for cargo owners (CRISTAL), composed of cargo owners. The TOVALOP sources its funds from Protection & Indemnity (P & I) Clubs, while CRISTAL gets its funding from funds contributed by cargo owners themselves.

Both funds will expire in February 1997. Hence, it is imperative that the country ratifies the CLC[173] and IOPC.[174] Only when the conventions are ratified can shipowners and cargo owners avail of the IOPC Fund, which has a total amount of US$180M. Otherwise, future oil spills will be too expensive to clean up, and damage to the marine environment will be too costly.

A concrete step that the oil companies have taken in compliance with marine protection regulations is the purchase of oil spill gears and equipment, specifically the Tier II Response Facility named WISE. Three systems have been purchased:

- Batangas WISE, jointly owned by Shell and Caltex, costing PhP22 M;
- Limay WISE, owned by Petron, costing PhP12 M; and
- Visayas WISE, owned by the three companies, costing PhP11 M.

The marine environment protection (MEP) program of NOSPARC was formulated in response to the strong clamor for mitigating the negative effects of

[173] Civil Liability Convention
[174] International Oil Pollution Compensation Fund Convention

human activity on the marine environment. A significant portion of the program involves proper enforcement of regulatory measures, which falls under the purview of the public sector. Likewise, a number of strategies pertain to increased vigilance and initiative from the private sector. Hence, partnerships between public and private sectors become even more emphasized.

With this in mind, the oil companies formulated their own short term proposals necessary for the success of the program:

- Increase the budget support to PCG;
- Beef up MEP equipment in sensitive areas in the country;
- Ensure compliance of Exploration Companies to have their own Tier I and II equipment;
- Enhance training activities on MEP;
- Extend technical consultancy services to PCG by the oil/tanker industry; and
- Ensure compliance to reasonable cash bond requirements from polluter to cover cleanup and environmental damage costs prior to the release of the vessel.

In the long term, they have proposed that the following measures be implemented:

- Integrate all maritime functions into one Cabinet level body
- Add the following functions to the Cabinet level body:
  - Marine Environmental Protection;
  - Port Safety Standards;
  - Oil Spill Damage and Compensation; and
  - Crisis Response Centers.

At this point, a legislative bill creating a separate government agency for maritime affairs is still pending in the Senate. The creation of NOSPARC has recently been shelved. Had it passed as an executive order, the Commission would have had a Cabinet level stature, but will integrate less government agencies than the body proposed in the Senate. Table 7 contains a comparison of the two proposals:

Table 7. Comparison of NOSPRAC and Proposed Senate Bill.

	NOSPARC	SENATE BILL
JURISDICTION	PCG, MARINA, DENR's Marine Environment	PMMA, PCG, PPA, MARINA, BFA, NAMRIA's C/G Functions
POLICY DECLARATION	Protection from Oil Pollution	Marine Environmental Protection & Development of Marine Wealth
FUNCTIONS	Prevention, Cure, Rehabilitation & Compensation on Oil Pollution	Marine Environmental Protection & Development of Aquatic Resources
ORGANIZATION	Cabinet Level	Cabinet Level

e) Nestle Philippines

Nestle was used earlier as an example of how MBI recycling is being implemented in the country. Aside from the presence of wastewater treatment facilities in its factories and solid waste disposal system in its coffee production centers, the company has designated PCOs in each of its facilities. These officers' main function is to constantly monitor all pollution prevention activities in their factories. They further undergo regular training to keep abreast on latest issues and technological developments. The company is also an active member of PBE, the biggest NGO representing industry in the country that undertakes environmental management programs.

2. INDUSTRY ASSOCIATIONS

a) Philippine Sugar Millers' Association (PSMA)

The Organization

The PSMA is a non-profit organization composed of 22 sugar mills operating in the country. It believes in the principle that the environment is an industry-wide concern, hence it works towards strategies that are industry-wide in nature. It serves as a forum for discussion of problems related to sugar industry as well as a venue for developing closer relationships among key players therein. It is a loose, voluntary organization that coordinates closely with the Sugar Regulatory Administration (SRA) and the DENR on matters concerning pollution. In each mill, there is an assigned PCO who takes charge of environmental concerns of the mill. This is in compliance with paragraph 3

of LOI No. 588 as amended under DENR AO No. 26 series of 1991. These PCOs make up the Sugar Industry Environment Committee, which is coordinated by PSMA and SRA.

Pollution in the Sugar Mill Industry

Water pollution is a major concern of the industry as most sugar mills were established close to bodies of water because of the large volume of water required in sugar manufacturing. Furthermore, the present condition of sugar mills could not allow the industry to comply with pollution control standards set by the government, hence the mills were producing pollution levels beyond the set limits. The decline in sugar demand during the early 70s resulted in environmental concerns becoming less of a priority, as sugar mills could not expand and modernize their facilities, much more install pollution abatement facilities.

Pollution Abatement Program of Sugar Mills

Two years ago, PCOs came up with a self-regulatory abatement program called the "Sugar Mill Environment and Pollution Abatement and Control Program" which was submitted to the DENR. Under the IEMP of the DENR, pollution management appraisals were conducted in 15 sugar mills. From these appraisals, a set of guidelines has been developed for PCOs in preparing their respective pollution control programs, which will be submitted to their respective DENR-RO.

In this connection, a basic model for factory effluent handling and treatment has been designed for sugar mills. The design is a detailed description of the various types of wastewater from the mills, what kind of treatment is suggested and how the effluents should be handled. If the design is used, the following components are hoped to be achieved:

- waste minimization;
- clean production techniques;
- plain good housekeeping;
- waste utilization;
- recycling; and
- segregation of various factory streams.

Through this design, PCOs aims to reduce pollution by as much as 80% in two years. The design necessitates the installation of waste treatment facilities and modernizing old production facilities. With this, a gradual implementation of DENR standards can be realized. At this point, the mills claim that they cannot immediately comply with the standards because of their present conditions. Furthermore, they cannot just suspend operations because of their obligations to other players in the industry, e.g. cane growers.

Another major aspect of the program is the plan to establish monitoring laboratories in each factory for wastewater analysis of pH, COD, BOD, TSS, oil and grease. The laboratories will be self-sustaining, as fees will be collected for

each sample taken and analyzed. However, the infrastructure has not been built because PSMA is waiting for a grant from the government to cover for initial capital outlay expenses. The BOT scheme can be employed to fast track the establishment of the laboratories. There seems to be a lack of appreciation of this scheme due to lack of information on the BOT process itself.

Noteworthy of the program is the emphasis on pollution prevention, not just pollution control. This naturally will result in lower costs for the company, as well as to the environment. The PSMA is aware of this and to propagate their efforts, it plans to develop training materials using the experiences of mills that are successful in implementing the program, so that other mills can learn therefrom and eventually do their share in protecting the environment.

Other Efforts in Pollution Abatement

A significant achievement of the PSMA is the inclusion of the sugar industry in the IPP of the BOI. This means that they can avail of financial incentives, such as income tax holidays, tax exemptions and tax credits, depending on the status of the firm and its geographical location. Furthermore, investments in environmental support are granted financial incentives through IPP as long as the firm is registered with the BOI. Because of this, a significant amount of investments has been made in installing more efficient equipment and machinery through IPP, thereby reducing pollution generated in the process.

In conducting monitoring and evaluation, the SRA, together with the Sugar Industry Environment Committee, plan to set up an audit team that would include environmental considerations in their audit. This regulatory process should be put in place immediately, considering that the sugar industry has always been considered to be part of the DENR's list of top 12 industrial pollutants in all geographical regions that have sugar mills in the area.

The industry recognizes that some PCOs still need technical assistance. Not all of those in position are capable of functioning effectively, and the Program states this factually. However, no concrete measures are indicated to address the problem. It is probably left to the initiative of the mills to send these PCOs for further training, particularly to courses accredited by the DENR.

With respect to training, a more concrete proposal by the sugar industry itself is the sponsorship of seminars by the Philippine Sugar Technology (PHILSUTECH)[175] on PMAs for all PCOs. The seminars aim to establish effective and workable waste minimization programs and waste utilization schemes applicable to each milling district's particular situation.

[175] Philippine Sugar Technology

b) Philippine Electroplaters' Association (PEA)

The PEA is composed of around 40 electroplaters nationwide (there are more than 100 companies registered in the electroplating industry). It is the only organization in the electroplating industry recognized by the government. The industry is composed mainly of small-size companies, save around five factories that are considered medium scale.

Electroplating is considered as one of the major sources of water pollution. The lack of wastewater treatment facilities can be traced to the fact that most companies in the industry are small scale in nature. Only five companies are big enough to afford setting up their own treatment plants. Of these five, only two companies have waste treatment facilities.

One of these is the Fastbrite Industrial Plating Corporation (FIPC). The FIPC was issued a CDO by the DENR in the late 1980s because of water pollution problems. This led the company to purchase wastewater treatment facilities. Since then, no other company has been caught, despite the lack of treatment facilities in most of them.[176] The FIPC has offered to sponsor seminars in providing technical assistance. No one has taken them up on this, since these companies could not afford to purchase the facilities anyway. The FIPC even offered to treat other companies' wastes for a fee, given the excess capacity of the treatment plant. But because of lack of political will on the part of the government in enforcing environmental protection laws, most of these companies would rather not include this activity on their production expenses. This is due to the additional costs of segregating wastes and hauling them to the FIPC's plant, aside from the treatment costs.

A WB study was conducted on the electroplating industry in the country, and the major conclusion was the highly pollutive potential of the industry. One of the recommendations of the study was for the bank to approve a loan for a common WWT facility for electroplaters located in Quezon City, which has the biggest population of electroplating companies in the country. However, the bank could not secure the necessary counterpart from the DENR, causing the proposal to be shelved. No follow-up activities are done by the companies themselves, since there is no perceived urgent need for them to do so.

The LBP has also promoted the Build-Operate-Lease scheme for a WWT facility for the industry. But because there is no demand for such a project, there have been no takers in the private sector.

Currently, the PEA attends meetings on pollution abatement sponsored by the government. Some members are wary of continuing PEA's participation in government activities for fear that their operations might be subjected to scrutiny by the DENR. At the moment, the DENR has not increased its efforts in

[176] Interview conducted with Mr. Armand Balahadja of the PEA.

monitoring pollution generated by the industry. Companies would like to keep it that way.

3. PRIVATE FOUNDATIONS

a) La Tondeña Foundation

La Tondeña Distillery is a subsidiary of SMC. It has a wastewater treatment facility, the operation and maintenance of which is subcontracted to another private corporation.

The company has a foundation involved in environmental protection projects. One of its undertakings is a coastal resource management project in Ragay, Quezon. Five contiguous municipalities and 15 barangays comprise the geographical coverage. The program aims to provide assistance in seeking alternative livelihood opportunities for fisherfolk in the area. It likewise involves reforestation of mangrove areas in the target region, as well as installation of artificial coral reefs to revive marine life destroyed by overfishing and damaging fishing methods. It sources its funds from the Department of Agriculture (DA) and is being managed by the Philippine Business for Social Progress (PBSP). There are plans of continuing the implementation of the project on a long term basis. However, there are no clear-cut financial provisions for such. The project monitoring team from La Tondeña is hoping for more grants to sustain the project, but there are no guarantees that such a scheme can ensure the success of the project. In terms of manpower, the fisherfolk associations in the area will continue managing the programs initiated by the PBSP.

The Foundation does not avail of government incentives except the use of the program as a tax shield for the company's income tax statement.

b) Ayala Foundation

The Ayala Foundation, Inc. (AFI), a private non-profit organization of the Ayala Group of Companies, is involved in a number of waste management programs, mostly within the Makati area. Other areas covered are those where Ayala companies operate.

One of these programs is the Barangay Integrated Development Program which provides funding and technical assistance to communities in the field of environmental enhancement. A trainer's training program was conducted on Zero Waste Management, specifically on the financial viability of recycling, for 18 barangay leaders in the city. Recycling Technologies, Inc., a recycling company located in Makati offered a seminar on recycling of denim wastes into paper. The trainer's training session resulted in the establishment of a successful project recycling scrap denim materials into paper by the Foundation, RTI, Levi's Strauss Philippines and two barangays in Makati. Levi's provides the scrap denim materials, RTI recycles these into paper, the

communities produce paper bags and other paper products out of the recycled paper and Levi's uses the paper products for packaging their products.

A successful waste collection program has been introduced in San Lorenzo Village, Makati. A total of 718 households generate several types of wet and dry waste materials. Wastes are collected by a ten-wheeler truck and dumped into a landfill. Occasionally, wastes are sold to scavengers. The estimated amount of waste generated is 15,000 gallons daily. In late 1995, AFI, together with the Barangay Chairperson of San Lorenzo Village, implemented a waste management system in the area. The objectives of the program are:

- to minimize, if not eliminate, waste generated in San Lorenzo Village;
- to promote environmental awareness;
- to ensure waste management sustainability;
- to serve as a model for a sustainable waste management scheme;
- to enhance and maintain linkage with groups and communities that will be involved in the project; and
- to establish a basis for future studies for the development and efficiency in its own waste management system as well as others in general.[177]

Waste segregation is done at the households. To ensure proper segregation, wastes of those who do not segregate properly are not collected, i.e. separating the wet from the dry, and the latter separated according to type, such as glass/bottles, paper, plastics, assorted materials and yard waste. Thirty–five gallon containers are provided for each type of waste and collection for each type is done weekly, except for wet waste which is collected daily. Junkshops in neighboring barangays are the beneficiaries of recyclable materials.[178]

The LGU of Makati City is tasked to provide the collection trucks, payment of which is sourced from residents' taxes.

Aside from waste management programs, AFI is also involved in conservation and biodiversity projects. A major undertaking of the Ayala family, along with the Soriano family and other local personalities, is initiating a tie-up with the World Wildlife Fund (WWF) through the creation of a non-stock non-profit organization called Kabang Kalikasan ng Pilipinas (KKP), or Fund for Nature of the Philippines. Its principal mission is to preserve biodiversity in the country.[179]

KKP was formed in answer to the study conducted by an NGO which revealed that although there are many NGOs in the country, there is still a need to create an organization which will:

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[177] Ayala Foundation, Inc. "*Color Coding the Waste Traffic*," in MAKATI. Makati City: 1996.
[178] Ayala Foundation, Inc. *"Color Coding..."*
[179] KKP. *"New WWF Associate in the Philippines,"* in Biota Filipina. Quezon City: 1996.

- focus sharply on biodiversity conservation, specifically marine biodiversity;
- build a strong financially supportive constituency in the country composed of the business sector; and
- maintain strong links with the WWF family for technical support and access to funding sources abroad.

In the long term, KKP intends to become an independent science and community-based organization with established field projects on marine environment. The programs being implemented by KKP are:

1) ***Marine and Small Islands Ecosystems Conservation Program.*** The program's goal is to assist government agencies and other groups in protecting and rehabilitating marine areas of high biological importance. Its components are:

   - Ecological and Environmental Studies of Baguan Island Marine Turtle Sanctuary;
   - Information Campaign and Consensus Building for Tubbataha Marine Park;
   - Dugong Research and Conservation in Busuanga, Palawan; and
   - Conservation Program for Whale Sharks and Manta Rays.

2) ***Conservation Science and Research Extension Program.*** This aims to provide training for government and NGOs on conservation science, including park management, ecological inventories and the use of Geographic Information Systems (GIS) and Global Positioning System (GPS). Projects under this include:

   - GIS Training;
   - Wildlife Inventory Training;
   - Manager's Experiential Course on Nature; and
   - Training on Species and Habitat Mapping.

3) ***Community-Based Resource Management and Entrepreneurship Program.*** The goal of this program is to assist communities in the sustainable utilization of natural resources by providing resource-based livelihood systems and developing necessary skills in entrepreneurship. To achieve this, the following projects will be undertaken:

   - Protecting Biodiversity of Mt. Guiting Guiting through the Development of Sustainable Livelihood Enterprise;
   - Community-Based Conservation and Enterprise Program for Indigenous Communities in Palawan;
   - Community-Based Whale Watching Enterprise; and
   - A Sustainable Management, Protection and Development Program for El Nido, Palawan.

4) ***Public Information and Education Program.*** Public awareness of environmental issues and concerns, as well as environmental education using formal and informal channels, are the goals of this program. Activities included herein are:

- Publication of the Monthly Newsletter, Biota Filipina;
- Production of Radio and TV Spots; and
- Publication of Posters on Protected Areas and Endangered Species of the Philippines.

The program is still in the initial stage of implementation. The first activities scheduled are training on Wildlife Inventory in October 1996 and on Biodiversity Conservation for Managers and Technical Staff of Protected Areas in January 1997.

c) Pilipinas Shell Foundation

Oil Sludge Treatment Using Hydrocarbon-Utilizing Microorganisms

The Shell Foundation is a unique organization relative to other foundations, in the sense that it is more involved in research primarily for the benefit of the mother company, Pilipinas Shell Corporation. The practice of other foundations is to get involved in community-based programs, particularly in areas where they operate as a sign of goodwill.

In their effort to contribute to waste management and minimization efforts of Shell Corp., the Shell Foundation is currently conducting an experiment on microbial treatment of oil sludge. The process makes use of microorganisms (hydrocarbon-utilizing microbial inoculants or HMI) that transform various compounds and degrades waste from petroleum refineries. A mixture of 14 different microorganisms produce liquid inoculants which are diluted in water and mixed with oily sludge. Chicken manure and sawdust are added to the mixture to increase nutrient level which helps stimulate the inoculated HMI. Water is further added to the mixture to allow the oil to float, thus making it easier for microbial action to take place.

The experiment revealed that compared with untreated oil sludge, the degradation rate of HMI-treated sludge was much more efficient. It took 120 days for the sludge to decompose by 54.2% using HMI, while untreated sludge decomposed by a mere 34%. Overall, the total time for sludge treatment, particularly for hydrocarbon degradation, was reduced by 80%.[180]

[180] Abaoag, Angelito and Efren Bautista. Biodegradation of Oil Sludge Using Microorganisms. Makati, Metro Manila: 1996.

The sludge is treated in an enclosed pit, thus removing the need for a huge landfarming area. The heavy metals that settle into the bottom of the pit can easily be extracted, and contamination of groundwater is prevented.[181]

Finally, part of the process involves the conversion of hydrocarbons into organic matter and high end oil products. These can be used to produce consumable products that can be sold, thus, eliminating the amount of waste to be disposed. The experiment is currently conducting tests on the safety of these products, particularly on their negative effects on plants, animals and humans.[182]

Other similar experiments have been conducted, mostly in Japan and Europe. According to the literature survey done by Mr. Efren Bautista of the Foundation, these experiments could not come up with efficient results due to:

- the limited number of microbes used; and
- aeration was not part of the process

The Foundation claims to have been able to use up to 14 microbes in the treatment, making the process more efficient than other experiments on the same process. Moreover, they have allegedly discovered a process of injecting oxygen into the sludge, even with the presence of water therein. The microbes are, thus, kept alive and efficient.

In disposing oil wastes, the present system used worldwide is land farming, whereby sludge is first stored for weathering. After some of the oil is degraded, the sludge is spread in landfills within refinery grounds. The land is then ploughed several times for two to three years. No other process for oil waste treatment is being practised except land farming.

Once perfected, the treatment can be used for all wastes of oil refineries, or all wastes that are oil-based. The estimated cost for decomposition is PhP800 per ton of waste, or PhP3,000 for the whole process including hauling and transport costs. This figure is still below the present costs of storing and treating oil sludge, which is currently at PhP4,000 per ton.[183]

At this point, the experiment is in its second phase, where sampling is done in refineries. However, samples are still in relatively small amounts. The third phase will involve bigger amounts of sludge. The whole experiment is targeted for completion by the end of 1997.

4. NGOs IN THE ENVIRONMENT SECTOR

This section contains a brief description of eight major NGOs involved in environment protection and conservation projects. Most of them are involved in projects dealing directly with water pollution, while others such as the NIPAS deal

[181] Abaoag and Bautista. The Microbiological Treatment of Oily Sludge. Makati, Metro Manila: 3 June 1996.
[182] Abaoag and Bautista.
[183] Interview conducted with Mr. Efren Bautista of Pilipinas Shell Foundation, Inc.

with other environmental concerns. Nevertheless, they were included in the report since their experience in implementing innovative mechanisms might prove useful later on. This section contains various goals, objectives, strategies and major programs and projects of the organizations. The first three NGOs are funding mechanisms that support programs and projects implemented by other NGOs in the sector. The next four NGOs are directly involved in undertaking programs and projects dealing with waste management and conservation activities in identified protected areas. The last one is a network of NGOs involved in a study on the role of NGOs in development. Of particular interest is the portion on NGO funding mechanisms currently operating in the country.

a) Foundation for the Philippine Environment (FPE)

The FPE is an NGO funding mechanism established "to contribute, encourage, assist and provide technical, managerial and financial support to NGOs, people's organizations, communities and others for environment protection, natural resource conservation and management and sustainable development".[184] It is considered as one of the largest grant-making institutions in the country.

With the signing of the Foreign Assistance Act by the US Congress, the Natural Resources Management Program (NRMP) worth $125 million emerged as one of the areas of support from the US assistance package, with USAID as the implementing arm. The DENR saw this as a source for the endowment fund they were working for. Eventually, they convinced USAID to grant a portion of that for the endowment fund. The money would be invested in market-rate interest-bearing instruments and the interest earned will be used to fund environmental programs and projects initiated by NGOs.

In 1993, the FPE entered into an agreement with the DOF, DENR and USAID to manage a fund called FPE Environmental Endowment worth $22 million. This was sourced from the NRMP which included a Natural Resources Protection Component to "support activities of NGOs to conserve biological diversity and enhance sustainable natural resources management."[185] Other sources of the fund are a $200,000 donation from the Bank of Tokyo, specifically to be used for brown ecology projects and $400,000 from the MacArthur Foundation for community forestry projects.

The fund initially came from the proceeds of a debt-for-nature swap involving the Central Bank of the Philippines, DENR, DOF and USAID through the WWF. It is meant to be a permanent source of funding for NGOs, POs and community groups engaged in environmental protection and natural resource

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[184] Memorandum of Understanding Among the Government of the Republic of the Philippines, the United States Agency for International Development and the Foundation for the Philippine Environment for the Establishment of an Environmental Endowment.
[185] Ibid.

management activities in the country. It is invested in special series Central Bank bills earning interest at market rates. The interest earned is used to finance programs and projects deemed suitable by FPE for the fund's rationale.

The fund can be used for the following purposes:

- conservation of Philippine biological diversity, both for terrestrial and aquatic flora and fauna;
- technical skills and capability building for organizations to become more responsive and to take more initiative in environmental protection and management;
- community-based resource management projects which have a direct impact on environmental protection and sustainable use of natural resources; and
- administrative purposes, providing the amount does not exceed 20% of the investment income.

Three funding mechanisms are in place:

- Resource Grants Program

This includes the following projects:

1. Site-focused projects which include a rapid site assessment in a biodiversity center, usually between six months and one year in implementation; and
2. Assistance to NGOs and POs in initiating activities in view of preparing for a larger project with longer-term implementation period.

Seventy percent of FPE grants are allocated for these projects.

- Action Grants Fund, primarily for training and institution-building

Five percent of the budget is for action grants amounting to PhP100,000 and below each. This aims to complement other funds for projects which generate deeper and wider information, education and action of NGOs, POs and communities on biodiversity conservation, e.g. publications, audio-visual presentations, concert and theater productions as advocacy for biodiversity conservation, action research, fora, symposia, seminars, training and workshops.

- Proactive Programs

The concept behind this is *"to build foundations of support by engaging in required activities now to get into bigger programs later on."*[186] The objectives of the Program include:

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[186]Ibid.

1. focusing FPE support on critical issues in the environmental field; and
2. developing the capability of POs and NGOs to make informed decisions on key issues such as social acceptability and rights over use and access to natural resources.

Twenty-five percent of the budget is allocated for this component, which include capability-building programs for NGOs and POs, establishing and testing a biodiversity conservation information system and support for the NGO-PO counterpart secretariat for the PCSD. Also included are grants for legal defense and litigation, networking for environmentally critical areas and radio broadcasting for responsive protection of these critical areas.

Private, non-profit and service-oriented organizations, holding a two-year legal registration with the SEC, the DOLE or CDA are eligible for FPE funding. NGOs can be given one grant for full implementation project proposals. They cannot avail of a second grant until the first approved project is completed.

Since its inception, FPE has provided grants to 175 NGOs and POs for environmental programs and projects. In addition to 11 priority sites chosen in 1994, 10 sites have been added for biodiversity conservation and sustainable development programs, based on the criteria of conservation value, level of threat to biodiversity, research and educational value of ecosystem and biogeographic and archipelagic distribution. The target is to provide financial resources by 1998 to 30 sites considered as environmentally critical.

After three years of operation, FPE has realized that its current thrust has not addressed the livelihood component. It has been established that people living in environmentally critical areas are the best human resources for solving, or at least arresting, environmental problems. But for as long as people remain poor, environmental awareness and biodiversity conservation will continue to be secondary issues for them. Because of this, FPE has realized that programs and projects that offer alternative means of livelihood, particularly those that have a positive impact on sustainable development, should be undertaken. One mechanism being considered is the use of FPE money as guarantee or collateral for loans by community-based organizations, specifically for livelihood purposes. It will be some sort of a credit cooperative for NGOs involved in these activities.

At present, FPE is finalizing two MOAs with the DENR. One is on community-based forestry management program, a joint project with the MacArthur Foundation. The second is on the coordination of efforts of communities affected by EIA conducted in various parts of the country for specific government programs and projects.

At the moment, a major program funded by the FPE is the Maqueda Bay Project located in Eastern Samar. The project is geared towards providing training

and enhancing capabilities in the area for integrated coastal resource management and coming up with sustainable livelihood activities. FPE is involved in the sustainable development component of the project. However, it recognizes the fact that such activities cannot be undertaken unless the resource base is replenished. At this point, they are still trying to avoid a collapse of the ecosystems in the area, especially in the fisheries sector. According to the program's estimates, there is a big potential for the fish stock to recover from its presently depleted state. Thus, they are concentrating efforts on developing a comprehensive mechanism for disallowing trawlers to continue hauling huge amounts of fish from the sea. Furthermore, they are trying to come up with alternative sources of livelihood for the people, especially those living in the coastal areas. An increase in fish production will directly increase incomes of the people in the area.

b) Philippines-Canada Human Resource Development (PCHRD)

The PCHRD is a CIDA-funded program that seeks to develop institutional capability of Philippine and Canadian NGO and PO communities to alleviate poverty through human resource development, partnership and advocacy. Its goals are to:

- facilitate the process of broadening and strengthening people's initiatives, networks and coalitions within and across the two countries by providing human resource development support to a broad range of NGOs, POs and networks;
- formulate development models, create and promote a just, participatory and sustainable development;
- build partnerships between and among the different sectors within and across the Philippines and Canada characterized by mutuality, broadness, sustainability and capability; and
- develop new models of cooperation with governments, international agencies and other sectors.

Nine local NGO networks collaborate with over 70 Canadian NGOs in managing the program. CIDA's NGO support program provides the multi-year budget worth CDN$15 million. Most of the projects involve training, education institution-building, advocacy, networking, communication and coordination. These projects focus on themes such as gender and development, environment protection, agrarian reform and human rights. The project has three components: the Philippine, Canadian and Joint Proactive Programs.

As of 1995, PCHRD had funded more than 800 projects throughout the Philippines and Canada. Most of these focused on enhancing NGO capacities in organizing, delivery of basic services, advocacy and establishment of cooperative linkages among NGOs and POs in the Philippines and in Canada.

PCHRD tended to be reactive rather than programmatic with respect to project funding. Some projects funded were the same in nature, and although beneficiaries were different, they could have been more efficient if these projects were standardized and institutionalized. In project development and appraisal considerations, most of the proponents were unaware of PCHRD goals and objectives, hence could not directly relate their objectives with those of the funding organization. Furthermore, a lot of these projects lacked provisions for sustainability and continuity, hence, were short-lived.

The lessons learned from PCHRD experience will, hopefully, guide future efforts of CIDA, as well as other funding institutions, in making their programs and projects in human resource development more effective and efficient.

c) Philippine Development Assistance Programme (PDAP)

The PDAP is a network of NGOs that builds partnerships among and between Filipino and Canadian NGOs. The principles held by the organization are commitment to national and social transformation, lasting peace and justice and environmentally-sustainable development. It addresses poverty, inequity and structural injustice through the provision of resources. Funds are generated in part from CIDA and in part by a core group of Philippine NGOs and a consortium of NGOs in Canada.

There are three partnership models that Philippine and Canadian NGOs can get into:

- Initial linkages

  This partnership consists of a Philippine NGO project supported for the first time by a Canadian NGO. The maximum grant for this partnership is PhP250,000 per year for a maximum of two years.

- Participatory Partnerships

  This partnership refers to a Philippine NGO supported for the second time (and onwards) by a Canadian NGO. A project is considered second time if it consists of the same activities as the first project but with a different set of beneficiaries (i.e. replication), or if it involves the same beneficiaries but the activities are different from the first set (i.e. expansion). The funding limit for this type is PhP600,000 per year for a maximum of three years.

- Cooperative Partnerships

  This involves a partnership among any of the following:

1. between one Philippine NGO supported by two or more Canadian NGOs; and
2. joint projects developed by two or more Philippine NGOs supported by one Canadian NGO, a consortium of NGOs or on an individual basis with a Canadian NGO supporting one particular component of the joint project.

Any non-profit Philippine NGO legally registered and possesses a bank account in the name of the organization, whether primary (i.e. community-based) or secondary (i.e. intermediate ones providing assistance to primary NGOs), can avail of PDAP assistance provided they target any of these groups:

1. The rural disadvantaged, e.g. tenant farmers, landless rural workers and sub-tenants, small fisherfolk and cultural communities;
2. The urban disadvantaged, e.g. blue collar workers, squatters and slum dwellers and street children; and
3. Special sectors, e.g. women of low-income families, out-of-school youth, homeless street children, the aged, the handicapped/disabled, victims of human rights violations and single-parent families.

The types of project supported by PDAP are:

1. Agriculture and aquaculture: provision of production inputs, post-harvest processing and marketing and resource regeneration;
2. Non-agricultural income generation: cooperative small enterprise and social credit and microenterprise; and
3. Provision of social services: care of street children, education and functional literacy, community organizing and training, primary health care, provision of clean water and others.

Priority is given to smaller NGOs with limited access to other funding sources. However, an established NGO can still avail of PDAP funding if it possesses a good track record of delivering development services to the poor. All NGOs should provide 25% of the total project cost as counterpart funds, whether in cash, goods or services.

d) Green Forum (GF)

The GF was formed in 1989 in response to the Philippine Assistance Plan (PAP) implemented in the country by the US. The PAP was supposed to identify programs and projects that would accelerate development in the country. The GF, on the other hand, was to develop a niche in environment- and sustainable development-related activities.

It is a coalition of NGOs and POs with 93 affiliated organizations. Regional mobilization centers exist all over the country, tackling various issues that are most

urgent in the region, e.g. logging, marine conservation, community-based resource management, etc. After the Earth Summit in Rio de Janeiro in January 1992, the Philippines was among the first countries to set up the PCSD which would handle the commitments made therein. The GF heads the NGO counterpart in the Council.

The GF is involved in a number of advocacy programs, such as support for total commercial log ban, participation in the Philippine Network on Climate Change, vice-chairmanship in the Sagip-Pasig movement and the spearheading of Oplan Basura, an urban-based program which aims to come up with various alternatives to waste management. The latter is an independent initiative undertaken by NGOs without any link with the government's Presidential Task Force on Solid Wastes. In relation to the Sagip-Pasig project, the GF is developing a monitoring mechanism for the flow of toxic materials in the river.

According to the GF, it has tried to establish linkages with the DILG, particularly for advocacy campaigns that would involve the LGUs. However, the DILG refuses to make commitments for the LGUs and advises the GF to deal directly with the LGUs. The same is true with the Metro Manila Development Authority (MMDA) which could have easily represented all the LGUs in the Metro Manila area. However, there have been continuing problems on the mandate of the MMDA and the government has yet to clearly define the role of the MMDA. Hence, the GF deals with the units on an individual basis, as there is no body that can directly represent them in multi-sectoral programs. This sometimes serves as hindrance to some activities in which the GF would want to get involved. For instance, the DILG wanted the GF to do a Master Plan for Metro Manila. However, because the DILG or the MMDA could not commit for all the LGUs in the area, nobody could commit any counterpart funds and institutional support for the program.

The GF is planning to set up a Sustainable Development Academy which will address the capability-building needs of the LGUs, NGOs, POs and other players in the communities, particularly on environmental management and protection issues. The Academy aims to develop a network among key players in the area of sustainable development, including rural areas where urban-based organizations and government units are hardly present. The GF qualifies this by adding that no new infrastructure will be set up for the Academy, like new buildings to house its activities. It will, however, develop modules and training kits to be used by the "faculty" of the Academy. Eventually, the GF wants the Academy institutionalized within the DENR. However, since there is no waste management expert housed in the Department, this would be difficult to achieve. The GF is working towards establishing linkages with the LGA, the body tasked to handle training activities for the LGUs especially in the implementation of the LGC of 1991. At present, this is done only on a per project basis, as both institutions are incapable of making nation-wide and comprehensive commitments. Besides, there

is a huge disparity in the capabilities of the LGUs in the country and this has to be taken into account when training them for activities.

Other tie-ups with the LGUs include the designing of solid waste management programs for their constituents. The GF provides technical and administrative assistance to the communities, while the LGUs provide the fund. In Bulacan, eight out of the 24 municipalities have prepared their own programs. The target is for all municipalities to have their own program within the year, which would not necessarily be independent of the neighboring areas. In Naga, there is an ongoing project on solid waste management composed of three phases: the first would tackle markets, the second would be aimed at residential areas and the third would be for commercial establishments. Presently, Naga is producing organic fertilizer from wastes, which is used for domestic purposes. A report documenting the milestones of the program is being written and is expected to be available by the middle of 1996.

Aside from the Academy, the GF is also hosting the Asia Pacific 2000 (AP2000), a UNDP project on urban environment and management. It aims to provide financial, technical and administrative support to NGOs/POs in addressing urban environment concerns. AP2000 is part of the Urban Management Programme for Asia and the Pacific (UMPAP) which translates Agenda 21 into effective programs to curtail drastic deterioration of the urban environment and increasing urban poverty in six countries in the region.

A recently concluded tie-up with the private sector involves a project with Seven-Eleven (7-11), a convenience store with branches nationwide. A campaign was organized for Barangay Malinis, wherein all barangays with a 7-11 store would organize cleanup activities every so often. Financial incentives are given to winning barangays. The program has claimed a 100% success in sustaining cleanliness in these areas.

Future thrusts include programs on packaging and eco-labeling of consumer goods in the country. Furthermore, they have tied up with some PBE members such as Shell who wants a tie-up on a project in recycling motor oil and Nestle who wants the GF to assist in setting up an environment-friendly food processing plant in Bulacan. The GF would prepare the social acceptability component of the project which, in turn, would input directly in meeting environmental standards set by the government.

e) Philippine Business for the Environment (PBE)

The PBE is a non-stock, non-profit, non-government organization founded to assist business and industry to play a significant role in environmental protection. It was formed in January 1992 after the Earth Summit in Rio de Janeiro. A number of leading businessmen operating in the Philippines started to look at the environment as a legitimate business concern. Along with this, there was a growing demand

among businessmen for greater information on the environment, specifically the damage caused by industries. In a sense, some of them were feeling culpable for the negative media hype on the role of business in environmental degradation. As the demand for information increased, the PBE decided to tap foreign embassies and foreign funding agencies for data as well as funds for programs that would address the information needs of the business community.

The USAID is one agency that provided a grant. It provided funds for the implementation of IWEP that is to be implemented by the PBE in collaboration with the EMB. "The IWEP is a trade information facility which industries may tap to exchange information on available wastes generated for recycling or reuse for other processes."[187] It is an ongoing project which started on 1 March 1994 and will run until 1996. Waste minimization is the main goal of the IWEP. Although it was started in 1987 by the EMB under the auspices of the International Development and Research Centre of Canada, the program could not be sustained due to lack of funds, both from GOP and from the program's clients.

The PBE was tasked to revive the program and come up with sustainable finance schemes to ensure continuity of the project. It publishes Business and Environment which contains relevant articles on environmental protection and a list of waste products which aims to match the suppliers of these waste materials with the users thereof. Aside from the direct advantages of the list in contributing to recycling efforts, there is cost reduction in waste minimization expenses. Waste treatment becomes less expensive if there is demand for such wastes. Corollary to that, users lower their costs as the prices of their raw materials are decreased.

As cited earlier, listing in the magazine is free at the moment. However, the PBE plans to charge a listing fee to companies later on. According to the organization, revenue projections from this activity exceeds the costs incurred in the publication of the magazine. It is further assumed that it will still turn out cheaper for these companies to pay for the advertisement of their wastes rather than spending a lot on waste treatment and disposal systems. The magazine itself will have a subscription fee adding to the projected revenues of the organization. The numerical targets of the project are as follows:

- at least 400 listings per month;
- at least 2,000 paying subscribers of the magazine;
- at least 8 successful waste exchanges between companies per month; and
- at least 10 pages of paid advertisement per issue.

The IWEP does not have a monitoring component at the moment. In the future, PBE hopes to document successful cases of waste exchanges and publish these in the magazine. Together with the network of supply and demand for industrial waste generated by the IWEP project, these cases can serve as an impetus

[187] Attachment II of the Memorandum of Agreement between the USAID and PBE.

for new industries to develop, specifically those that convert wastes into useful products, thereby creating further employment opportunities and industrial growth in the Philippines.

Aside from the magazine, information generated from IWEP will be disseminated through link-up with other network systems such as the Martlink, an electronic information network of the Foundation for Resource Linkage and Development (FRLD). This network has nodes in other major urban areas of the country. IWEP also plans to hook up with other electronic bulletin boards in the country such as PSDN and NSO so more users can have access to its database.

The PBE is also involved in the establishment of an environmental information center for business and industry within PBE's premises. Initial funding for the set-up of the library came from the International Labor Organization (ILO). The PBE hopes to sustain the upkeeping and updating of the library by charging fees for its use. Related to this, it is involved in a joint project with the Centre for Clean Technology and Environmental Management (CTEM), a regional US-AEP funded project that links up five countries in Asia through the Internet and provides relevant environmental data for the business sector. These two organizations share information to avoid duplication of efforts in updating their respective databases. They further offer courses on the use of the Internet to augment their revenue-generating efforts.

The PBE and PBSP are involved in joint activities like: the launching of the Paper Exchange wherein participating companies donate their waste paper for recycling; and the formulation of a Business Plan for the rehabilitation of Pasig River. In connection with this, PBE was appointed as member of the Presidential Task Force for the Rehabilitation of the Pasig River.

f) Haribon

HARIBON is an NGO involved in sustainable development activities in the country. It believes in addressing poverty as a means to achieve sustainable development and recognizes the "need for the management of natural resources to be community-based, socially equitable and scientifically-sound".[188] It aims to promote and undertake community-based resource management strategies in specific sites, conduct scientific and socio-economic researches on natural ecosystems for the benefit of Filipino communities and raise national consciousness on sustainable development to promote a constituency for environmental issues and membership in the organization.

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[188] The Haribon Foundation for the Conservation of Natural Resources, Inc. Save Our Only Home Earth. Haribon Foundation: Manila.

The organization is involved in four programs, namely:

- Community-based resource management program which aims to empower communities to undertake their own development through education, organization and applied research and cooperative development;
- Science and research development program which aims to systematize Philippine natural resources information;
- Membership and chapter development program which aims to mobilize, organize and educate the various sectors in society on environmental conservation; and
- Environmental defense-legal program which offers environmental para-legal training, legal advice, research and representation to members of indigenous communities, community organizations and individuals who become victims of environmental law violations.[189]

Haribon has undertaken a substantial number of projects since its inception in 1985. Currently, it is focused on conservation activities, as well as in the establishment of the legal program for environmental cases. It sources its funds from both local sources and grants from international conservation groups.

g) NGOs for Integrated Protected Areas (NIPA)

The NIPA is a consortium of 18 NGOs formed on 12 December 1993 to address the NGO component of RA No. 7586, *"An Act Providing for the Establishment and Management of National Integrated Protected Areas System, defining its scope and coverage, and for other Purposes"* known as the NIPAS Act of 1992. The organization is the main implementor of the programs and projects and it interacts with the government and international institutions, specifically the Global Environmental Facility (GEF), and its trustee, the International Bank for Reconstruction and Development (IBRD), in implementing the NIPAS Act. The NIPA is currently involved in the implementation of the Conservation of Priority Protected Areas Project (CPPAP).

The main objectives of NIPA consist of establishing a partnership among the LGUs, the DENR, the NGOs/POs and the indigenous cultural communities (ICC) for the management and planning of identified protected areas in their locality. Secondly, it provides technical assistance and helps in community development in the protected sites. Lastly, it gives financial support to operationalize the Protected Areas Management Boards (PAMBs) and livelihood developments.

CPPAP is an ongoing project envisioned to last for seven years. It is funded by a $20 million grant from the GEF with a counterpart of $3 million from the DENR. The fund is divided as follows: $10 million is allotted for resource and

[189] Ibid.

socio-economic management, i.e. for livelihood programs and projects; $7.13 million will be used for technical assistance; and finally, $2.87 will be for project site development.

The resource management component consists of establishing operations of PAMBs and the host NGOs, i.e. the NGOs based in the site, as well as resource management operations (i.e. mapping, delineation, etc.) and restoring degraded areas within the protected areas.

The socio-economic management component consists of training of protected area staff, educational outreach to the local community, surveying of farm lots and ancestral domain, census and registration of occupants, documentation of tenure claims, community organizing and preparation and implementation of livelihood projects.

The TA component consists of preparing a monitoring and evaluation manual, sub-project guidelines, Retail Financing Institution Manual. It also provides specialists on various fields, does project monitoring and evaluation, assists the PAMB through the host NGOs, provides secretariat functions to NPPSC and reports regularly to the WB.

It is recommended that the PAMB be allowed to collect fees and come up with guidelines for the collection and utilization thereof. In determining the fee schedule, NIPA contracted the REECs to come up with guidelines in doing resource valuation in the areas concerned. The REECs will provide technical assistance in training host NGOs to do the valuation themselves. Once the fees have been determined, the PAMB can come up with a management plan which will detail the various uses of the resources in the area that will be acceptable to all stakeholders. Furthermore, the fees will be used for sustaining the protection and conservation activities in the area.

The identified sites for protection include:

- Batanes protected landscapes and seascapes;
- Northern Sierra Madre Nature Park;
- Subic-Bataan Protected Area;
- Apo Reef Marine Nature Park;
- Mount Canlaon Nature Park;
- Turtle Island Marine Nature Park;
- Mount Apo Nature Park;
- Mount Katanglad Nature Park;
- Siargao Wildlife Sanctuary; and
- Agusan Marsh Wildlife Sanctuary.

The first five identified sites have come up with their integrated annual workplans. They contain the areas of concern of each key stakeholder, i.e. the community, local NGOs, LGUs in the area and the regional and provincial offices of the executive branch of the government. These workplans are done in the context of the whole planning process of the country, hence consistency is ensured with the plans of higher geographical bodies. They are congruous with the socio-economic MTPDP as well as with the National Physical Framework Plan.

The legal requirement is for these ten sites to be declared by law as protected areas, including the boundaries delineating them from non-protected areas. The target is for the bills to be filed by 1997, hence this requires a lot of lobby work on the part of the NIPA. Eventually, they will work for the inclusion of the protection of these areas in the annual government budget, i.e. it will become a regular public function.

Other efforts of the NIPA include a 3-year MOA with the Philippine Airlines (PAL) which deals with information dissemination and documentation of conservation efforts for identified protected areas. PAL will assist in community organizing and livelihood development efforts, but output for the first year will focus on documenting the sites through the production of coffee table books, videotapes, and promotional activities, e.g. photo contests. The second year will involve conferences among the different PAMBs for sharing of experiences, problems encountered and lessons learned therefrom. The final year will focus on an international conference on protected areas management and will culminate in awarding ceremonies for the best PAMB in the country.

The NIPA is also entering into a partnership with the Biodiversity Conservation Network (BCN) for holding a media management conference to be held within the year. The conference will deal with negotiations on financing of site-based projects.

h) Coalition for the Development of NGO Networks (CODE-NGO)

The CODE-NGO is a coalition of NGO networks involved in development programs and projects.

The CODE has commissioned a study assessing the role of NGOs in development, particularly in the light of current efforts of the government to decentralize social and economic development activities. The rationale is based on the fact that NGOs have been in existence in the country for the last 20 years, getting involved in long term development activities normally done by the government, such as in disaster relief and rehabilitation, provision of basic social services, infrastructure, forestry, coastal management, credit, agricultural extension and other community-based projects and programs.

At this point, NGOs have already been institutionalized, especially in the field of social development. This has created a whole new dimension in approaching issues and concerns in this field, creating new mechanisms and venues for more efficient delivery of services. NGOs can now access ODA funds directly through the establishment of NGO funding mechanisms. With the passage of the LGC of 1991, NGOs can directly deal with LGUs, eliminating extra layers in the bureaucracy that hinder speedy implementation of programs and projects.

The first stage of the study involves the measure of effectiveness, or the lack thereof, of NGO availment of ODA funds. Furthermore, it attempts to identify allocation patterns of NGO-directed ODA funds, as well as models of institutional mechanisms existing among key players in ODA availment. The study will concentrate on existing NGO funding mechanisms operating in the country. A recent publication released by the CODE and supported by the Transnational Institute of Holland contains the experiences of these funding mechanisms in managing large amounts of funds from international donor agencies, including their relative advantages over the government. It became a basis for these donors to seek out similar arrangements in releasing ODA funds to other developing countries. This next study aims to go further and document positive and negative experiences, including lessons learned in taking on this catalytic role of disbursing ODA funds to identify mechanisms in improving their efficiency and effectiveness.

Notes

Preliminary data suggest that there is a growing interest in the NGO community to address environment concerns on an extensive and sustainable basis. Poverty is often identified as the root cause of activities that harm the environment. Hence, projects are often community-based, and they provide livelihood alternatives that increase income beneficiaries, thus, encouraging substitution of alternatives for activities that would otherwise cause environmental degradation.

The business sector has shown increased interest in saving the environment, or, at least, minimizing environmental damage caused by industrial pollution and waste. The PBE was instrumental in advocacy activities that led to institutionalizing environment-friendly processes in some companies. Nine members that have installed environment-friendly procedures in their factories will be interviewed and their success stories will be documented in the next report.

In the financing aspect, all the projects rely on schemes that provide funds on a regular basis, or at least include provisions that would lead towards self-sustenance, ensuring the continuity of the activity in the medium term. Most of them initially sourced funding from ODA sources. Nevertheless, the trend these days is for multilateral institutions to provide financial incentives for environment-related projects, encouraging more NGOs to participate in the environment sector.

5. SMALL-SCALE BUSINESS OPPORTUNITIES IN WASTE MANAGEMENT

The waste management problem of Metro Manila gave rise to new enterprises that ventured into using garbage as raw materials and transforming these into sellable products.

A paper exchange project is being implemented in Makati. The Makati Business Club, the Bankers Association of the Philippines, the PBSP and the Makati NGO Network entered into an agreement with the Transnational Paper Corporation which uses waste paper as a raw material for the production of recycled paper. Transnational collects waste paper from 107 firms enrolled in the program, donates PhP1.00 per kilogram it collects to MBC's environmental and information drive and supplies participating companies with their paper requirements at a 5% discount. Not only do these companies save money on their paper requirements, they actually lower their costs in managing their wastes and do so in an environment-friendly manner.

AFI pioneered the implementation of the Barangay Integrated Development Program which provides funding and technical assistance to communities in the field of environmental enhancement. A trainer's training session on the financial viability of recycling was held, which resulted in the establishment of a successful project recycling scrap denim materials into paper by the Foundation, RTI, Levi's Strauss Philippines and two barangays in Makati. Levi's provides the scrap denim materials, RTI recycles these into paper, the communities produce paper bags and other paper products out of the recycled paper and Levi's uses the paper products for packaging their products.

Another success story is the case of Sta. Maria, Bulacan. The LGU was experiencing waste disposal problems. Landfills were becoming too expensive to construct and operate. To solve this problem, a composting project was undertaken by an entrepreneur who set up the Assorted Waste Administration and Recycling Enterprises (AWARE) in the area. The LGU provided a 10-year interest free loan for the project site. It had a 50% cost recovery record, with 40% of the organic waste from the public market utilized in the composting scheme. Simultaneous with these efforts was the information, education and communication campaign launched by the Sta. Maria Economic Development Foundation to inform the residents about proper waste segregation. AWARE processes 4 tons of waste into 2.5 to 3 tons of organic fertilizer a day and sells this to farmers. At this point, demand for fertilizer has exceeded the supply and the company is looking at the possibility of expanding its sources of waste to cover the entire municipality. Not only did the company start earning money, but the LGU, despite its interest free loan, was able to save money in garbage collection and disposal.

Because of the success story of Sta. Maria, Bulacan, the DENR formulated the Ecological Waste Management (EWM), its banner project for 1996. It aims to implement one waste management scheme per province by the end of the year and

one per DENR district by the end of 1997. The signing of the MOA that will put EWM into effect in each locality is ongoing. The DENR provided trainings on proper EWM to interested local units.

A bigger investment opportunity is in the transport, treatment and disposal of all kinds of waste. Presently, most waste in the country is dealt with by the LGUs and other public sector organizations. However, there are private companies that are already entering the market, such as Erthco and Integrated Waste Management. The French company SOGEA is assessing sites for a potential healthcare waste incinerator in Metro Manila.[190] Most of these are still charging high rates, therefore not yet creating a huge impact on waste management.

Nevertheless, this is a positive step in ensuring the presence of waste management facilities. The public sector cannot be relied upon to provide funds for the construction of these facilities, simply because of other priority projects of other priority sectors. One way to ensure private sector interest is to guarantee a certain margin of profit for waste disposal facilities. This scheme is being employed in the power sector, whereby power projects pursued using the BOT scheme were ensured of a minimum level of energy demand, so as to ensure the steady income stream of the private companies. This same scheme can be applied to companies interested in pursuing waste management and disposal facilities.

C. Local Government Units' (LGUs) Environment Programs

1. LGU Waste Management Programs

A rich source of information of success stories of the LGUs implementing programs and projects that include sustainable financing component is the Galing Pook Awards, or Gantimpalang Pang-Lingkod Pook Awards, a program sponsored by the Asian Institute of Management that aims to promote excellence in local governance. It encourages the LGUs to submit their respective local programs for review, particularly those that promote socio-economic growth as made possible by the LGC. Nominations are made by the LGUs by choosing projects that best illustrate how they used provisions in the Code to allow them to undertake projects that have positive socio-economic and/or environmental impacts on the communities they serve. Efficiency and effectiveness of service delivery is also a criteria. The third consideration is people empowerment, or the extent to which the program facilitates access and control of resources by the local people. Included in this category are capability-building activities and active participation of the people in local government decision-making, implementation and evaluation. Finally, sustainability of the program is assessed with respect to how the project is sustained beyond the term of the present administration and its potential to get the support of

[190] Entec Europe Ltd. Toxic and Hazardous Waste Management Project. Manila: January 1996.

the successor, to ensure that benefits derived from the program continue to be enjoyed by the beneficiaries.

There have been numerous case studies of LGU programs in the marine environment sector, such as reforestation of mangroves, coastal management, solid waste management programs and estuary cleanup activities. However, very few have actually incorporated sustainable financing as a major component of the project. Two successful cases are cited in this report.

a) Sta. Maria, Bulacan Waste Processing and Recycling Plant

With respect to introduction of sustainable financing mechanisms, an interesting case study is that of Sta. Maria, Bulacan. The LGU set up a waste processing and recycling plant in Sta. Maria, Bulacan. The objectives of the program are:

- to improve the social and material living conditions of the community; and
- to conserve, protect and rehabilitate its environment.

The main approach used was the integration of three waste management technologies - reduction, recovery and proper disposal - by setting up a waste processing and recycling plant. Not only did the program solve the municipality's waste disposal problem, but it provided income opportunities for the community as well. Biodegradable wastes are processed as organic fertilizer while non-biodegradable wastes are sold to recyclers and manufacturers that use the waste as raw materials. Sustainability of the project is ensured because operations of the program are funded using the proceeds of the plant from sale of organic fertilizer and recyclable waste.

The project has had positive economic impacts on the community in terms of building the population's income raising capabilities. Training offered extend beyond operation of waste recycling plant, where residents are given opportunities to increase their incomes through income-generating projects. Capability-building activities are conducted periodically on recycling and use of biodegradable wastes, as well as on how to use compost in mushroom production, recycling plastic wastes to flower pots, making papier mache out of wastes and scrap paper and applying organic fertilizer to plants.

In terms of the amount of waste managed, the current rate of recovery is 6 tons daily. The objective is to raise this figure to 12 tons by the end of 1996. This will have a multiplier effect, where more income will be generated, not only by direct hiring of personnel to run the program, but in terms of increased sales of recycled waste as well. At this point, demand for organic fertilizer is hardly met by the amount generated by the recycling plant.

Crucial to the success of the program is the collaboration among various stakeholders in the community: the residents themselves, the private sector, the LGUs and NGOs operating in the area. NGOs and private individuals provided not only technical skills and training, but were also fundamental in bridging the financial requirements of the project.

Because of the success of the project, the DENR has adopted Sta. Maria's waste management program and, through MEIP, has been advocating for other LGUs to follow this example. Replication has started in some parts of the country. The target of the DENR is the presence of at least one waste management program in each province by the end of 1996 and adoption by all LGUs by the end of 1997.

b) Olongapo Solid Waste Management Program

A similar example is the solid waste disposal program of Olongapo City, Pampanga. Although the project is not comprehensive enough to include waste management and recycling, it implements sustainable financing mechanisms that make it viable to last through several administrations.

The Integrated Garbage Collection Scheme of Olongapo City, as the program is officially called, makes use of recyclable plastic bags for garbage collection (as opposed to huge drums that are difficult to carry, especially during the rainy season) and payment of garbage fees by residents and commercial establishments in the area. The bags are sealed, thus improving the health situation of the city, and are easy to carry and dump into the landfill. Furthermore, there are five garbage trucks with a public address system that service the entire city. Residential wastes are collected twice a week, while those from commercial establishments are collected daily. The PA system reminds residents of collection schedule and publicly advertises the benefits of cleanliness and proper waste disposal.

The project is sustained through the collection of garbage fees. Residents have different rates relative to commercial establishments. Citation tickets are issued to areas that are found unclean by sanitary inspectors. This includes the river system which, before the project, was a dumping site of solid waste. Initially, there was resistance to the project, particularly in paying garbage collection fees. There was a strong sentiment that garbage collection is a regular function of government, thus should be covered by taxes. However, the LGU was able to convince the public of the importance of sustainability of the program and was able to get its support eventually. The project currently averages PhP500,000 monthly in fees, or roughly PhP6 million annually. A separate department within the LGU oversees the program.

The project can stand improvement in the area of recycling. At the time of submission of the program to the AIM Galing Pook Awards, official scavengers were designated by the City government to go through the garbage and pick

whatever recyclable material they found useful. There are plans of installing a proper recycling program which will include waste separation at the household level.

The success of this program has been replicated in other parts of the country, and has been advertised in print and broadcast media during the past few years.

2. BATANGAS BAY DEMONSTRATION PROJECT (BBDP)

The trends in economic development of CALABARZON,[191] the country's fastest growing industrial corridor, show a fast pace towards transformation of the area into a non-agricultural site, causing an in-migration pattern in the province. An eventual rise in the standard of living of the people is seen in the near future. As population density increases, coastal areas are increasingly being encroached upon. Concomitant with this is the increased demand on improved infrastructure facilities and services. As industrialization takes its course, the importance of waste management becomes more pronounced.

In recognition of this, a strategic environmental management plan (SEMP) has been formulated for the Batangas Bay Region.[192] The SEMP envisions the Bay area as a model for *"economic development characterized by a well-planned, multiple but non-conflicting, mix of land and water uses..."*[193] In effect, it hopes to achieve a balance between economic development and environmental management and protection, particularly for the coastal environment of the province. The guiding principles of the plan include:

1. ***Integrated coastal management (ICM).*** This ensures that probable adverse impacts of economic development are minimized and costs to society in the long term are reduced. Thus, economic benefits are maximized and integrity of the coastal ecosystems are maintained.
2. ***Sustainable development.*** Key elements for the success of the plan are incorporated, such as ecological stability, economic feasibility, social acceptability and political viability.
3. ***Proper resource valuation.*** This will allow LGUs to come up with proper resource pricing schemes, as well as to properly assess environmental damages and accompanying fines and fees.
4. ***Precautionary principle.*** Because of the uncertainty involved in assessing environmental damages, potential or otherwise, the SEMP advocates for decision-makers to take a conservative stance in drafting policies relative to the

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[191] Cavite-Laguna-Batangas-Rizal-Quezon Growth Corridor.

[192] The formulation of the SEMP was coordinated by the Provincial Government of Batangas. Technical and financial support was provided by the GEF/UNDP/IMO Regional Programme on the Prevention and Management of Marine Pollution in the East Asian Seas.

[193] Environment and Natural Resources Office of the Provincial Government of Batangas. Strategic Environmental Management Plan for the Batangas Bay Region. Quezon City: 1996.

environment. As information becomes available, these policies may be relaxed, thereby allowing for greater efficiency and maximum development of the area.

5. ***Sustainable financing.*** In recognition of limited government funds for environmental management, the plan calls for development of innovative financing schemes that can take advantage of the opportunities available to the LGUs under the LGC. The LGUs can earmark revenues from the use of MBIs to set up trust funds for environmental programs for the Bay area.
6. ***Use of market-based instruments.*** In connection with the principle of sustainable financing, the plan adopts specific recommendations from the OECD paper on Economic Instruments for Environmental Protection, particularly through the use of the following:

MARKET-BASED INSTRUMENTS

Redefining Property Rights	Tradable emission permits; liability insurance legislation
Tax/Charge Systems	Effluent charges, user charges, product charges, and administrative charges
Subsidies	Financial aid in installing new technology; subsidies to environmental research and development expenditure
Deposit-Refund Systems	Combines charges and subsidies so as to provide incentives to return pollutants for recycling

On the other hand, command and control measures shall still be enforced, particularly the following measures:

REGULATIONS

Standards	Effluent, ambient and technology standards
Resource Use Quotas	Emission quotas, harvesting quotas; by allowing quotas to be traded among market agents, the quota system would be transformed into a system of tradable permits

7. ***Institutional partnerships.*** Partnerships among LGUs, national government agencies, industry, NGOs, volunteer groups and the community residing in the area are deemed to be crucial in pursuit of the SEMP's vision.

Key components of the plan include:

- Legal and institutional mechanisms;
- Integrated policy and planning systems;
- Integrated management systems and technical interventions;
- Management and technical skills improvement;
- Information base improvement; and
- Sustainable financing development.

The specific programs consist of:

- Integrated waste management;
- Water pollution abatement;
- Conservation of special ecosystems particularly the remaining mangroves and coral reefs;
- Coastal tourism development;
- Development of alternative livelihood activities; and
- Improvement of municipal fishery.

With regard to integrated waste management program, voluntary agreements among various stakeholders in the Bay area have been signed last 7 September 1996. The agreements focused on the management of waste generated from both land- and sea-based sources in Batangas Bay. Translating these agreements into concrete action plans is being undertaken.

Finally, on sustainable financing development, the plan lists various activities to be undertaken by ENRO:

- Identification of potential BOT projects;
- Study of privatization schemes and identification of LGU assets/functions that can be privatized;
- Assessment of trust fund mechanisms for application of MBIs; and
- Establishment of linkages with other programs.

3. CAGAYAN DE ORO - ILIGAN INDUSTRIAL CORRIDOR (CIC)

Experiences of the community, NGOs, private sector and LGUs in the CIC is a good example of how pollution control and management can be undertaken through a community-based approach, i.e. with the involvement of all stakeholders, including the private sector.

Demographic Characteristics

The CIC is a coastal zone located in Northern Mindanao. The key resources in the area include fisheries, recreational beaches, coral reefs and swamplands. The region has relied heavily on these resources for food and economic livelihood.[194] Regarding its role in overall national development, Northern Mindanao, particularly the CIC Corridor, is one of the 12 Regional Industrial Centers (RICs) in the country identified as alternative locations for industries outside Metro Manila.

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[194] IEMP. Policy Study # 9: Case Studies in Decentralized Environmental Management. Manila: 31 August 1994.

One of the major multinational corporations in the country, Del Monte Philippines, Inc., has been operating in Cagayan de Oro (CDO) for several decades now. Furthermore, there are hundreds of business establishments found within fifty kilometers from CDO.[195] An advantage of the area is the presence of two bays - Macalajar Bay and Phangil Bay which serve as ideal transshipment points for goods and industrial equipment in and out of the city. Most of these establishments are light industries: mining; metallurgy; canning; cement production; garment manufacturing; food processing; and small shipbuilding. Unfortunately, there are only two companies with pollution control equipment operating: the wastewater treatment plant of Del Monte; and the treatment facility of Kawasaki.

Environmental Issues of CIC

The environmental problems of the area are identified as:[196]

- Illegal logging which causes excessive siltation;
- Small-scale mining, resulting in contamination of surface water bodies;
- Illegal fishing, particularly the use of dynamite and cyanide to catch fish, destroying coral formation, sea beds and shellfish;
- Industrial wastewater from industries discharging treated and untreated wastes;
- Domestic waste; the whole of Region X has no effective sewerage and sanitation system;
- Agricultural runoffs composed mostly of manure and other agricultural waste products; and
- Reclamation of land primarily for housing and industrial purposes, causing changes in shore types and coastal hydrography leading to erosion and depletion of marine resources.

Regulatory Institutions

As mentioned earlier, the DENR–ROs are poorly equipped for monitoring pollution. Laboratory facilities are inadequate. Fortunately, Xavier University has a laboratory where water quality can be examined.[197] Literature on pollution management is also wanting. Hence, pollution managers are not updated with the latest technology available in the market. The Environment Management Service (EMS) of the DENR is the unit in-charge of environmental management activities in the region. The problem encountered by the division is the lack of appropriate budget allocations for monitoring purposes. In fact, it received only 2.5% of the total agency budget in 1994.[198] Again, this has caused the unit to be remiss in its responsibilities. Furthermore, it has been claiming a high rate of inspection of industries and establishments. However, computation of targets is budget-driven,

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[195] IEMP. Policy Study # 9.
[196] IEMP. Policy Study # 9.
[197] IEMP. Policy Study # 9.
[198] IEMP. Policy Study # 9.

i.e. given the budget, they compute for the number of companies to be inspected within the budget period. This does not reflect how many establishments should in fact be inspected, thus does not achieve pollution control objectives at all.

Another problem arises with the devolution of responsibilities of providing environmental infrastructure, particularly for waste management, to the LGUs. Most LGU personnel are incapable of handling pollution management activities because they were not trained to do so. Moreover, they lack the necessary equipment to conduct such activities.

On the other hand, the NGO community has been active in monitoring pollution within the area. An organization called Task Force Macalajar, composed of 50 People's Organizations and NGOs conducted a number of activities in protecting the environment. They monitor pollution using the facilities at Xavier University and guard against illegal fishing and logging. The DENR Regional Director has recognized the positive contributions of the Task Force and has commented that "the NGOs are the pushers for them to do their jobs".[199] They help disseminate information on the need for environmental rehabilitation and protection as well as serve as a reminder to industries of their role in protecting the environment.

Plans are formulated to form a multi-sectoral group in monitoring pollution activities in the area. The possible bodies for such a forum would be:

- Regional Development Council (RDC), which can serve as a:
    - clearinghouse for sectoral policy implementation;
    - medium for government program coordination in the region;
    - forum in the exchange of information and policies of national government departments; and
    - monitoring implementation of government projects and policies in Region X.
- Local Development Councils (LDCs), at any of the following levels:
    - provincial;
    - city; and
    - municipal.
- Environment and Natural Resources Council (ENRC) under DAO 30 of 1992, to be formed at every local government level.

Formation of these groups will only be possible if the participants, particularly LGU personnel, are skilled and well-equipped to undertake pollution monitoring activities. Otherwise, they would only be additional layers in the bureaucracy without added value in environmental management.

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[199] IEMP. Policy Study # 9.

The case of Del Monte Philippines, Inc. (DMPI) in causing water pollution in the CIC is an example of how combined efforts of the whole community were able to stop the company in further polluting Macalajar Bay.

The company used to discharge their wastes into the water through submarine outfalls. The length of the pipes was shorter than required because of the lack of a supporting structure for installing pipes due to a sudden drop in the ocean floor. Monitoring results by the company and the DENR varied because of the depth from which the samples were taken. When effluents reached shallow water and water near the shoreline turned yellowish brown due to suspended solids from pineapple pulp and skin, the public, through the Task Force Macalajar, pressured the DMPI to install new equipment. The initial move of the company was to change their steel pipes into hard plastic. However, the pipes were damaged after two years of installation, thus, a wastewater treatment plant had to be installed to appease the public.

CONCLUSION

Governments in East Asia have always been aware of the importance of environmental protection and management, particularly the marine sector. This is shown by the abundance of environmental rules and regulations that have existed for a number of years now. However, enforcement has generally been weak. Furthermore, there has been a lack of adherence to the polluter pays principle, whereby the fines system does not adequately account for the damages to the environment caused by both land- and sea-based sources of marine pollution.

In the Philippine case, a number of factors have contributed to this, most of which had to do with the lack of a single comprehensive blueprint on how to protect the environment. Government agencies at the national level have overlapping functions. In the case of local governments, devolution of functions are not matched with the proper skills and capabilities in mobilizing financial resources. Realizing this, there is no incentive for the private sector to invest in environment-friendly programs and projects, and evasion of the law becomes cheaper and more efficient within their economic timeframe.

It is only very recently that attention has been turned to the use of sustainable financing mechanisms for the conduct of environment programs. Application of such mechanisms can become successful through partnerships between the government, the NGOs and the private sector. Each entity has a role to play within their respective area of responsibility. Furthermore, both objectives of garnering a reasonable return on investment, and environment protection coupled with economic development should be simultaneously pursued to ensure the sustainability of the partnership.

The BOT scheme is a good case study of a successful partnership between the private sector and the government. Although there have been no concrete examples of such schemes in marine pollution management programs, BOT can certainly be applied in such projects.

Emphasis should likewise be placed on building capacities at the local government level. Decisions concerning the marine environment are being devolved to the LGUs, hence, should be matched with proper skills in doing so. The national government realizes this and has come up with numerous training programs for LGU personnel. Hopefully, this contributes towards the adequate protection of the marine environment. Nevertheless, constant guidance should be provided until such time when local governments exhibit self-sufficiency in initiating sustainable marine pollution management programs. Joint ventures should likewise be encouraged, whereby both national and local government agencies participate actively.

Through the Philippine example, hopefully, lessons can be learned. Not only should these serve internal purposes, but its East Asian neighbors will be able

to benefit as well in pursuit of the right policy and financial recommendations for marine pollution management. As a follow-up activity, comparative studies can be further developed through the Programme, which can be shared with key players in the Region. The tremendous pace at which East Asia is economically growing should be continued together with proper environmental safety measures to achieve sustainable development. In this regard, the marine environment should be protected and managed effectively. The use of sustainable financing mechanisms and viable public sector-private sector partnerships will certainly ensure the accomplishment of such an objective.

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