

Strengthening Environmental Enforcement and  
Compliance Capacity Technical Assistance  
(SEECCTA) Project

**Volume 1**

**Report No. 1A**  
**Assessment of the Legal Framework, Organizational Structure,**  
**and Environmental Management Function of the Environmental**  
**Management Bureau**  
**(Component 1)**

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## ACRONYMS

AC	-	Authority to Construct
ACMC	-	Atlas Consolidated Mining Corporation
ADB	-	Asian Development Bank
ADG	-	Assistant Director General
ADEL	-	Assistant Director for External Linkages Services
ADMAS	-	Assistant Director for Management and Administration Services
ADTEL	-	Assistant Director for Technical Services
APCF	-	Air Pollution Control Facility
AQAP	-	Air Quality Action Plan
AQMF	-	Air Quality Management Fund
AQMS-EQD	-	Air Quality Management Section-Environmental Quality Division
ARCDP	-	Agrarian Reform Communities Development Program
ASEAN	-	Association of Southeast Asian Nations
AV	-	Audio-Visual
BFAR	-	Bureau of Fisheries and Aquatic Resources
BIMP-EAGA	-	Brunei-Indonesia-Malaysia-Philippines East Asia Growth Area
BOI	-	Board of Investments
BPS	-	Bureau of Product Standards
CAA	-	Clean Air Act
CAR	-	Cordillera Administrative Region
CAS	-	Chemical Abstract Services
CC	-	Climate Change
CCO	-	Chemical Control Order
CDO	-	Cease and Desist Order
CEMS	-	Continuous Emission Monitoring System
CENRO	-	Community Environment and Natural Resources Office
CFC	-	Chlorofluorocarbons
CHWM	-	Chemical and Hazardous Waste Management
CLRF	-	Contingent Liability and Rehabilitation Fund
CNC	-	Certificate of Non-Coverage
CO	-	EMB Central Office
COA	-	Commission on Audit
COC	-	Certificate of Conformity
COP	-	Conference of Parties
CP	-	Cleaner Production
CP/CT	-	Cleaner Production/ Cleaner Technology
CRC	-	Chemical Review Committee
CRJ	-	Cash Receipts Journal
DA	-	Department of Agriculture
DAO	-	DENR Administrative Order
DAR	-	Department of Agrarian Reform
DDG	-	Deputy Director General
DECS	-	Department of Education, Culture and Sports



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DENR	-	Department of Environment and Natural Resources
DG	-	Director General
DILG	-	Department of Interior and Local Government
DIPPS	-	Database on Industrial Pollution for Point Sources
DOE	-	Department of Energy
DOF	-	Department of Finance
DOH	-	Department of Health
DOLE	-	Department of Labor and Employment
DOST	-	Department of Science and Technology
DOTC	-	Department of Transportation and Communication
DPWH	-	Department of Public Works and Highways
DSWD	-	Department of Social Welfare and Development
DTI	-	Department of Trade and Industry
EA	-	Emission Averaging
EAC	-	Environmental Adjudication Commission
EANET	-	Acid Deposition Monitoring Network in East Asia
ECA	-	Environmentally Critical Area
ECC	-	Environmental Compliance Certificate
ECIP	-	Employee Compensation Insurance Premiums
ECP	-	Environmentally-Critical Project
EE	-	Environmental Education
EE&I	-	Environmental Education and Information
EGF	-	Environmental Guarantee Fund
EIA	-	Environmental Impact Assessment
EIARC	-	Environmental Impact Assessment Review Committee
EIRAM	-	Environmental Impact, Risk Assessment and Management
EIS	-	Environmental Impact Statement
ELR	-	Environmental Laboratory Recognition
EMB	-	Environmental Management Bureau
EMB-EEID	-	Environmental Management Bureau-Environmental Education and Information Division
EMF	-	Environmental Monitoring Fund
EMP	-	Environmental Management Plan
EM/PC	-	Environmental Management and Pollution Control
EMS	-	Environmental Management System
ENR	-	Environment and Natural Resources
ENRA	-	Environment and Natural Resources Accounting
ENRAP	-	Environmental and Natural Resources Accounting Project
EO	-	Executive Order
EPIC	-	Environmental Management Programme for Industry Competitiveness
EPO	-	Environmental Protection Officer
EQA	-	Environmental Quality Assessment
EQD	-	Environmental Quality Division
ERDB	-	Ecosystems Research and Development Bureau
ERF	-	Environmental Revolving Fund
ESM	-	Environmentally Sound Management
ET	-	Emission Trading

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FLO	-	Formal Lifting Order
FMB	-	Forest Management Bureau
FPA	-	Fertilizer Pesticide Authority
GB	-	Governing Board
GCCDC	-	Golf Course Construction and Development Committee
GEF	-	Global Environmental Facility
GEOHAT	-	Geologic/Hydrogeologic Assessment
GHG	-	Greenhouse Gas
GIS	-	Geographic Information System
GOCC	-	Government Owned and Controlled Corporation
GSIS	-	Government Services Insurance System
HAZMAT	-	Hazardous Materials
HB	-	House Bill
HLURB	-	Housing and Land Use Regulatory Board
HRMS	-	Human Resources Management Services
HW	-	Hazardous Waste
HWG	-	Hazardous Waste Generators
HWMC	-	Hazardous Wastes Management Committee
IAC	-	Inter-Agency Committee
IACC	-	Inter-Agency Coordinating Committee
IAC/Ps	-	Inter-Agency Committee/Projects
IACEH	-	Inter-Agency Committee on Environmental Health
IATAC	-	Inter-Agency Technical Advisory Council
ICC	-	Investment Coordinating Council
ICETT	-	International Center for Environmental Technology Transfer
ICT	-	Information and Communication Technology
IE	-	Interlaboratory Exercise
IEC	-	Information, Education and Communication
IEE	-	Initial Environmental Examination
IEMP	-	Industrial Environmental Management Project
IIAC	-	International and Inter-Agency Commitments
IISE	-	Industrial Initiatives for Sustainable Environment
IRR	-	Implementing Rules and Regulations
ISP	-	Internet Service Provider
JBIC	-	Japan Bank for International Cooperation
JICA	-	Japan International Cooperation Agency
LAER	-	Lowest Achievable Emission Rate
LAN	-	Local Area Network
LGC	-	Local Government Code
LGUs	-	Local Government Units
LLDA	-	Laguna Lake Development Authority
LMB	-	Lands Management Bureau
LOGOFIND	-	Local Government Finance And Development
LTO	-	Land Transportation Office
MARPOL	-	Marine Pollution
MBEMP	-	Manila Bay Environmental Management Project
MBI	-	Market Based Instruments
MBPCC	-	Manila Bay Project Coordinating Committee

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MC	-	Memorandum Circular
MGB	-	Mines And Geo-Sciences Bureau
MIS	-	Management Information System
MMAQISDP	-	Metro Manila Area Quality Improvement Sector Development
MMDA	-	Metro Manila Development Authority
MMT	-	Multipartite Monitoring Team
MOA	-	Memorandum of Agreement
MP	-	Montreal Protocol
MRF	-	Materials Recovery Facility
MVIS	-	Motor Vehicle Inspection System
MVTAS	-	Motor Vehicle
NAAQ	-	National Ambient Air Quality
NACOMEAT	-	National Committee on Meat, Amenities and Technology
NALECC	-	National Law Enforcement Coordinating Committee
NAMRIA	-	National Mapping and Resource Information Authority
NCC	-	National Coordinating Committee
NCR	-	National Capital Region
NEA	-	National Electrification Administration
NEC	-	National Ecology Center
NEDA	-	National Economic Development Authority
NEMA	-	National Environmental Management Authority
NESSAP	-	National Emission Standards for Source Specific Air Pollutants
NEPC	-	National Environmental Protection Council
NGAS	-	New Government Accounting System
NGO	-	Non-Government Organization
NMIC	-	National Meat Inspection Commission
NOV	-	Notice of Violation
NPCC	-	National Pollution Control Commission
NRDC	-	National Resources Development Corporation
NSCB	-	National Statistics Coordination Board
NSWM	-	National Solid Waste Management
NSWMC	-	National Solid Waste Management Commission
NWAPCC	-	National Water and Air Pollution Control Commission
NWRB	-	National Water Resources Board
ODS	-	Ozone Depleting Substances
OP	-	Office of the President
PA21	-	Philippine Agenda 21
PAB	-	Pollution Adjudication Board
PAGASA	-	Philippine Atmospheric, Geophysical and Astronomical Services Administration
PATLEPAM	-	Philippine Association of Tertiary Level Educational Institutions in Environmental Protection and Management
PAWB	-	Protected Areas and Wildlife Bureau
PCARRD	-	Philippine Council for Agriculture and Resource Research and Development
PCB	-	Polychlorinated Biphenyls
PCCI	-	Philippine Chamber of Commerce and Industry
PCIERD	-	Philippine Council for Industry and Energy Research and

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		Development
PCG	-	Philippine Coast Guard
PCL	-	Priority Chemical List
PCO	-	Pollution Control Officer
PCSD	-	Philippine Council for Sustainable Development
PD	-	Presidential Decree
PEMSEA	-	Partnership for Environmental Protection and Management for the Seas of East Asia
PENRO	-	Provincial Environment and Natural Resources Office
PEPA	-	Philippine Environmental Protection Authority
PEQ	-	Philippine Environmental Quality Report
PERA	-	Personnel Economic Relief Allowance
PETC	-	Private Emission Testing Center
PEZA	-	Philippine Export Zone Authority
PIA	-	Philippine Information Agency
PIC	-	Prior Informed Consent
PICCS	-	Philippine Inventory of Chemicals and Chemical Substances
PM	-	Particulate Matter
PMO	-	Project Management Office under the PTFWM
PMPIN	-	Pre-Manufacturing and Pre-Importation Notification
PMS	-	Planning and Management Staff
PNP	-	Philippine National Police
PNRI	-	Philippine Nuclear Research Institute
PNS	-	Philippine National Standards
PO	-	People's Organization
PTO	-	Permit to Operate
POP	-	Persistent Organic Pollutants
PRRC	-	Pasig River Rehabilitation Commission
PTFWM-PMO	-	Presidential Task Force on Waste Management Project Management Office
PTF-WRDM	-	Presidential Task Force on Water Resources Development and Management
PTO	-	Permit to Operate
PUV	-	Public Utility Vehicles
RA	-	Republic Act
RATA	-	Representation and Transportation Allowance
RD	-	Regional Director
RDD	-	Research and Development Laboratory Division
RED	-	Regional Executive Director
R&D	-	Research and Development
RO	-	EMB Regional Office
RP	-	Republic of the Philippines
RPAO	-	Regional Public Affairs Office of the DENR
SAP	-	Strategic Action Programme
SEECCTA	-	Strengthening Environmental Enforcement Compliance Capacity Technical Assistance
SIDA	-	Swedish International Development Cooperation Agency
SLF	-	Sanitary Landfill

SMI	-	Strategic Management Initiative
SOP	-	Standard Operating Procedure
SS&PS	-	Standard Setting and Policy Studies
STP	-	Sewage Treatment Plant
SWM	-	Solid Waste Management
TA	-	Technical Assistance
TAC	-	Technical Advisory Council
TAG	-	Technical Assistance Group
TDA	-	Transboundary Diagnostic Analysis
TESDA	-	Technical Education and Services Development Authority
TI	-	Texas Instruments
TLO	-	Temporary Lifting Order
TNA	-	Training Needs Assessment
TPO	-	Temporary Permit to Operate
TSD	-	Treatment Storage Disposal
TSP	-	Total Suspended Particulate
TWG	-	Technical Working Group
TWSIP	-	Tiwi Solid Wastes Injection Project
UNDP	-	United Nations Development Programme
UNEP	-	United Nations Environment Programme
UNFCCC	-	United Nations Framework Convention on Climate Change
UNIDO	-	United Nations Industrial Development Organization
UP	-	University of the Philippines
USAID	-	United States Agency for International Development
USEPA	-	United States Environmental Protection Agency
VTASTC	-	Vehicle Type Approval System Testing Centers
WAN	-	Wide Area Network
WB	-	World Bank
W/F/P	-	Work and Financial Plans
WHO	-	World Health Organization
WTA	-	Willingness -to-Accept
WWPS	-	Waste Water Permitting System
WWTF	-	Waste Water Treatment Facility

# ASSESSMENT OF THE LEGAL FRAMEWORK, ORGANIZATIONAL STRUCTURE, AND ENVIRONMENTAL MANAGEMENT FUNCTION OF THE ENVIRONMENTAL MANAGEMENT BUREAU

## PREFACE

The following institutional and organizational assessment of the Environmental Management Bureau (EMB) is written in the context of deteriorating urban environmental conditions in the country. Resulting from the historical interplay of economic growth, demographic factors and the urbanization process, prevailing environmental conditions pose challenges to the Bureau, requiring reflection on its *raison d'être* and adjustments to its strategic goals and operations.

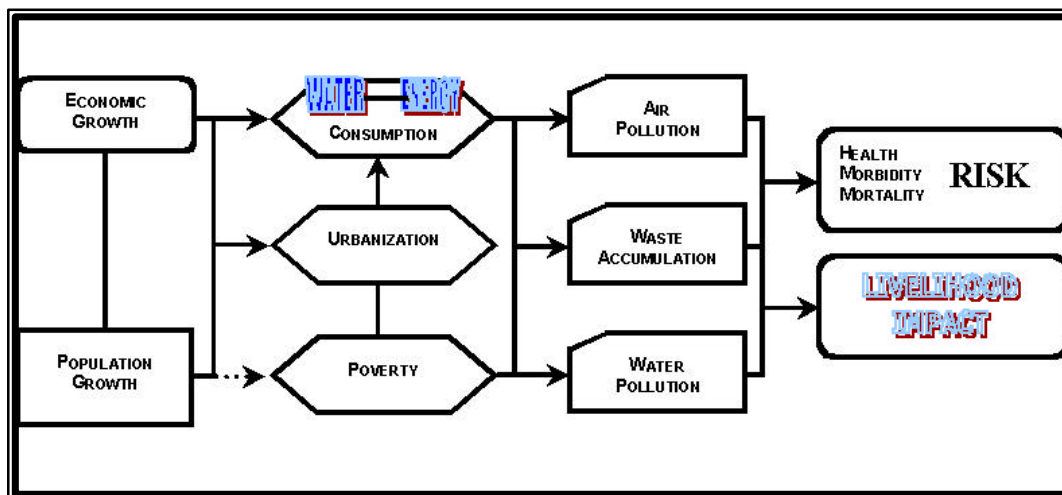
By way of a background, the post-war pattern of Philippine economic growth has been uneven and unsustainable. The gains from the exportation of natural resources, fisheries and agricultural products in the 1960s and 1970s were limited to a few provinces and sectors. Similarly, the benefits of the import substitution industrialization strategy in the postwar decades were confined to protected industries in enclaves concentrated in the Metro Manila area and other port cities. Subsequent developments after 1970, such as the adoption of the green revolution technology, the increase in foreign borrowings, and the promotion of new exports and industrial estates merely reinforced an uneven growth pattern that failed to alleviate the poverty of a growing number of Filipinos. In fine, limited industrial development, lack of export diversification, and uncontrolled population growth contributed to the lack of substantial growth from the 1980s to 2000, resulting in per capita real incomes in 2000 that were equal only to the figure in 1980. They also exacerbated poverty levels and environmental conditions.

The development of urban areas, particularly Metro Manila, reflects the country's uneven growth pattern. The concentration of industries, commercial and service establishments, as well as government offices in the metropolis and other port cities and the lack of industrial development in other parts of the country stimulated rapid in-migration, resulting in the proliferation of slum communities and urban congestion. As a case in point, about 40% of the population in Metro Manila live in slums. Cities within the capital region are also 7 to 15 times more densely populated than the national average (NSCB, 2001).

As a consequence of rapid urbanization, the industrial and household demand for water and energy resources, transport, and other services grew significantly without the necessary environmental regulatory capacity and infrastructures such as sewerage and waste water treatment facilities, mass public transportation, pollution control and waste management systems in place. The result has been greater waste accumulation, severe air and water pollution and corresponding health hazards and adverse livelihood impacts. (*Figure 1* shows the relationship of these variables and processes). Moreover, the dependence of most cities on groundwater resources rather than surface water has led to greater water loss through withdrawals that could not be offset by aquifer

recharge. The pollutants that have leached into the aquifers, also threaten the urban population's access to quality water and health status.

**Figure 1**  
**Linkages of Economic and Environmental Variables**  
**Affecting People's Health and Livelihood**



Air quality in Metro Manila and other urban centers has deteriorated considerably. Since the 1980s, the average annual concentrations of total suspended particulates (TSP) have remained above the guideline of 140 ug/ cubic meter, with Metro Manila having the worst readings compared to other cities. (DENR-EMB, 2002; World Bank, 2002) About 31% of the emissions that adversely affect air quality are spewed by mobile sources while 29% emanates from stationary sources such as industries and power plants. The rest of the emissions are due to dusty roads, construction activities, and solid waste.

Regarding mobile sources of air pollution, approximately 3.9 million registered vehicles in 2001 represented a three-fold increase in the past two decades without any corresponding reduction in pre-existing pollution sources. Of these vehicles, about 70% are gasoline-fueled and 30% diesel-fueled. (Land Transportation Office, 2002) More disturbing is the number of motorcycles and tricycles that depend on two-stroke engines, which has surpassed the number of cars. Seven out of ten such vehicles emit fine particles, unburned fuel and lubricants.

Of the stationary contributors to air pollution, food, textile and iron and steel industries probably account for 80% of the particulate emissions of the industrial sector. (ENRAP, 1997) Most of the establishments do not have air pollution control facilities. The cost of operating such facilities has also prevented those who have them from ensuring their operation. It is also notable that thermal power stations emitting sulfur dioxide are located in the National Capital Region and Southern Luzon.

The effects of air pollution on health have been documented. Daily concentrations of PM, a mixture of dust, dirt, smoke and liquid droplets, are directly related to premature

deaths. Similarly, diesel emissions from buses, jeepneys, utility vehicles and trucks are recognized as causing cancer. Unfortunately, since the level of air pollution in most places is not known, its adverse effects on health are inconclusive. There is to date no systematic monitoring of nitrogen oxides, volatile organic compounds and other hazardous air pollutants.

Like the air, water bodies -- bays, lakes, rivers, coastal areas and groundwater aquifers in the country have been polluted. Mixed pollutants from lowland and upland areas have affected lakes, while oil spills, mine tailings, and silt have polluted bay areas. Solid and liquid wastes, on the other hand, have choked rivers, and occasionally this has resulted in fish kills. Moreover, disposed used oil and other effluents, domestic wastes and leakages from septic tanks and leftover gasoline tanks have polluted the aquifers. For the country as a whole, organic wastes are said to constitute from 55% to 75% of water pollution.

The role of wastes in polluting the water sources of urban areas, particularly Metro Manila is significant. The National Capital region produces about 23% of the nation's solid waste (about 2.5 million tons/year). (World Bank, 2001) Most of this waste are collected and merely disposed of in open dumpsites, at times indiscriminately. The uncollected wastes in slum areas including human wastes also end up in waterways, clogging their flow and thereby resulting in urban floods (ibid). Some of the wastewater filter into the groundwater, contaminating it. It is important to note that hazardous medical wastes, of which about half are not disposed through incinerators (ibid), are disposed of improperly and end up in open dump sites. They may be among the pollutants of rivers and lakes and the leachates of aquifers. As in air pollution, it is unfortunate that an adequate system of monitoring water pollution is not yet fully in place. The effect of pollution on health and livelihood hence cannot be determined.

Knowing the actual extent of air and water pollution at any given time and their adverse impacts on the environment, health and livelihood conditions in urban areas is already a difficult challenge considering the limited resources of the country. Monitoring and managing their levels and effects are even more daunting. While air and water pollution and solid and toxic waste accumulation do not span the full range of urban environmental problems in the Philippines, developing creative strategies to address the problem in the face of institutional and logistical constraints is a goal that resonates with the EMB's mission.



## **1. OBJECTIVE OF THE STUDY AND METHODOLOGY**

This paper provides an assessment of the Environmental Management Bureau (EMB) in terms of its legal framework, organizational structure and personnel profile, and its environmental management function. EMB's legal framework consists of the various mandates, environmental laws and commitments it must implement. These mandates overtime have influenced the organizational structure of the Bureau, and defined the various functions it performs in environmental management.

EMB performs a number of generic environmental management functions, and these include enforcement, policy formulation, research, education, and fund generation and management. There are of course other operational functions that the Bureau performs, such as legal support, information management, program/policy monitoring and evaluation, but these may be subsumed in a number of the above generic functions. For instance, legal support is necessary in enforcement and policy formulation while information management applies to all generic functions.

The purpose for focusing initially on these generic functions is to identify the absolute and relative gaps in EMB's performance of these functions. Discussions on these absolute and relative gaps will clarify the nature and quality of the operational functions of the Bureau. More importantly, it will provide the background for the various strategic options to address the gaps. The Strategic Plan partly consists of the options that comprise the strategic direction and plan for the Bureau. The Strategic Plan will be presented in Report No. 1B.

The organizational assessment in Part I consists of three sections. Section 1 presents the general legal framework for environmental management. It includes a discussion of various national environmental laws and the different international commitments of the Philippine government to environmental concerns that are relevant to EMB. Section 2, on the other hand, highlights some general observations on the evolution of the Bureau and its current challenges. Finally, Section 3 provides a deeper assessment of the performance of the Bureau in terms of its general environmental management functions and the implementation of its various mandate directives and activities.

Methodologically, the assessment is done on two levels. A process evaluation of the organizational capability of EMB to effect improvements in environmental management, regulation and delivery systems constitutes the first level. It is based on an examination of the approaches and methodologies of the Department of Environment and Natural Resources (DENR) and EMB in the fulfillment of their respective mandates in environmental management. It ascertains the clarity and strength of EMB's legal and institutional mandate, the adequacy of DENR support and the Bureau's own logistical and personnel resources, and the extent and quality of its output, activities, policies and interventions, as well as regulatory and monitoring mechanisms. More specifically, EMB's mandates and directives are compared with the actual activities of the Bureau. Gaps, in the form of activities that EMB still needs to undertake in line with its mandates, are identified in the process. The distribution of activities between the EMB Regional Offices (ROs) and the Central Office (CO) and recommendations on how to improve it are likewise spelled out.

The second level involves an evaluation of EMB's performance. This entails an analysis of the EMB program outputs in relation to its stated goals and objectives or an assessment of the bureau's overall accomplishment. This level of evaluation identifies the problems and issues in the implementation of the Bureau's current activities, as well as the recommended measures to accelerate activities and realize management goals. An assessment of the EMB in terms of its institutional capability to perform its functions thus provides the appropriate strategies and recommendations that could strengthen the Bureau.

## **2. LEGAL FRAMEWORK**

### **2.1 Legal Mandates**

Two laws enacted in the late 1970's prior to the EMB's establishment in 1987 have protected environmental quality: Presidential Decree No. 984<sup>1</sup> (PD 984) of 1976 or the Pollution Control Law; and Presidential Decree No. 1586<sup>2</sup> (PD 1586) of 1978 on the creation of an Environmental Impact Assessment System. Since the establishment of EMB, three other environmental laws have been added to the list: Republic Act (RA) No. 6969 (1990) otherwise known as the Toxic Substances and Hazardous and Nuclear Waste Management Act; RA No. 8749 (1999) or the Clean Air Act and RA No. 9003 (2000) or the Ecological Solid Waste Management Act. The mandates of the EMB may be gleaned from these laws and the stipulations of the Executive Order (EO 192) that created the Bureau.

#### **2.1.1 Presidential Decree No. 984 (PD 984) of 1976**

PD 984 otherwise known as the Pollution Control Law declares as a national policy the prevention, abatement and control of water, air and land pollution for the more effective utilization of the country's resources. Most of its focal activities pertain to water quality management— water body classification and monitoring, pollution load assessment and inventory, the specification of effluent standards for a particular water quality, and the promotion of pollution control technology, strategies and alternatives. In order to implement the policy and management approach embedded in the Decree, the National Water and Air Pollution Control Commission (NWAPCC), established by Republic Act No. 3931<sup>3</sup> in 1964 was abolished, and the National Pollution Control Commission (NPCC) created in its place. The NWAPCC was granted quasi-judicial powers in adjudicating pollution cases.

#### **2.1.2 Presidential Decree No. 1586 (PD 1586) of 1978**

PD 1586 aims to “attain and maintain a rational and orderly balance between socio-economic growth and environmental protection through the sustainable use, development, management, renewal and conservation of the country's natural resources, including the protection and enhancement of the quality of the environment, not only for the present generation but for the future generation as well.” Achieving a comprehensive and integrated environmental protection made it necessary to institute an Environmental Impact Statement (EIS) System that would reconcile the imperatives of socio-economic undertakings with the requirements of environmental equity. Sec. 6 of this Decree authorized the National Environmental Protection Council (NEPC) as a

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<sup>1</sup> Presidential Decree No. 984. 1976. *“Providing for the Revision of Republic Act No. 3931, Commonly Known as the Pollution Control Law, and for Other Purposes”*.

<sup>2</sup> Presidential Decree No. 1586. 1978. *“Establishing an Environmental Impact Statement System, including other Environmental Management Related Measures and for Other Purposes”*.

<sup>3</sup> Republic Act No. 3931. 1964. *“An Act Creating the National Water and Air Pollution Control Commission”*.

Secretariat, to administer the Environmental Impact Statement System, as well as process and evaluate environmental impact statements.

### **2.1.3 Executive Order No. 192<sup>4</sup> (EO 192) of 1987**

EO 192 effected the reorganization of the Department of Environment, Energy and Natural Resources into the DENR. It was conceived to be the primary government agency responsible for the sustainable use, development, management, and conservation of the country's natural resources (forest, mineral, offshore areas and others), on the one hand, and the protection and enhancement of the quality of the environment, on the other.

Section 16 of EO 192 creates the EMB as a body with the following functions:

- Provide technical assistance in EIA implementation and monitoring, environmental management and pollution control matters; serve as PAB Secretariat; conduct public hearings in pollution cases (EM/PC), develop environmental research programs, and formulate and disseminate information on EM/PC matters to the public
- Advise the Regional Offices on EM/PC policy implementation and the DENR Secretary on legal aspects of EM/PC
- Formulate standards, rules and regulations on environmental quality and proper disposal of solid, toxic and hazardous wastes
- Recommend EM/PC legislation, policies and programs and EIA rules and regulations
- Coordinate with inter-agency committees created to prepare the State of the Philippine Environmental Report and National Conservation Strategy

EO 192 also delineates the role of EMB in the environmental impact assessment (EIA) process and pollution adjudication. It integrates the administration of the EIA system in EMB's mandate, and defines the distribution of responsibilities between the Bureau and the Pollution Adjudication Board (PAB). The PAB assumed the quasi-judicial functions of the NPCC with respect to the adjudication of pollution cases while the EMB performed the Secretariat functions of the Board. **Appendix A** shows how the NPCC functions were distributed to the EMB and PAB.

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<sup>4</sup> Executive Order No. 192. 1987. *“Providing for the Reorganization of the Department of Environment, Energy and Natural Resources; Renaming it as the Department of Environment and Natural Resources and for other Purposes.”*

Over time the general mandate of EMB, as stipulated in EO 192, were articulated more specifically in administrative regulations on water usage and classification, water quality criteria, and water effluents—DAO 34<sup>5</sup>; DAO 35<sup>6</sup>; DAO 23-97<sup>7</sup> and DAO 99-17<sup>8</sup>.

With respect to water quality management, EMB is made responsible for the following specific functions:

- Classification of Philippine waters according to their best usage;
- Re-classification of Philippine waters based on the intended beneficial use;
- Formulation of water quality standards;
- Setting up and promulgation of rules on effluent, stream, ambient and emission standards;
- Assistance in the conduct of public hearings in pollution cases;
- Promulgation of national rules and policies governing marine pollution, including the discharge of effluent from any outfall structure, industrial and manufacturing establishments or mill of any kind to the extent that it is regulated by RA 3931; and
- Issuance of appropriate rules and regulations on marine pollution upon consultation with the Philippine Coast Guard. (PD 1152<sup>9</sup>, PD 1067<sup>10</sup>, PD 979<sup>11</sup>, PD 984, EO 192)

It must be noted that apart from water, the EMB is also mandated by EO 192 to formulate environmental quality standards for other media and forms of pollution, specifically for air, land, noise, and radiation. However, the standards and corresponding rules and regulations for the environmental quality management of land and noise pollution as well as radiation have not been as developed as for water. Air quality standards under PD 984 of 1976 were only revised with the enactment of Clean Air Act of 1999. Because of lack of equipment, monitoring of air pollution parameters has been limited.

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<sup>5</sup> DENR Administrative Order No. 34. 1990. *Revised Water Usage and Classification Water Quality Criteria Amending Section Nos. 68 and 69, Chapter III of the 1978 NPCC Rules and Regulations.*

<sup>6</sup> DENR Administrative Order No. 35. 1990. *Revised Effluent Regulations of 1990, Revising and Amending the Effluent Regulations of 1982.*

<sup>7</sup> DENR Administrative Order No. 23, 1997. *Updating DAO 34, series of 1990, Otherwise known as the Revised Water Usage Classification/Water Quality Criteria Amending Sections 68 and 69, Chapter III of the 1978 NPCC Rules and Regulations.*

<sup>8</sup> DENR Administrative Order No. 17. 1999. *Updating Department Administrative Order No. 35, S. 1990 Otherwise Known as the Revised Effluent Regulations of 1990, Revising and Amending the Effluent Regulations of 1982.*

<sup>9</sup> Presidential Decree No. 1152. 1977. *"The Philippine Environment Code"*.

<sup>10</sup> Presidential Decree No. 1067. 1976. *"The Water Code of the Philippines"*.

<sup>11</sup> Presidential Decree No. 979. 1976. *"Providing for the Revision of Presidential Decree No. 600 Governing Marine Pollution"*.

#### 2.1.4 Republic Act No. 6969<sup>12</sup> (RA 6969) of 1990

The Toxic Substances and Hazardous and Nuclear Wastes Management Act (RA 6969), together with its Implementing Rules and Regulations (IRR)<sup>13</sup>, provide a wide area for environmental regulation, monitoring and enforcement, covering numerous economic activities, such as the (1) importation; (2) manufacture; (3) processing; (4) handling; and (5) disposal of all *unregulated chemical substances and mixtures* in the Philippines, as well as the (6) entry, even in transit; (7) storage; and (8) disposal of *hazardous and nuclear wastes* into the country for whatever purpose.

In pursuit of the objectives of RA 6969, the functions contained in **Appendix B** have been entrusted to the DENR. As the lead agency, the DENR through its Secretary, duly authorized representative, or any other department or bureau, is mandated to administer the IRR. Though the law or its IRR do not explicitly mention the EMB, the bureau has already begun to undertake most of the functions related to toxic and hazardous wastes.

#### 2.1.5 Republic Act No. 8749<sup>14</sup> (RA 8749) of 1999<sup>15</sup>

The Clean Air Act is a revision and expansion of the air quality management component of PD 984. The strength of RA 8749 lies in its innovations in air quality management that goes beyond mere government regulation. It introduces other more effective approaches such as the use of market-based instruments and the promotion of self-regulation by the business and private sector as well as citizen participation. There is also the provision of a financial and legal system to support program implementation. Under Section 34, the DENR is the primary government agency responsible for the implementation and enforcement of the Clean Air Act. To be more effective, the EMB is to be converted from staff bureau<sup>16</sup> to a line bureau<sup>17</sup> for a period of no more than 2 years, unless a separate, comprehensive environmental agency is created.

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<sup>12</sup> Republic Act No. 6969. 1990. "An Act to Control Toxic Substances and Hazardous and Nuclear Wastes, Providing Penalties for Violations Thereof, and for Other Purposes".

<sup>13</sup> DENR Administrative Order No. 29. 1992. "Implementing Rules and Regulations of RA 6969".

<sup>14</sup> Republic Act No. 8749. 1999. "An Act Providing for a Comprehensive Air Pollution Control Policy and for Other Purposes".

<sup>15</sup> Source: REECS. 2002. *The Legal Framework and Organizational Structure for Environmental Management in the Philippines*. In SEECCTA Second Progress Report.

<sup>16</sup> A "staff bureau" exists in departments where operations are undertaken by regional offices organized under a department mode. It renders assistory and advisory functions to the Department Proper on substantive matters affecting the bureau, but does not have direct line of command over regional and field offices tasked with line functions and program implementation (Dr. Raul P. De Guzman. *A Study of Internal Adjustments to Falling and Low Basic Salaries: The Case of Philippine Civil Service*. A Country Paper for the Philippines, ILO in Geneva).

<sup>17</sup> "Line bureau" operates under a bureau model when the department has no regional offices OR when the regional offices are organized on a bureau-wide basis. The line bureau implement programs and activities within their field of specialization.

As a line bureau, EMB is held responsible for the IMPLEMENTATION and ENFORCEMENT of the Act (Part XI, Rule XLIV, Section 2). The Act stipulates that it organize a Central Office and the necessary regional, provincial, and such other offices as may be established by pertinent administrative orders issued by the Secretary. The EMB shall accordingly establish and make regional offices operational within 2 years from the effectivity of the IRR. For this purpose, the Act empowered the EMB to reorganize and increase the number of its personnel in order to effectively implement the Act and its IRR subject to DBM approval.

The Act revises the air quality management sections of PD 984 by:

- Providing the authority to mix different policy tools to manage air quality by retaining and strengthening regulatory powers, introducing market-based instruments, and encouraging cooperation, self-regulation and citizen participation in all aspects of program management
- Lifting the legal barriers from EMB to implement a pollution charge system on both mobile and stationary air pollution sources
- Providing a financial system to fund program implementation
- Attempting to link ambient management to emission standards through emission quotas and charge system
- Authorizing the EMB to re-define its organizational structure and transform from a staff to line bureau to fulfill the mandate of the Act for a period of two years

Pursuant to its provisions and EO 192, DENR issued Administrative Order No. 2000-81<sup>18</sup> that provides for the IRR of the Philippine Clean Air Act. Under the IRR, the EMB functions are as follows:

***With respect to air quality information and data***

- Prepare an annual National Air Quality Status Report, develop information network for data storage and retrieval, and serve as the central depository of all air quality-related information and data;
- Issue and revise information on air pollution control techniques, and review/revise and publish annually a list of hazardous air pollutants with corresponding ambient guideline values and/or standards

***With respect to permits and standards***

- Issue permits as it may determine necessary for the prevention and abatement of air pollution;
- Design, impose on and collect regular emission fees from industrial dischargers as part of the emissions permitting system based on environmental techniques;
- Require proponents to put up financial guarantee mechanisms;

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<sup>18</sup> DENR Administrative Order No. 2000-81. 2000. *“Implementing Rules and Regulations for RA 8749, The Philippine Clean Air Act of 1999”*.

- Review, revise and publish emission standards for stationary sources and motor vehicles  
(Note: implementation of standards for motor vehicles – DOTC)
- (Note: specification for fuel/fuel-related products & regulation of use of fuel/fuel additive – DOE, in coordination with other agencies)

***With respect to enforcement of its powers and functions***

- Have the right of entry or access to any premises including documents and relevant materials, inspect any pollution or waste source, control, devise, monitor equipment or method required, and test any emission;
- Require source owners to (a) establish and maintain relevant records; (b) make relevant reports; (c) install, use and maintain monitoring equipment or methods; (d) sample emission in the manner prescribed by the DENR; and (e) keep records.
- Exercise other related powers and functions

**2.1.6 Republic Act No. 9003<sup>19</sup> (RA 9003) of 2000**

RA 9003 otherwise known as the Ecological Solid Waste Management Act seeks to promote the utilization of environmentally sound methods that maximize the use of valuable resources and encourage resource conservation and recovery. The law retains with the local government units (LGUs) the primary task of enforcing waste management while encouraging the involvement of national agencies, the private sector, and communities in garbage control projects and initiatives. In general, the law seeks to promote the adoption of a systematic, comprehensive and ecological solid waste management program that will:

- Protect public health and environment;
- Utilize environmentally-sound methods to maximize use and encourage conservation and recovery of resources;
- Provide guidelines/targets for solid waste avoidance and volume reduction through measures such as composting, recycling, re-use, recovery, green charcoal process and others, before collection, treatment and proper disposal;
- Ensure proper segregation, collection, transport, storage and treatment and disposal of solid waste through the formulation and adoption of the best environmental practice in ecological waste management excluding incineration;
- Promote national research and development program for improved solid waste management and resource conservation techniques, more effective institutional arrangement and indigenous and improved methods of waste reduction, collection, separation and recovery;
- Encourage greater private sector participation in solid waste management;

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<sup>19</sup> Republic Act No. 9003. 2000. *“An Act Providing for an Ecological Solid Waste Management Program, Creating the Necessary Institutional Mechanisms and Incentives, Declaring Certain Acts Prohibited and Providing Penalties, Appropriating Funds Therefore and for Other Purposes”*.



- Retain primary enforcement and responsibility of solid waste management with Local Government Units (LGUs) while establishing a cooperative effort among the national government, other local government units, non-government organizations, and the private sector;
- Encourage cooperation and self-regulation among waste generators through the application of market-based instruments;
- Institutionalize public participation in the development and implementation of national and local integrated, comprehensive and ecological waste management programs; and
- Strengthen the integration of ecological solid waste management and resource conservation and recovery topics into the academic curricula of formal and non-formal education in order to promote environmental awareness and action among the citizenry.

## 2.2 International Environmental Commitments

The Philippines is a signatory of treaties and conventions on international environmental law that recognizes the transboundary nature of environmental concerns. The most crucial of these agreements are the following:

### a. Vienna Convention for the Protection of the Ozone Layer

- a. Montreal Protocol on the Protection of the Ozone Layer
- b. [LONDON] Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer
- c. [COPENHAGEN] Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer

The Montreal Protocol on Substances that Deplete the Ozone Layer, developed in 1987 under the auspices of the United Nations Environment Programme, defined the measures that parties must take to limit the production and consumption of controlled substances such as the CFCs and Halons.

The Philippines which became a signatory of the protocol in 1988, committed to reduce and eventually phase-out ODS. Not being a producer of ODS, the country will conform to the phase-out by mainly controlling the substances' importation. Based on the Philippine Country Program, the phase-out schedule would be as follows: 25% (2001), 50% (2005), 85 (2008) and 100% (2010).

The DENR, through the EMB, became the national coordinator on programs. As such, EMB is responsible for the formulation of policies and administrative measures to implement the protocol. In pursuance of RA 6969, DENR domestically implemented this protocol through DENR Administrative Order No. 2000-18<sup>20</sup> or the Chemical Control Order. The importation of ODS and

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<sup>20</sup> DENR Administrative Order No. 18. 2000. *Chemical Control Order for Ozone Depleting Substances*.

alternative substances as well as the usage of existing ODS in various sectors in the country, are strictly regulated and monitored for strict compliance to the phase-out schedule.

## **b. United Nations Framework Convention on Climate Change (UNFCCC)**

- Kyoto Protocol

The United Nations Framework Convention on Climate Change sets the overall framework for inter-government efforts to address climate change. Governments adopted UNFCCC with the objective of stabilizing the concentration of greenhouse gases at a level that will not pose a serious threat to the climate system. The Kyoto Protocol supplements and strengthens the Convention.

The Philippines, being a party to this Convention, is committed to the following tasks:

- Prepare and regularly update national climate change mitigation and adaptation programmes;
- Take climate change considerations into account in the relevant social, economic and environmental policies and use such methods as impact assessments to minimize any adverse economic, health or environmental consequences of climate change measures;
- Promote the development, application and transfer of climate-friendly technologies and practices as well as the sustainable management of carbon sinks;
- Make preparations to adopt climate change;
- Participate in climate research, systematic observation and information exchange;
- Promote education, training and public awareness on climate change;
- Compile an inventory of their greenhouse gas emissions and submit “national communications”<sup>21</sup>

Being a developing country, the Philippines does not have explicit commitments to reduce GHGs. However, efforts to reduce the levels of GHGs are being expended through reforestation, information and education campaigns and energy-related activities.

## **c. Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal**

With the increasing volume of hazardous wastes exported from industrialized countries to developing countries and the lack of the technical capacity in the

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<sup>21</sup>“National communications” are reports on the actions that the parties are taking in the implementation of the Convention.

latter nations to handle such wastes, thereby imposing serious threats to human health and the environment, the Basel Convention was established to encourage environmentally sound management (ESM) of hazardous wastes<sup>22</sup>. It hopes to do so by controlling the transboundary movement of hazardous wastes including their storage, transport, treatment, reuse, recycling, recovery and final disposal following international and national levels as well as the eventual reduction in the generation of such wastes. The Convention was the first to establish globally applicable regulations on the export of hazardous substances.

Although the Convention has established the necessary guidelines, there are still a number of illegal shipments and inappropriate use or dumping of hazardous waste that fuel the advocacy for stricter rules or the total banning of the export of all hazardous wastes.

RA 6969 governs the national implementation of this agreement. However, the implementation does not yet cover the disposal of hazardous wastes. Currently, there is a pending bill in Congress that would cover disposal of hazardous as well as nuclear wastes.

#### **d. Stockholm Convention on Persistent Organic Pollutants (POP)<sup>23</sup>**

The Stockholm Convention on POPs is an international treaty aimed at protecting human health and the environment from persistent organic pollutants such as aldrin, chlordane, DDT, Dieldrin, dioxins, endrin, furans, heptachlor, hexachlorobenzene, mirex, PCBs and toxaphene by eliminating the production, trade and use of these dangerous toxic chemicals. However, the voluntary implementation of the provision of this Convention for countries is still on an interim basis and will only be effective when countries have submitted their instruments for ratification.

The Philippines is one of the 127 governments who have adopted the Convention. EMB has already issued some rules and regulations in compliance to this agreement.

#### **e. Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Use**

This agreement is not yet in force. The Philippines is not yet formally a party to this Convention. However, the nation's representatives have actively participated in the Convention's discussions.

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<sup>22</sup> As covered by the Convention, hazardous wastes are categorized as toxic, poisonous, explosive, corrosive, flammable, ecotoxic and infectious.

<sup>23</sup> POPs are carbon-based compounds that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of living organisms and are toxic to humans and wildlife.

Most of the country's international environmental commitments have had sufficient attention as far as preliminary executive issuances are concerned. However, future outcomes in terms of expected compliance with agreements would hinge on an inventory of existing chemicals and activities that are relevant to particular conventions. The establishment of a good environmental benchmark and database is, therefore, crucial to the implementation of these commitments. Because of its importance in environmental planning and informed decision-making, investment in the build-up of environmental information should reap the most benefits in the medium and long-term.

### 2.3 Functions and Directives/Activities

Each of the EMB's mandates involves various generic environmental management functions that are defined below. Embedded in each generic function are other operational functions. There are at least five environmental management functions (Fuentes, 2002):

**Enforcement.** This function includes monitoring and determining compliance, issuing a Notice of Violation (NOV) and Cease and Desist Order (CDO); implementing the decisions of the Pollution Adjudication Board, implementing a permit system, conducting firm surveys, database development and other activities attendant to enforcement, e.g. river classification. These activities require legal support and information management.

**Policy Formulation and Planning.** This function entails the formulation and issuance of administrative orders, regulations, guidelines, procedures, and the development of manuals and SOPs. Legal support is of course necessary in these activities. In turn, policy analysis, the empirical review and consolidation of air quality reports from the regional offices, and the subsequent generation of reports for policy purposes, all presuppose an established functioning information management system.

**Research and Development.** This function involves monitoring environmental quality changes, the development of environmental standards, the conduct of policy research and scientific experiments for research purposes, and the preparation of project proposals. Information generation or data gathering are inherent in these activities.

**Education.** This function involves capability building activities, information, education and communication activities (IEC), lectures, conduct of seminars and trainings. It requires both legal, technical expertise and pedagogical skills.

**Fund Generation and Management.** This function includes the assessment and collection of fees, fines and penalties, the sourcing out of funds to support EMB's functions and the management of fund mechanisms.

In order to carry out all of the above functions or a particular mandate, directives are required. Because directives may be very general, their implementing rules and regulations (IRR) in the form of a DENR Administrative Order (DAO) provide specific

instructions. Some IRRs, however, may require the formulation of more detailed guidelines, in the form of procedural manuals, memorandum circulars, or new DAOs. For purposes of this assessment, the five legal mandates and their respective IRRs shall be considered as the mandates of the EMB. Subsequent policies enacted in fulfillment of the requirements of the mandates may be classified as accomplished directives.

Each directive is operationalized through activities that are taken from the work plans of the Central Office (CO) and the Regional Offices (RO) and from interviews with key EMB staff. The classification of the directives and activities by function is based on consultations with key EMB staff personnel.

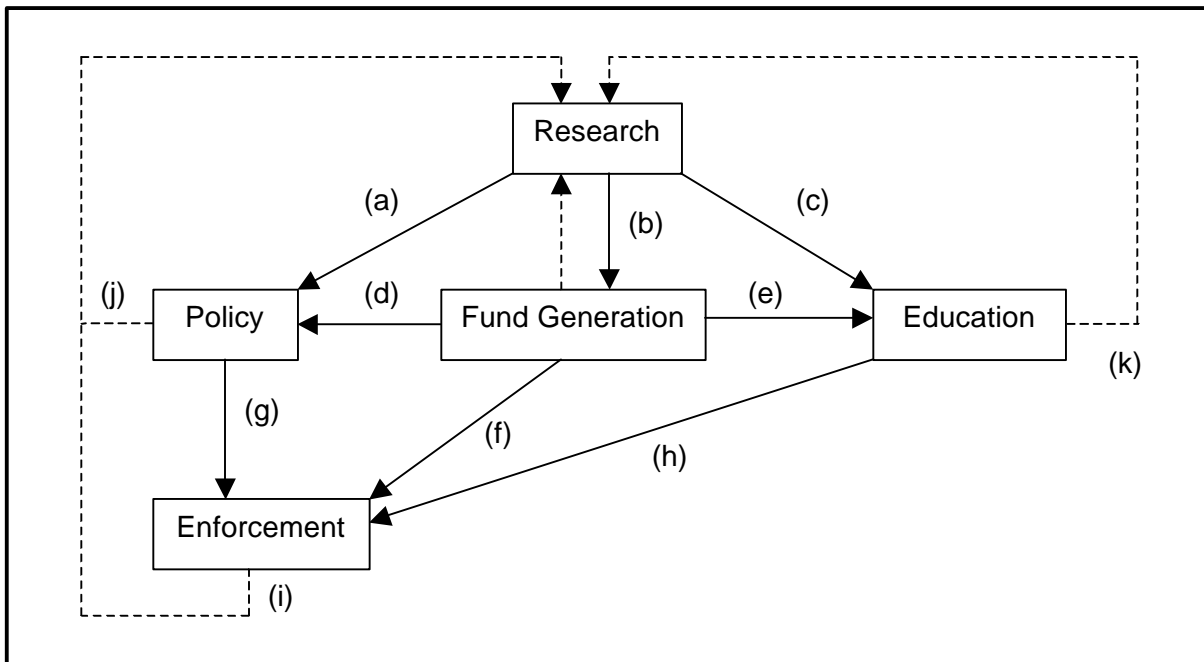
## 2.4 Relationship of Functions

It is important to note that for a more effective and efficient organization, it is imperative that the EMB not only perform each function well, but more importantly, that the five functions are well integrated. The synergy among the functions is a strategic objective for the EMB.

**Figure 2** shows the logical or ideal relationship of the various environmental management functions.

The figure underscores at least three important aspects: 1) the critical role of research, 2) the strategic importance of fund generation, and 3) the various functions determining the enforcement function. The critical role of research is manifested in three ways. One, it is an input to standard setting and policy formulation as shown by the solid arrow (a). Two, it is also related to fund generation. When EMB develops research proposals that are approved by donors, the activity results in fund generation (b). Three, research results are also used to educate the public, for instance, on pollution sources, air and water quality (c).

**Figure 2**  
**Ideal Relationship of the Various Functions**



In turn, fund generation in the Figure facilitates the formulation of policies emanating from research findings. It could also provide resources for IEC campaigns (e), as well as enhance enforcement activities (f). Policies, on the other hand, are implemented through enforcement activities (g). Finally, the education function enhances the enforcement functions since the enterprise, institution, and household sources of pollution, and the general public are made aware of the laws, policies and services of the EMB. The success of enforcement thus depends on appropriate, empirically-based policies, available fund or logistical support, and an informed, environmentally conscious community.

Interestingly, the dotted arrows show the feedback loops that lead back to research. The dotted lines indicate how research can address policy gaps, fund generation, education and enforcement. Since the feedback loops reflect the need to address gaps in policy, fund generation, education and enforcement, the relationships of the various functions indicated in **Figure 2** provide a perspective on the possible limitations of the EMB or the gaps in its performance.

### **3. HISTORICAL EVOLUTION OF EMB: GENERAL OBSERVATIONS**

The mandates and general functions of EMB have evolved from the time it was established in 1987 as one of six bureaus under the Office of the Secretary. Following are observations on the historical development of the EMB as gleaned from the evolution of its functions.

#### **3.1 As a Source of Technical Assistance and Advice**

From its inception up to the passage of the Clean Air Act in 1999, the Bureau was conceived to play an assisting or advisory role to the DENR, providing technical assistance and advice to the Office of the Secretary and the Regional Directors. The provision of technical assistance and advice seems to have been based more on the experience and stock knowledge of the EMB technical staff, who came from the defunct NPCC and NEPC, rather than on knowledge generated from past and ongoing research activities. Research in the Bureau has been formally confined to the substantive areas of effective means of pollution control and abatement. Moreover, its projects seem to have been limited to meagerly funded field data gathering activities and laboratory testing of water quality samples from the regional offices.

#### **3.2 With Limited Policy-Formulation, Education, and Enforcement Functions**

Without any clear, formally established and adequately funded research agenda, the Bureau has hardly been in a position to substantively contribute to policy formulation. Under EO 192, the role of the Bureau in policy formulation seems to have focused only on the development of effluent, stream, ambient and emission standards, promulgation of rules and regulations, procedures and other pertinent policies.

Its education function also seems to have been confined to the provision of information and the dissemination of annual or periodic environmental reports. The limited role of EMB in research, policy formulation, and education may be attributed partly to the established command and control regulatory mode of environmental management<sup>24</sup>.

As an advisory staff with limited research and policy formulation functions, the Bureau has understandably had a limited enforcement role. In time, the regional offices eventually undertook the operations and programs of the Department. The inspection-monitoring activities of the regional offices, the permit and penalty system, and the pollution adjudication process of the PAB were the means of enforcing environmental laws. The regional offices or PAB also tried to ensure environmental compliance mainly through regional negotiations, the imposition of fines and penalties, or the issuance of "cease and desist orders" (CDO). These mechanisms seem to have been the only

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<sup>24</sup> The "command-and-control" approach entails at least four governmental tasks. As defined, the four tasks are:

- a. the formulation of standards, rules and regulations;
- b. the issuance of the rules and regulations, including permits;
- c. the monitoring of compliance with such standards, rules and regulations; and
- d. the imposition of sanctions for non-compliance, or the application of other modes of enforcement.

available tools or instruments for effecting environmental management in general and compliance among the regulated communities, in particular. Only through the enunciation of other mandates at a later time did the scope of EMB functions increase and other tools for environmental management became available to the Bureau.

### 3.3 The Increasing Scope of EMB Functions after EO 192

RA 6969 of 1990 expanded the environmental responsibilities and tasks of the DENR and with it, the EMB. The Act made it imperative for the agency to explicitly undertake more information generation and research activities for the purpose of policy formulation and the conduct of education awareness campaigns. Both laboratory analysis and field researches, for instance, are necessary to determine the toxicity of chemicals and their effects on human health and the environment. With regards to enforcement, the regional offices were also to be directly involved in field enforcement activities, such as inspection, monitoring, stoppage of vehicles suspected of transporting hazardous waste, and confiscation.

While RA 6969 of 1990 extended and enlarged the traditional regulatory functions of EMB, the Clean Air Act of 1999 (RA 8749) further expanded the Bureau's mandate. It mandated the application and strengthening of traditional approaches in air quality management. More importantly, it introduced new approaches, such as air shed management, emission charges, trading of emission rights, and public disclosure. The implementation of a much broader mandate, however, requires the reorganization of EMB as a line bureau with a larger budget and personnel staff. The transition toward this end has yet to be completed.

**Table 1** illustrates the number of EMB personnel at the central and regional offices that perform the functions of enforcement, policy-formulation and planning, research, education and fund generation in fulfillment of the five legal mandates of EMB. It also shows that there are personnel that perform functions across mandates. These personnel are those at the management level, e.g., the EMB Director, Assistant Director and the Regional Directors, the offices of the chief of the Environmental Quality Division, research and development, management information systems, planning and management, administrative, legal, environmental education and information and work done by EMB staff assigned to the provincial and community environment and natural resources offices. The purpose of **Table 1** is to highlight the distribution of EMB's human resources according to mandates and hence, to identify the mandate that comprises the bulk of EMB's workload. The table provides for double-counting since in the regional offices, often, one technical staff is assigned to perform functions covering more than one mandate. For example, one technical staff is assigned for RA 9003 and RA 6969 and at the same time, he or she performs planning functions such as the preparation of the work and financial plans.

An analysis of the percentage of the total personnel in the EMB performing the functions of the mandates shows that 16.85 percent or the most number of personnel are performing functions in fulfillment of PD 1586 or the EIS System. Hence, PD 1586 ranks number one among the mandates performed by EMB personnel. This is followed by administrative functions covering finance, accounting, personnel, records, property and



other support to the work of technical staff. The mandate with the third most number of personnel is assigned to is RA 8749 or Air Quality Management. This is followed by PD 984 and by research and development functions. Coordination of the mandates under the Environmental Quality Division (EQD) i.e., RA 6969, PD 984 and RA 8749 in the EMB C.O. and all mandates except PD 1586 in the EMB R.O., follows next. Table 1 also shows that the least number of personnel are assigned to perform the functions of environmental education and information, planning and management, work in the provincial and community environment and natural resources offices (PENR and CENR offices), legal work, management information systems and special projects. The reason for this is that there are no regular positions to perform these functions in the regional offices. The EMB R.O.s also seldom have special projects wherein they could hire contractual personnel. In the EMB C.O., except for the environmental education and information division, there are no regular positions specifically for the planning and management staff and the management information systems office.

In strengthening the role of DENR and giving it greater responsibilities, RA 8749 added to EMB's tasks. Apart from the traditional standard setting, ambient monitoring, minimum fuel quality assurance, source specific permitting and enforcement, the Act mandates the development of an Integrated Air Quality Improvement Framework and an Air Quality Control Action Plan. Each year, the DENR through the EMB, is expected to prepare a National Air Quality Status Report. Furthermore, in an effort to be more specific and comprehensive than its regulatory precursors in matters relating to the control of mobile sources, the Act places additional responsibilities on the DOTC, MMDA, and LGUs. This means that the EMB is compelled not only to perform entirely new functions but also to guide and coordinate with other agencies, adding to the burden of the Bureau's relatively weak air quality monitoring system.

**Table 1**  
**Number of EMB Personnel per Legal Mandate**  
**Environmental Management Bureau, 2002**

Mandate	Total No. of Personnel in C.O. and R.O. Performing Functions of Mandates	% of Total Personnel in C.O. and R.O. Performing Functions of Mandates	Rank of Mandate According to Personnel Performing Functions
RA 8749 Air Quality Management, MMAQISDP	94	10.35%	3
PD 984 Water Quality Management Section and Pollution Adjudication Board Secretariat	92	10.13%	4
RA 6969 Toxic Chemicals and Hazardous Waste Management	56	6.17%	8

<b>Mandate</b>	<b>Total No. of Personnel in C.O. and R.O. Performing Functions of Mandates</b>	<b>% of Total Personnel in C.O. and R.O. Performing Functions of Mandates</b>	<b>Rank of Mandate According to Personnel Performing Functions</b>
PD 1586 Environmental Impact Assessment	153	16.85%	1
RA 9003 Ecological Solid Waste Management	58	6.39%	7
Special Projects: Montreal Protocol Commitments- Ozone Desk	9	0.99%	15
Across Mandates			
Office of the Director, Assistant Director and Regional Directors	53	5.84%	9
Office of the EQD Chief – Coordination of mandates under EQD	59	6.50%	6
Research and Development (Laboratory Services)	68	7.49%	5
Management Information Systems	11	1.21%	14
Planning and Management	35	3.85%	11
Administrative: Finance, Accounting, Personnel, Records, Property, Support to Technical Staff	126	13.88%	2
Legal	19	2.09%	13
Environmental Education and Information	42	4.63%	10
Staff in the PENR & CENR offices - assist the RO	33	3.63%	12
Total No. of Staff Performing Functions of the Mandates	908	100.00%	

Source: EMB C.O. and R.O.s

\* Includes regular, casual and contractual employees.

The broadening of the DENR's mandate did not stop with RA 8749. RA 9003 further expanded the Department's environmental responsibilities by mandating it to oversee the implementation of a national integrated solid waste management program as head of the newly created National Solid Waste Management Commission (previously only a presidential task force body). The law also assigned the Director of the EMB as head the National Ecology Center, a unit tasked with providing consulting, information, training and networking services on solid waste management. Moreover, the responsibility of

giving technical assistance to local government units (LGUs) in terms of the three R's of solid waste management, i.e., reduce, re-use and recycle now falls on the DENR.

It is important to note that while solid waste management has traditionally been the concern of LGUs, the expanded role of the DENR in this sector is the result of increased public awareness of the negative effects of improper solid waste management practices on human health. In this respect, the enforcement, research and the IEC components of the national ecological solid waste management program are the critical tasks assigned to the DENR in the light of RA 9003. These new tasks suggest the need to upgrade existing staff and recruit new personnel to attend to various aspects of integrated solid waste management.

### **3.4 The Organization of DENR, the Pollution Adjudication Board (PAB) and EMB**

The DENR was established to manage both the country's natural resources and environment, and its organizational structure<sup>25</sup> (**Appendix C**), has four levels namely, (1) Central Office, (2) Staff Sectoral Bureaus, (3) Operational Level and (4) Attached Agencies. The EMB is one of the components under the Staff Sectoral Bureaus.

The DENR has both a developmental and a conservation function in the natural resource sector that is implemented through resource use programs and regulatory policies. Its organizational structure assigns the responsibility of managing the sector to particular bureaus like the Forest Management Bureau (FMB), Lands Management Bureau (LMB), Mines and Geosciences Bureau (MGB), and the Protected Areas and Wildlife Bureau (PAWB). It seems from the department's perspective that the "environment" is akin to a "sector" over which the EMB has sectoral jurisdiction.<sup>26</sup>

For this sector, EMB's vision is to have

**"a country that enjoys a clean, healthy, sustainable environment that enhances the quality of life for current and future generations, and protects our diverse natural resources".**

Its mission is defined accordingly:

**"To restore, protect and enhance the environment; and to ensure public health, environmental quality and economic vitality".**

Within the given structure, however, some bureaus are more equal than others. Possibly reflecting the resource development orientation of the government, the bulk of the DENR

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<sup>25</sup> Source: World Bank Project: Capacity Building in Social and Environmental Assessment, Resettlement and Indigenous Peoples. *Pre-orientation on the DENR's Organizational Structure and Functions*. June 20, 2000. Prepared by the Environmental Assessment Team.

<sup>26</sup> Similarly, the Ecosystems Research and Development Bureau (ERDB) is also an agency in charge of a sector but with more of a research function than a management one.

budget (78 percent) goes to the FMB and LMB. (see **Appendix D**) Also, in terms of appropriation for personnel services, the MGB has a personnel complement 3 times bigger than that of EMB while LMB and FMB respectively have a complement that is five and nine times bigger, respectively, than the size of EMB (see **Appendix E**).

In implementing its environmental protection mandate, the EMB has mainly relied upon its historically given environmental management approach. In the command and control mode, EMB has monitored the compliance of industry and other pollution sources to the set environmental standards for air and water quality, with violation of such standards resulting in a pollution adjudication process that would entail the payment of fines or closure orders<sup>27</sup> until the implementation of a remediation plan. Overtime, the growing problem of environmental pollution has strained EMB's enforcement capacity and the pollution adjudication process as reflected in the increasing number of cases docketed at the PAB<sup>28</sup>.

If carried out mainly in the traditional mode, the new mandates given to EMB would entail more inspection-monitoring activities covering air quality sampling stations in attainment and non-attainment areas, landfills, and hazardous waste generators or treatment-storage-disposal (TSD) facilities. The already overloaded monitoring and work-intensive secretariat support to the Pollution Adjudication Board of the Bureau would thus be subjected to an even heavier workload. If greater enforcement capacity and new environmental management approaches are not available, the existing resources, organizational and regulatory structure, and secretariat support to the pollution adjudication process of the PAB both at the central office and regional level would not be able to meet EMB's expanded responsibilities.

### 3.5 The Growth of Inter-agency Relations

The coordination function of EMB in EO 192 was articulated in terms of its power to "consult, participate, cooperate and enter into agreement with other government agencies, and with affected political groups, political subdivisions, and enterprises in the furtherance of the purpose of the decree." Inter-agency relations specifically entailed the creation of inter-agency committees for the preparation of the State of the Philippine Environmental Report, and consultation with the Philippine Coast Guard on the appropriate rules and regulations for marine pollution. Since EO 192, EMB's coordinative function has been further extended in the various environmental laws after 1987. For instance, the concern expressed in RA 6969 for the toxicity of chemical substances and the unreasonable risk and injury they present to human health and the environment, suggests collaboration with health authorities and scientific research organizations. Similarly, the enforcement activities to monitor the generation, transport, use and

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<sup>27</sup> Though the PAB has been viewed as a critical instrument for environmental compliance with technical expertise in determining pollution cases, the authority to issue CDO and *ex parte* CDO has been affirmed and recognized by the Philippine Supreme Court.

<sup>28</sup> From 1989 to 2001 the number of cases has cumulatively grown from 79 to 690. If 611 new cases were taken up during the period, 4 cases on the average must be deliberated upon and resolved within a month in order not to avoid a backlog of cases. (REECS. 2002. *The Legal Framework and Organizational Structure for Environmental Management in the Philippines*. In SEECCTA Second Progress Report).

recycling of toxic and hazardous waste, if not their apprehension, entail the assistance of customs and port authorities, police, and other law enforcement agencies. The local government and other government agencies, as well as civil society and the private sector are likewise involved in the implementation of RA 8749 and RA 9003. In particular, RA 9003 seeks to “institutionalize public participation in the development and implementation of national and local integrated, comprehensive and ecological waste management programs.”

Apart from its usual policy formulation and enforcement functions, EMB is envisioned in the new mandates to network, collaborate, build alliances, and work with other agencies and groups in the management of air quality, toxic and solid waste, or the environment in general. Through these inter-agency relations, the Bureau is able to expand the coverage and breadth of its monitoring, policy formulation, and regulatory environmental management functions. Specifically, the EMB-CO is a member in at least 84 interagency committees. In other words, while the EMB or DENR are primarily responsible for initiating implementation and realizing the objectives of the new mandates, there is growing awareness that environmental management is a shared concern and a joint enterprise of other national agencies, local governments, and civil society groups in general.

## 4. ASSESSMENT OF THE EMB'S CURRENT HUMAN RESOURCES

Prior to an assessment of the performance of EMB, it is necessary to discuss the profile of its current human resources. A discussion of the quantitative and qualitative profile of EMB's human resources at the central (CO) and regional offices (RO) would indicate their current capacity to perform the various environmental management functions. It would also show the strengths and weaknesses of the bureau's human resources. Such findings, together with the identified gaps EMB faces, would provide a basis for the Human Resource Development strategy it must formulate and undertake.

### 4.1 Authorized Positions

As of March 31, 2003, the EMB Central Office and Regional Offices have 558 positions authorized by the Department of Budget and Management. The 1014 EMB personnel in **Table 1** include the casuals and those detailed from other DENR units. Of the authorized positions in EMB, 540 positions or about 97 percent of the total number of authorized positions have already been filled. Of the 18 unfilled positions, 10 are in the EMB Central Office (**Appendix F1**).

### 4.2 Human Resources According to Position Level

**Table 2** shows the EMB's human resources according to position level. In general, the first level positions are those with salary grades 1 to 9. The first level positions comprise clerks, drivers, engineering aides and other positions, and those with a sub-professional eligibility from the Civil Service Commission (CSC). With salary grades of 10 to 24, the second level positions consist of those with professional eligibility from the CSC or licenses to practice one's profession from the Professional Regulation Commission (PRC), such as engineers, accountants and other specialists. Third level positions are those with salary grades of 25 and above, and they include the Assistant Director (Director III) and the Bureau Director (Director IV). The positions of the EMB Regional Directors (Director III) have not yet been included in the total number of authorized positions since the issue on whether these positions belong to the EMB or to the Parks and Wildlife Bureau (PAWB) is still under clarification. This issue arose because prior to EMB's conversion to a line bureau in 1999, the EMB regional offices were called the Environmental Management and Protected Areas Services (EMPAS). They had two regular divisions and one interim division. These were the Environmental Quality Division and the Environmental Impact Assessment Division (which performed EMB functions) and the Protected Areas and Wildlife Division (which performed PAWB functions). The EMB has included new EMB Regional Director positions in its proposed staffing pattern as a line bureau to the Department of Budget of Management. The approval of the proposed staffing pattern would depend on several factors such as the economic condition of the country, the importance and urgency of environmental concerns in the executive and legislative agenda and the presence of lobbyists, environmental policy communities and policy entrepreneurs.

**Table 2**  
**DENR-EMB Human Resources According to Position Level**  
**As of March 31, 2003**

Office	Position Level			Total	% in Second Level
	First	Second	Third		
Central Office	52	104	2	158	65.82
NCR	61	48	0	109	44.04
Region 1	4	11	0	15	73.33
CAR	2	26	1	29	89.66
Region 2	2	9	0	11	81.82
Region 3	2	29	0	31	93.55
Region 4	20	23	0	43	53.49
Region 5	4	16	0	20	80.00
Region 6	4	15	0	19	78.95
Region 7	5	15	0	20	75.00
Region 8	2	13	0	15	86.67
Region 9	3	8	0	11	72.73
Region 10	3	15	0	18	83.33
Region 11	4	21	0	25	84.00
Region 12	2	8	0	10	80.00
Region 13	0	6	0	6	100.00
<b>TOTAL</b>	<b>170</b>	<b>367</b>	<b>3</b>	<b>540</b>	<b>67.96</b>
<b>Ave. for the Regions</b>	<b>8</b>	<b>18</b>	<b>0</b>	<b>25</b>	<b>68.85</b>
<b>Ave. for the Regions except NCR</b>	<b>4</b>	<b>15</b>	<b>0</b>	<b>20</b>	<b>78.75</b>

Data Source: DENR-EMB Administrative Division  
Prepared by: Naz, C. 2003.

Almost two-thirds or 65.82 percent of the human resources of the EMB Central Office occupy second level positions, i.e., those considered to be professional and technical positions. This means that about one-third of the staff occupy first level or support staff positions. In the National Capital Region (NCR) or in Metro Manila, there are more personnel occupying first level positions than second level positions. Only 44.04 percent of the NCR personnel occupy second level positions. The average figure for the regional offices is that, for every two employees occupying second level positions, there is one employee occupying a first level position. Excluding NCR, the average figure for the regional offices is for every four employees occupying second level positions, there is one employee occupying a first level position. This means that 68.85 percent of the total personnel occupy second level positions. The average for the regions excluding the NCR is that 78.75 percent of the personnel occupy second level positions. This means that about 21 percent of the regional personnel occupy first level or support staff positions.

The EMB's authorized positions according to position level were provided by the DBM based on Executive Order 192. At that time, the EMB was created as a staff bureau of

the DENR. The first level or support personnel in the EMB central office only performed administrative and related tasks for C.O. operations. At the regional level, the first level personnel and the administrative staff of the DENR regional office performed the administrative tasks for the different staff bureaus, including the EMB regional office, then called the Environment and Protected Areas Services. However, with the conversion of the EMB from a staff to a line bureau, the EMB regional offices would have to develop the capacity to perform administrative tasks formerly performed by the personnel, budget, accounting, cashier, planning, regional information and public affairs and legal offices of the DENR ROs.

### **4.3 Human Resources According to Status of Appointment**

**Appendix F2** shows the EMB Central Office and Regional Offices have a total human resource contingent of 632 personnel. These comprise 540 regular employees, 39 casuals and 53 contractual employees. Regular employees occupy positions authorized by the Department of Budget and Management. Temporary employees are those that lack the necessary eligibility, e.g., passing a professional regulation licensure exam for the position they occupy. They are appointed for one year, within which they are expected to obtain their eligibility and then, they are given their permanent appointment. However, if they are still unable to obtain their eligibility, they are renewed for another year. Co-terminus regular employees in the EMB are those whose positions are co-terminus with the incumbent. This means that if the holder of the position gets separated from the EMB, his position is abolished. Casual employees do not enjoy permanent status but they are in the plantilla. This means that the EMB regular budget has an authorized allocation for the casual positions. The services they render are counted as “years of service” in government, provided these are accredited by the Civil Service Commission. This is an asset when they apply for permanent positions and for government social security benefits. The CSC reviews the appointments of regular and casual personnel.

Contractual personnel are of two types. The first type of contractuales are personnel charged to expense class “object 29”. This is a lump sum for contractual services like security, janitorial, consultancy and other services where no employer-employee relationship exists between the individual or the institution and the government (EMB). Their contracts are subject to the availability of funds, hence, they do not enjoy security of tenure. Their contracts are renewed on a periodic basis, e.g., every three to six months depending on the type and duration of services they render. The other type of contractual personnel are those hired for a certain special project. The duration of their contracts depend on the type of services they render and on the length of the project. The Civil Service Commission issued Memorandum Circular No. 17, series of 2002 requiring all government agencies to submit the contract of services for review of their CSC Regional Offices. While this policy aims to ensure that the right persons are hired by an agency and to put some checks and balances on nepotism, it has added bureaucratic red tape to the recruitment process of EMB and other government agencies. This is rather critical since most of the contractual personnel of EMB perform key functions such as the design and operation of the management information system, review of Environmental Impact Assessment studies and handling of EIA cases, pollution adjudication and special projects. For example, out of the 12 personnel in the



Pollution Adjudication Board Secretariat, only four (4) of them are regular personnel. Eight of them are contractual personnel hired under EMB's special projects. Although they are assigned in the PAB, they draw their wages from these special projects. Hence, they do not enjoy security of tenure. Their work in the PAB would depend on the duration of the special projects and on the availability of funds.

Of the total EMB manpower, 34.18 percent are located in the central office. Of the total number of EMB regular personnel, 73.15 percent are located in the central office. Of the total number of casual and contractual personnel, 26.85 percent of them are employed in the Central Office. This is indicative of the huge workload at the EMB Central Office. The workload includes the regular functions under the five legal mandates plus the special and foreign-assisted projects at the EMB central office.

Among the regional offices, NCR has 119 employees or the most number of regular, casual and contractual employees. They comprise about 19 percent of the total number of employees of the EMB. Region 13, with seven staff, has the least number of employees among the EMB regional offices. On the average, each regional office has 25 regular personnel and two casual and contractual personnel.

#### **4.4 Human Resources According to Educational Attainment**

The Civil Service Commission requires a master's degree or a bachelor of laws (licensed lawyer) for a division chief with a salary grade 24 position, and a college degree with a professional eligibility for a second level position. However, since EMB personnel have tasks such as the development of environmental standards and the review of highly technical documents like environmental impact assessment studies, pollution control technologies proposed for use by a project, environmental management plans and proposed legislation, and since they deal with the preparers of these documents, who are usually recognized PhDs and lawyers, EMB staff find the necessity to pursue postgraduate studies. Further studies and trainings would provide the capacity and needed credibility for EMB staff to perform the functions of enforcement, research, policy and planning, education and fund generation and management.

**Appendix F3** shows the breakdown of EMB regular personnel according to educational attainment. Among the 540 regular personnel of EMB and its regional offices, there is only one employee (or 0.19 percent of the total personnel) with a doctoral degree. The employee is a Senior Environmental Management Specialist in the Apayao provincial office of the EMB Cordillera Administrative Region. He was formerly the Dean of the College of Forestry of the Apayao State College. His doctorate degree is in Public Administration. He had already obtained his doctorate degree when EMB hired him in year 2001. According to some DENR-CAR employees, the remote location of Apayao discouraged other regional personnel from applying for the position.

EMB has 11 regular personnel with doctoral units, 86 personnel with master's degrees (15.93 percent of the total personnel) and 149 personnel (or 27.59 percent of the total personnel) with master units. According to interviews with EMB Central Office staff, several factors have obstructed them from pursuing postgraduate studies. These are: (a) heavy workload and fieldwork; (b) lack of personnel that would do one's task while he or

she is on study leave; (c) EMB personnel are beyond the age requirements of most postgraduate scholarships and (d) the multi-disciplinary nature of environmental work cannot be captured in one PhD alone. Aside from these reasons, personnel from the regional offices expressed that there are no schools in the locality that offer postgraduate courses in environmental engineering, science or management. Hence, they have to contend with postgraduate courses like MBA, MPA or Master in Public Management, Development Administration and other social sciences courses.

**Appendix F4** shows the educational attainment of co-terminous, casual and contractual personnel in the EMB. It is necessary to examine the profile of these types of personnel since they are the first pool of human resources that the EMB would use to replenish its current permanent personnel, when they get separated from the service. This is particularly true during periods of attrition, i.e., when the national government declares a policy of the non-hiring of outsiders for government positions. This means that only existing government personnel, whether they regular, co-terminous, casual and contractual could be promoted to or hired for permanent positions during times of attrition. Only one of the co-terminous, casual and contractual personnel has a master's degree; he works in the central office. The bulk or 70.65 percent of these types of personnel are college graduates. Often, the technical personnel in this category receive training from EMB. There were some cases where these personnel are also sent to trainings outside of EMB. Hence, the EMB HRD strategy has also to take into account the contribution of these personnel to the growth of the agency and to the fulfilment of its mandates.

#### **4.5 Human Resources According to Length of Service**

A person's length of government service in the EMB is an indicator of the experience that he or she has gained in the course of the performance of his duties. Together with intellectual level, knowledge and personal values, experience is seen as an input index of institutional capability (Mangahas, J.V., 2002). The length of service of personnel in an agency is also indicative of the turnover rate, including mobility between the public and private sectors. It also provides an indication of the "personnel marketability or competitiveness" of EMB personnel if they decide to get separated from the service and join another government agency or the private sector.

**Appendix F5** shows the length of service of regular personnel of EMB. The average length of service of EMB personnel is 16 years. Personnel that have rendered 11 to 15 years of service comprise 30.87 percent. Personnel who have rendered service for 16 years and more comprise 49.35 percent of the total personnel. Only 9.06 percent of the regular personnel have rendered service of below five years. This situation is more prominent in the regional offices as shown in the first column of Table 6. This shows that the personnel turnover in EMB is relatively slow compared to other government agencies. According to a deputy director general of the National Economic and Development Authority (NEDA), when a 21 year old, fresh graduate gets employed in NEDA, by the time he is 26 or 27 years old, he gets pirated by the private sector, another government agency or a consulting firm. The figures in **Appendix F5** reveal that this is not the case with EMB.

**Appendix F6** shows the length of service of co-terminous, casuals and contractuels. It is expected that there would be greater turnover and mobility among this group. The average length of service of this type of personnel is five years. Among the 92 personnel in this group, 60 of them or 65.22 percent of the total have rendered service for less than five years. Even among this group, the turnover rate is still fair, considering that 40 out of the 60 personnel are employed in special projects in the central office.

#### 4.6 Human Resources According to Age

There is a correlation between the age and length of service of EMB personnel. **Table 3** shows the age of EMB regular employees. The average age of EMB personnel is 43 years old. Only 7.26 percent of the total EMB personnel are 21 to 30 years old. Most of these (28 out of 39 personnel) are in the EMB central office. This means that 92.74 percent of the total EMB personnel are 31 years old and above. This situation of an “ageing EMB” is more prominent in the regional office. Regions 1, 2, 3, 5, 6, 7, 9 and 13 or eight out of 15 regions only have personnel with ages 31 years old and above.

**Table 3**  
**DENR-EMB Human Resources According to Age of Regular Personnel**  
**As of March 31, 2003**

Office	21-30 years old	31-40 years old	41-50 years old	51-60 years old	Over 60 years old	TOTAL
Central Office	28	55	52	19	0	154
NCR	3	39	44	21	2	109
Region 1	0	4	10	1	0	15
CAR	1	16	13	0	0	30
Region 2	0	3	7	1	0	11
Region 3	0	4	21	5	1	31
Region 4	2	17	18	5	1	43
Region 5	0	8	10	2	0	20
Region 6	0	5	9	4	1	19
Region 7	0	2	14	4	0	20
Region 8	1	2	11	1	0	15
Region 9	0	4	6	1	0	11
Region 10	1	6	7	4	0	18
Region 11	1	5	14	5	0	25
Region 12	2	0	6	1	1	10
Region 13	0	0	4	2	0	6
<b>TOTAL</b>	<b>39</b>	<b>170</b>	<b>246</b>	<b>76</b>	<b>6</b>	<b>537</b>
<b>% of Total</b>	<b>7.26%</b>	<b>31.66%</b>	<b>45.81%</b>	<b>14.15%</b>	<b>1.12%</b>	<b>100.00%</b>
<b>Ave. No. of Personnel per Age Category</b>	<b>2</b>	<b>11</b>	<b>15</b>	<b>5</b>	<b>0</b>	
<b>Ave. Age</b>	<b>43</b>					

Data Source: DENR-EMB Administrative Division  
Prepared by: Naz, C. 2003.

This finding has several implications. First, in terms of scholarships and trainings, EMB personnel, due to their age, are unable to avail of scholarship and training opportunities.

For example, the Monbusho postgraduate scholarship of the Japan Ministry of Education sets 35 years old as the maximum age requirement. Hence, EMB personnel interested to pursue further studies and trainings would have to do these with their own finances and outside office hours. A second implication is that since there are very few regular personnel in the 21 to 30 year old age bracket, there is a scanty pool of new human resources endowed with knowledge of new techniques and methods to replace the older personnel when they retire or get separated from the service. A section chief in the EMB's research and development division (RDD) confirmed this. He said that most of the regular personnel in the research laboratory are in their 40's and 50's. It took time to train these personnel. When they retire, there would be no one as trained as them that would be able to take over their responsibilities. He said that even fresh graduates of chemistry and allied fields would rather work in the private sector than the EMB. This is largely due to the low salary of laboratory personnel in EMB compared to the private sector. As shown in the previous sections of the report, the RDD is the lead division in the conduct of environmental research. Thus, non-replenishment of the current highly trained and experienced RDD staff would weaken the resource base of EMB and its capability to perform its research function under its legal mandates.

**Table 4** shows the age of co-terminous, casuals and contractuels in EMB. It is expected that this group of personnel would provide a pool of human resources to replenish the regular personnel, when they get separated from the service. More than half (51.09 percent) of the total number of personnel in this group are 21 to 30 years old. However, 38 out of 47 or 80.85 percent of these are working in special projects in the central office. The rest are in the regional offices. Moreover, the average age of personnel in this group is 32 years old. This has similar implications with the findings of the age profile of the regular personnel.

**Table 4**  
**DENR-EMB Human Resources According to Age Category**  
**of Co-terminous, Casuals and Contractuals**  
**As of March 31, 2003**

Office	20 below	21-30 years old	31-40 years old	41-50 years old	51-60 years old	TOTAL
Central Office	1	38	14	4	1	58
NCR	0	5	4	1	0	10
Region 1	0	1	1	0	0	2
CAR	0	2	0	0	1	3
Region 2	0	0	1	2	0	3
Region 3	0	0	0	0	0	0
Region 4	0	1	3	0	0	4
Region 5	0	0	0	0	0	0
Region 6	0	0	0	0	0	0
Region 7	0	0	1	0	0	1
Region 8	0	0	1	1	0	2
Region 9	0	0	5	0	0	5
Region 10	0	0	0	0	0	0
Region 11	0	0	0	1	1	2
Region 12	0	0	1	0	0	1
Region 13	0	0	0	1	0	1
<b>TOTAL</b>	<b>1</b>	<b>47</b>	<b>31</b>	<b>10</b>	<b>3</b>	<b>92</b>
<b>% of Total</b>	<b>1.09%</b>	<b>51.09%</b>	<b>33.70%</b>	<b>10.87%</b>	<b>3.26%</b>	<b>100.00%</b>
<b>Ave. No. of Personnel per Age Category</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>	
<b>Ave. Age</b>	<b>32</b>					

Data Source: DENR-EMB Administrative Division  
Prepared by: Naz, C., 2003.

#### 4.7 Human Resources According to Gender

A disaggregation of human resources according to gender would show the gender-sensitivity of the EMB in terms of hiring and staffing. This is also in consonance with the EMB's commitments to the Philippine Plan for Gender and Development. A further disaggregation of the human resources according to position level, status of appointment, age and length of service would be needed to draw deeper conclusions and recommendations. Nonetheless, Appendix would provide some indication of the gender-sensitiveness of the hiring practices of the EMB.

**Appendix F7** shows the number of regular personnel of EMB according to gender. In general, there are more males (51.76 percent) than females (48.24 percent) in EMB. However, the difference is only 3.52 percent. Region 4 has the most number of females (53.49 percent) relative to males. Region 13 has only one female (16.67 percent) amidst five males. **Appendix F8** shows that there are also more male casual personnel (58.97 percent) than females (41.03 percent). **Appendix F9** shows the same trend, of more

male contractuels (54.72 percent) than females (45.28 percent). These three tables show that there is not much difference between the number of females and males in EMB.

## 5. ASSESSMENT

The various environmental laws EMB is mandated to implement specify various types of environmental management functions. They also contain a number of provisions that authorize or instruct EMB on what to do. These provisions are categorized as “directives” in this study. **Appendix G** specifies the various directives for each mandate.

**Table 5** shows that a total of 239 directives across all the five mandates. Key respondents within the EMB Central Office and some EMB regional office staff provided assistance in classifying these directives in terms of their environmental management function. While particular directives may entail more than one function, the respondents classified them under one function that seems to be the dominant underlying function based on their judgment, experience and perspective.

Among the five generic functions of EMB, enforcement has the most number of directives 87, followed by Policy with 73, Education with 36, and Fund Generation with 29. Research has the least number of directives with 14. This suggests that the bulk of EMB’s activities from its five legal mandates is primarily geared toward enforcement.

Given the mandate directives, some may not be undertaken while the rest are implemented with some measure of success or failure. If a directive is not undertaken, then an absolute gap exists. If implemented with unsatisfactory results, there is a relative or qualitative gap.

In order to assess the performance of EMB, this section discusses both the absolute and qualitative gaps, and accounts for their existence. While some gaps may be due to internal inadequacies, like the lack of guidelines, personnel, capability, other resources, other gaps may be due to factors outside of the bureau.

### 5.1 Absolute Gaps<sup>29</sup>

An initial assessment of EMB performance requires information on the extent the Bureau has undertaken all the mandated activities or whether there are mandated directives with very little or no activity as yet. Directives are defined to have an absolute gap if EMB has not undertaken any activity at all along a particular objective. **Table 5** shows that out of the total 239 directives, 50 directives have not yet been operationalized. These gaps comprise about 21 percent of its mandated activities.

The third column in **Table 5** shows the number of gaps per function. These gaps represent how much more work EMB has to do to fulfill each particular function. The Enforcement function has the most number of gaps 15, followed by Fund Generation with 13 gaps, Policy Formulation with 11 gaps and Education with 7. The Research function has the least number of gaps.

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<sup>29</sup> The list of resource persons interviewed for purposes of identifying the absolute gaps is shown in **Appendix H**.

The fourth column gives the proportion of gaps with respect to the number of directives associated with a particular function. This suggests the relative importance of expending efforts to address the gaps for a particular function. For instance, while the enforcement function with 15 directives has more gaps compared to research with 4, there is a significantly larger proportion of unfulfilled directives under research (29 percent) compared to the unfulfilled percentage of enforcement directives (17 percent). Based on the percentage of directives with gaps, fund generation and management have the largest proportion of unfulfilled directives (45 percent) followed by research (29 percent).

The last column shows the percentage of function-related gaps with respect to the total number of unfulfilled directives. It gives a ranking of the various functions. Enforcement with 30 percent has the highest percentage of gaps to the total number of gaps, followed by fund generation (26 percent), policy and planning (22 percent), education (14 percent), and research (8 percent). Based either on the number of gaps per function and the total number of gaps, these two rankings provide an index for determining the EMB's functions that need to be strengthened and prioritized.

**Table 5**  
**Over-all Summary of Directives and Gaps per Function**  
**Environmental Management Bureau**

Functions	No. of Directives	No. of Directives without Activities (GAPS)	Percentage of Directives with Gaps	Percentage of the Functional Gaps with respect to the Total No. of Gaps
Enforcement	87	15	17%	30%
Policy and Planning	73	11	15%	22%
Education	36	7	19%	14%
Fund Generation and Management	29	13	45%	26%
Research	14	4	29%	8%
<b>TOTAL</b>	<b>239</b>	<b>50</b>	<b>21%</b>	<b>100%</b>

Prepared by: Naz, C. and Velarde, F., 2003.

**Tables 6a to 6e** provide a listing of the gaps in each function by mandate. For instance, out of the 15 gaps in enforcement, there are 2 unfulfilled directives related to the PAB and 1 unfulfilled directive on water quality management under PD 984, 11 under RA 8749 (CAA) and 1 unfulfilled directive under RA 9003 (Ecological Solid Waste Management Act). While there are some gaps under PD 984 and RA 6969, most of the gaps in EMB's directives are found in the implementation of RA 8749 of 1999 and RA 9003 of 2000. This is understandable because of the recent passage of these two laws. The prospective passage of the Clean Water Act may likewise entail additional directives that EMB will have to fulfill.



**Table 6a**  
**Gaps in Enforcement Function by Mandate**  
**Environmental Management Bureau**

<b>Mandate</b>	<b>Absolute Gaps</b>
PD 984	PAB Directives: <ol style="list-style-type: none"> <li>1. Serve as arbitrator for the determination of reparations, or restitution of the damages and losses resulting from pollution (Valuation of Damages)*</li> <li>2. Deputize in writing or request assistance of appropriate government agencies or instrumentalities for the purpose of enforcing this Decree and its implementing rules &amp; regulations and the orders and decisions of the Commission</li> </ol> Water Quality Management <ol style="list-style-type: none"> <li>1. Decisions on the classification of the remaining principal rivers, the “hotspots”, and the re-classification of waterbodies; likewise, clarification on the issuances of permits for the discharge of sewage or installation or operation of sewage works</li> </ol>
RA 8749	<ol style="list-style-type: none"> <li>1. Management of Non-Attainment Areas - For non-attainment areas, the DENR shall prepare and implement a program that will prohibit new sources of exceeded air pollutant without a corresponding reduction in existing sources.</li> <li>2. Pollution Control for In-Use Motor Vehicles - Supervise the emission test for type approval by the DOTC/LTO*</li> <li>3. Pollution Control for In-Use Motor Vehicles - The facility where the tests will be conducted shall be chosen by the DENR utilizing the motor vehicle type approval system testing center of the DOTC/LTO.*</li> <li>4. Visitorial Powers - It shall also have visitorial powers over the LTO Motor Vehicle Inspection Station and Vehicle Type Approval System Testing Center where these tests are carried out*</li> <li>5. Grounds for Modification of Permit Conditions – after due notice and public hearing, the DENR -EMB may modify any existing and valid permit by imposing new and additional conditions, provided that the permittee is given reasonable time to comply with such new or additional conditions.</li> <li>6. Non-Compliance of Stationary Sources - Review and approval/non-approval of compliance plan of sources not in compliance</li> <li>7. Consent Agreement with Violator – DENR through PAB may reduce penalties or fines to be imposed upon stationary sources proven to exceed the emission rate requirements of its Permit to Operate or of these IRRs, provided that the person or party responsible for the source enters into a consent agreement with the Bureau</li> <li>8. Proof of an Environmental Management System – Require, review and approve/disapprove proof of an approved EMS shall be in the form of an EMS audit report prepared internally by the person or party responsible for the facility, or one prepared by a third party EMS auditor.*</li> <li>9. Emission Offsets - Review, approve/disapprove proposed emission offsets in existing actual emission within the non-attainment area in a ratio of 1:1.2 to the POTENTIAL emission level of the proposed new or modified source*</li> <li>10. Emission Quotas - The DENR may allow each regional industrial center that is designated as special airshed to allocate emission quotas to pollution sources within its jurisdiction that qualify under an EIA system programmatic compliance program of PD 1586 IRR*</li> <li>11. Air Quality Action Plan of LGUs - The DENR shall have the power to closely supervise all or parts of the air quality action plan of LGU's until such time the local government unit concerned can assume the function to enforce the</li> </ol>

<b>Mandate</b>	<b>Absolute Gaps</b>
	standards set by DENR
RA 9003	
NEC	1. Act as clearinghouse for cleaner production/cleaner technologies on solid waste management*

Prepared by: Naz, C. and Velarde, F., 2003.

\*Requires capability building and trainings.

**Table 6b**  
**Gaps in Policy Formulation and Planning Function by Mandate**  
**Environmental Management Bureau**

<b>Mandate</b>	<b>Absolute Gaps</b>
RA 8749	<ol style="list-style-type: none"> <li>1. Air Quality Control Action Plan Multi-Sectoral Monitoring Team - The DENR shall convene a multi-sectoral monitoring team with broad public representation for each LGU to conduct periodic inspections of air pollution sources to assess compliance with the emission limitations contained in their permits.</li> <li>2. Use of LAER - Approve the use of lowest achievable emission rate control technologies on a case-by-case basis The Department through the Bureau, shall review &amp; approve the regional industrial center (designated as a special airshed) allocation of emission quotas to pollution sources within its jurisdiction that qualify under an EIA programmatic compliance program pursuant to the IRR of PD 1586.*</li> <li>3. Design of Emission Averaging and Emission Trading (Rule XXI and XXII of CAA-IRR)*</li> <li>4. Harmonization with International Standards for Stationary Sources - In the review and revision of emission standards, the EMB shall, as appropriate, endeavour to achieve the harmonization of national emissions standards with those set by regional bodies such as the Association of South East Asian Nations (ASEAN)*</li> <li>5. Air Quality Control Techniques - Issue, and from time to time, revise information on air pollution control techniques.*</li> <li>6. National Programs on Reduction and Elimination of POPs - Pursuant to Section 32 of the Act, the Bureau shall, within one (1) year after the establishment of the inventory list referred to in the preceding section, design and implement a national government program on the reduction &amp; elimination of POPs such as dioxins and furans.*</li> <li>7. Linkage with Coordinative Multi-Sectoral Body - The Bureau shall study the creation of a multisectoral commission headed by the Secretary of the DENR and composed of representatives from the following sectors: <ol style="list-style-type: none"> <li>a. government agencies involved in the task of air pollution control and management,</li> <li>b. civil society,</li> <li>c. business,</li> <li>d. and other concerned sectors. The commission shall serve as an oversight body to ensure the systematic and effective management of air quality</li> </ol> </li> </ol>
RA 9003	
NSWMC	<ol style="list-style-type: none"> <li>1. Develop safety nets &amp; alternative livelihood programs for small recyclers and other sectors that will be affected as a result of the construction and/or operation of a solid waste management recycling plant or facility*</li> <li>2. Together with the National Ecology Center, the DTI and the Department of Finance establish procedures, standards and strategies to market recyclable</li> </ol>

	materials and develop the local market for recycled goods (Sec. 31, RA 9003)*; 3. Formulate a set of standards for innovativeness, proactivity, exemplary and outstanding SWM endeavors (criteria for incentives and rewards)
DENR	1. Recommend policies to eliminate barriers to waste reduction programs*;

Prepared by: Naz, C. and Velarde, F., 2003.

\*Requires capability building and trainings.

**Table 6c**  
**Gaps in Research Function by Mandate**  
**Environmental Management Bureau**

Mandate	Absolute Gaps
RA 9003	
DENR	1. Establish methods and other parameters for the measurement of waste reduction, collection and disposal*; 2. Spearhead the setting of standards for leachate.* 3. Study on factors for success/failure of community-based waste management initiatives. 4. Undertake researches on economic instruments in solid waste management.*

Prepared by: Naz, C. and Velarde, F., 2003.

\*Requires capability building and trainings.

**Table 6d**  
**Gaps in Education Function by Mandate**  
**Environmental Management Bureau**

Mandate	Absolute Gaps
RA 8749	1. Air Quality Monitoring and Information Network - The DENR in cooperation with the NSCB, shall design and develop an information network for data storage, retrieval and exchange.* 2. Ambient Air Monitoring Network - Within two (2) years from the effectivity of these Rules, design and establish an Ambient Air Monitoring Network for the assessment of ambient air quality. The Ambient Air Monitoring Network shall be expanded gradually to cover the entire country*
RA 9003	
NSWMC	1. Encourage private sector initiatives, community participation and investments resource recovery-based livelihood programs for local communities;
DENR	1. In cooperation with the DOH, DILG and other concerned agencies, publish an inventory of solid waste disposal facilities or sites in the country (Sec. 36, RA 9003);
NEC	1. Formulation of training program for deputized enforcers and implementers; 2. Development of an accreditation and certification system for the conduct and holding of training programs on solid waste management; and 3. Promote the development of a recycling market through the establishment of a national recycling network that will enhance the opportunity for recycling*;

Prepared by: Naz, C. and Velarde, F., 2003.

\*Requires capability building and trainings.

**Table 6e**  
**Gaps in Fund Generation and Management Function by Mandates**  
**Environmental Management Bureau**

Mandate	Absolute Gaps
RA 6969	<ol style="list-style-type: none"> <li>1. RA 6969 Special Fund – While the administrative fines imposed and collected by the DENR accrues to a special fund to be administered by the DENR exclusively for projects and activities related to toxic substances and mixtures, the fund has not yet been utilized.</li> </ol>
RA 8749	<ol style="list-style-type: none"> <li>1. Penalty and Fine Surcharge - Sources subject to the non-attainment provisions will be subject to a 100% surcharge (i.e., 200% of base) for any penalties or fines relating to a violation of the non-attainment provisions.</li> <li>2. Failure to comply with Consent Agreement – Subject the facility owner to the reimposition of the original penalty (subject of the reduction) as well as additional appropriate penalties computed on a daily basis pursuant to Section 45 of the Act.*</li> <li>3. Decision-making on the Use of AQMF - The Department will formulate business standards, which will describe the scrutiny mechanisms of proposals as well as maximum response times.</li> <li>4. Decision-making on the Use of AQMF - The DENR will ensure the publication of an Annual Report which specifies income and expenditure of the AQMF, together with a summary of initiatives supported and refused. This Annual Report will be available within 2 months after the end of the fiscal year.</li> <li>5. Emission Charge System - The DENR, in case of industrial dischargers, shall, based on environmental techniques, design, impose on and collect regular emission fees from said dischargers as part of the emission permitting system.*</li> <li>6. Emission Trading - Reviews, approves/disapproves emissions trading among pollution sources within an airshed*</li> <li>7. Emission Trading - The Bureau shall approve the Compliance Plan &amp; application of emission trading for facility owners wishing to use emission trading for compliance purposes*</li> <li>8. Emission Trading - The Bureau shall approve CEMS for the pollutants to which emission trading is being applied. The continuous emission monitoring system must be installed on each source that is being used to generate the emission reduction credits.</li> <li>9. Financial Liability for Environmental Rehabilitation - As part of the EMP attached to the ECC pursuant to PD 1586, the DENR shall require program &amp; project proponents to put up financial guarantee mechanisms to finance the needs for emergency response, clean-up or rehabilitation of areas that may be damaged during the program or project's implementation. The choice of the guarantee instrument or combination thereof shall depend, on the assessment of the risks involved.*</li> <li>10. Financial Guarantee Mechanisms - The Bureau may promulgate guidelines for the effective implementation of said financial guarantee mechanisms attached to the EMP of an ECC*</li> </ol>
RA 9003	
NSWMC	<ol style="list-style-type: none"> <li>1. Administer the Solid Waste Management Fund*;</li> <li>2. Prescribe the procedure and proforma for fund application (criteria for availment of fund) of the SWM Fund.*</li> </ol>

Prepared by: Naz, C. and Velarde, F., 2003.

\*Requires capability building and trainings.

## **5.2 Gaps in Each Mandate, by Function**

This section discusses the various identified absolute gaps in each mandate by function. It merely expounds on the meaning of each gap without attempting to provide solutions. The Strategic Plan in Report No. 1B will discuss in detail how to address each absolute gap in terms of the available strategic options.

### **5.2.1 Gaps in Enforcement**

Given the above absolute gaps, the EMB has to operationalize the enforcement directives in the following mandates and functions. The gaps in the enforcement function lie in the implementation of PD 984, RA 8749 and RA 9003, and they are as follows:

#### **PD 984 – Water Quality Management and RA 8749 (Air Quality Management)**

The primary gaps are in the enforcement activities of the Pollution Adjudication Board (PAB), and they are the following:

*(1) The PAB shall serve as arbitrator for the determination of reparations, or restitution of the damages and losses resulting from pollution. (PD 984)*

The PAB has not served as an arbitrator possibly because together with regional enforcers, it has resorted to fines or closure orders in dealing with pollution damages to property, environment, or human health. Complainants also may not have the information or the counsel to support demands for reparation or restitution of damages. Or they may have sought recourse through the local courts.

The Bolinao oil spill case below demonstrates the need for restitution by the affected communities, arbitration of the conflicting claims and estimated damages, and a resolution of the case that the local court seems unable to provide. There is therefore a need for an alternative venue and resolution of differences between two unequal parties.

If the PAB can serve as that venue to arbitrate between conflicting parties with divergent estimates of damages, there is need for capacity building within the PAB, regional EMB personnel, and civil society. Specifically, there must be an appreciation and a learning of the perspective and skill for the valuation of environmental and natural resource damages, and the conduct of health risk assessment.

At present, the PAB Secretariat does not have the skills, capability and resources to conduct environment and natural resources valuation and risk assessment studies. Nor is this within the research mandate of the Research and Development Division. The Marinduque Mining damages case illustrates the results of field research in determining the cost of the damages to livelihood and the environment. It shows that the methodology for estimating damages is available. What is lacking is the institution where victims of pollution can seek restitution.

**Case Study No. 1**  
**THE OIL SPILL INCIDENT IN BOLINAO, PHILIPPINES:**  
**Damages, Conflict Resolution and Power Analysis**

On its way to deliver coal to the Sual Power Plant, MV Nol Schedar, a Singaporean cargo vessel, run aground the Bolinao's Pudoc reef. Allegedly, this event led into an oil spill of some 10,000 liters of bunker oil in Bolinao waters (PCG, 2000). A report by the UP Marine Science Institute cited that the vessel crushed corals over some 2,700 square meters of the Pudoc reef (MSI, 2001). Affected communities were Bolinao Municipality, Brgy. Pilar, Victory and Dewey.

The survey of the grounding site at Pudoc reef and the assessment of the sea grass beds revealed the following (MSI, 2001): (a) a 90m long by 30m wide of coral reef area was damaged; (b) a 12-ha mangrove reforestation project in Brgy. Pilar with 12,000-16,000 mangrove stands of 1-3 yrs old was heavily covered by the bunker oil; (c) a pilot sea urchin grow-out culture in Victory with around 3000 sea urchins were destroyed; and (d) fish pens with milkfish grow out culture were damaged.

The tables below show the damage valuation done by the UP MSI and the LGU of Bolinao. The UP-MSI obtained estimates of damages of oil spill to the reforested areas and the potential income forgone to the gleaning activity (mangrove nursery); while the Bolinao LGU valued the damages on private claims, forgone fishing income in oil-spill affected brgy's and the amount spent for the damaged gears.

**Valuation of Damages (UP Marine Science Institute)**

Item	Total Cost (PhP)
Potential damage (Socio-Economic) of oil spill to the reforested areas in Brgy. Pilar	<b>1,318,450</b> damages are assumed to persist for 3 years
Potential Income Foregone to the gleaning activity in Santiago Island, Bolinao, Pangasinan	12,118,080 if damages of oil spill will persist for five years, the estimated potential damage 12,118,080*5 years = <b>60,590,400</b>
<b>Total</b>	<b>61,908,850</b>

**Valuation of Private and Municipal Damages (LGU of Bolinao)**

Item	Total Cost (PhP)
Damages on private claims in the LGU of Bolinao	101,065,000
Forgone fishing income in oil-spill affected barangays (municipal)	2,254,036
Amount spent for the damaged gears (municipal)	605,179
<b>Total</b>	<b>103,924,215</b>

In contrast, the Centre for Tropical Coastal Management Studies, commissioned by Nol Schedar to value the damages to the coral reef estimated the impact zone 393.5m<sup>2</sup> with 39.4m<sup>2</sup> of hard coral damaged. The damages valued in terms of the present value of foregone fishing revenue amounted to US\$4,980 per hectare (at 8% discount rate and recovery time of 20 years). The damages in terms of the present value of foregone fishing revenue amounted to US\$8,577.

A big discrepancy exists between what the affected communities claimed are the impacts of the incident on them compared to what the assessor of the acting party is willing to accept as the cost of the impact. The bigger component of the cost of the damages as far as the affected community is concerned is the cost of the oil spill. This item is not part of the calculation of the acting party, as they do not want to accept the responsibility for the oil spill.

Based on the damages to the municipality of Bolinao, the local government unit has filed a PhP100 million-damage suit against the owner of the M/V Nol Schedar. The PCG has also filed civil, criminal and administrative cases against the same firm (PCG, 2001). More than two years after the incident, nothing much has come out of the two cases.

**H.A. Francisco, D.D.V.D. Antonio and A.K.A. Tardeo**

**Case Study No. 2**  
**ESTIMATION OF ENVIRONMENTAL DAMAGES FROM MINING POLLUTION:**  
**The Marinduque Island Mining Accident**

When the mining operation of the Marcopper Mining Corporation (MMC) was moved from the Mt. Taipan to the San Antonio mine site in Sta. Cruz, Marinduque in 1989, the drainage tunnel in the Taipan Pit was plugged with concrete so the pit could serve as disposal pond for the mine tailings. In August 1995, seepage was discovered in the drainage tunnel, which consequently ruptured on 24 March 1996, discharging mine tailings into the Makulapnit-Boac River system.

The incident resulted in the release and deposition of some 1.6 million cubic meters of tailings along the 27-km span of the river system and the coastal areas near the river mouth west of the island-province. Boac River was left virtually dead. The onrush of tailings downstream displaced the river water, which in turn flooded low-lying areas, destroying crop farms and vegetable gardens along the banks and clogging the irrigation waterways to rice fields. Road sections straddling the river were damaged, temporarily isolating some barangays (villages) and affecting trade and access to services. All these impacts adversely affected the local residents in Boac whose livelihood activities were river-dependent.

The table below compares the income of sample households in Boac in the years 1995 and 1996. It is shown that there is a significant drop in the average net and per capita income after the mining accident happened in March 1996.

**Socioeconomic Characteristics of Sample Households Survey of Impact on Livelihood Activities, Boac, Marinduque, May-June 1997**

Stratum	Sample Households	Ave. Net Income (P/HH)		Per Capita Net Income (P)	
		1995	1996	1995	1996
I: Coastal Fishing	60	42,400	39,800	8,480	7,960
II: River Fishing/Laundry	60	28,700	25,350	5,740	5,070
III: Farming	59	41,200	32,400	9,156	7,200
IV: Farming-Trading	56	52,050	30,750	10,410	6,150
<b>Average</b>	<b>235</b>	<b>41,088</b>	<b>32,750</b>	<b>8,446</b>	<b>6,595</b>

The estimated total income loss from the accident-induced pollution of Php50,131,795 consists of forgone income from coastal fishing, river fishing/laundry, farming and farming trading.

**Estimated Total Forgone Income, 1996**

Stratum	Total no. of Households	% of Total Sample Households	Forgone Income	
			Average (P/HH)	Total (P)
I: Coastal Fishing	1,331	48	14,352	9,169,206
II: River Fishing/Laundry	2,616	46	7,101	8,544,458
III: Farming	1,972	70	15,229	21,021,421
IV: Farming Trading	498	98	23,252	11,396,710
<b>TOTAL</b>				<b>50,131,795</b>

**Ma. Eugenia Bennagen**

*(2) The PAB shall deputize in writing or request assistance of appropriate government agencies or instrumentalities for the purpose of enforcing this decree and its implementing rules and regulations and the orders and decisions of the Commission. (PD 984)*

This directive gives the NPCC (EMB CO, RO and the PAB) the power to issue corresponding writs of execution directing the City or Provincial Sheriff or other peace officers it may appoint to enforce the fine or order of closure or stoppage of operations of violating firms. DAO 30, s. 1992<sup>30</sup>, provides for the devolution of the implementation of Cease and Desist Orders issued by the Pollution and Adjudication Board to the LGUs.<sup>31</sup> Under Republic Act No. 7160<sup>32</sup> or the Local Government Code, the LGU has police power to close down polluting firms for violations of the sanitation code and for disruption of peace and order.

The PAB, however, has no regular activity in its work plan to fulfill this directive. While it may have some plans in the pipeline to operationalize this directive, LGU cooperation is critical in the realization of this directive. In this regard, it would be necessary for EMB to consider in its collaboration strategy with the LGUs that local officials may seldom exercise their police power to close down firms because these are sources of tax revenues and employment for the local population. To close an erring firm would thus have repercussions for the political career of mayors and other LGU officials. Hence, local officials would rather have the PAB or EMB personnel enforce the fines or closure orders than perform these “messy” assignments themselves.

### **PD 984 – Water Quality Management**

*(1) River/Water Body Classification, Prioritization of “hotspots”, and Water Quality Monitoring*

In practice, the DENR Regional Office is responsible for monitoring, assessing, and classifying bodies of water before they are classified. Based on the results of its assessment, the RO recommends the classification of the body of water to the EMB CO which in turn studies the recommendations of the regions and publishes the list of classified bodies of water.

Between 1997 to 2001, the EMB was able to monitor a total of 565 bodies of water. Together with the DENR RO, it was also able to classify a total of 130 bodies of water or an average of 26 water bodies per year. At this rate, it will take the Bureau 9 years to classify the remaining 226 principal rivers.<sup>33</sup> Classification would even take much longer

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<sup>30</sup> DENR Administrative Order No. 30. 1992. “Guidelines for the Transfer and Implementation of DENR Functions Devolved to the Local Government Units”.

<sup>31</sup> There are other responsibilities or tasks that the EMB may devolve or collaborate with the LGU. These areas of devolution or collaboration will be discussed in the relevant gap item.

<sup>32</sup> Republic Act No. 7160. 1991. “The Local Government Code of the Philippines”.

<sup>33</sup> EMB Report to DENR Sec. E. Gozun, December 2002.



if apart from the unclassified principal rivers, the tributaries are also to be included in the classification<sup>34</sup>.

Given its pace, EMB must decide whether it plans to complete the classification of the principal rivers or instead identify and prioritize the so-called “hotspots” for classification and consider an alternative option for the management of the tributaries. “Hotspots” are water bodies where industries converge.

While the EMB may have a list of classified rivers, it does not have an operational database on the ambient water quality of these rivers (except for a few rivers and waterbodies like Pasig River and Manila Bay). This is because there is no regular monitoring of classified rivers at the regions. Ambient water quality monitoring of a classified body of water is not regularly done, except for high profile ones, like the Pasig River. With the absence of regular water quality monitoring, there is no clear and sustained program for protection and management for most bodies of water.

In this case, EMB not only has to determine the period within which to complete the classification of water bodies. It also has to identify who will be responsible for the protection and management of the river. Both in the past and at present, there is no clear plan on who will protect and manage the river after its classification.

At the time of the study, the research team learned of the clamor from the ROs and industry for a re-classification of water bodies. The decline in the quality of previously classified water bodies from Class A in the early 1990s to Class B or C at present and the less stringent standard applied to water of lower quality partly motivates this demand.<sup>35</sup>

Proposals to reclassify particular water bodies require a number of conditions. Reclassification is possible only after five years from its original classification.<sup>36</sup> Also, it requires:<sup>37</sup>

- the conduct of a public hearing;
- the establishment of the present and future most beneficial use of the waters;
- public interest; and
- the attainability of the proposed designated use, considering the environmental, technological, social, economic and institutional factors.

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<sup>34</sup> The EMB CO Water Quality Section undertakes river categorization for purposes of the Philippines Environmental Quality Report. They categorize rivers according to their water quality, e.g., if this is poor, good or if the river is biologically dead. The purpose of categorization is for information, education and environmental awareness building.

<sup>35</sup> JICA-EMB Acid deposition, Air Quality Management and Capacity Development Seminar Proceedings, 2002.

<sup>36</sup> Interview with Engr. Rivera, in-charge of river classification.

<sup>37</sup> Section 68, DAO 34 s. 1990.

## *(2) Processing of Sewage Discharge Permits*

EMB has no activity in the issuance of permits for the discharge of sewage by non-priority firms and other sources or the installation or operation of sewage works. The lack of action on sewage discharges by non-priority sources may be due to a lack of policy guidance or the failure to address the overlapping functions among various agencies, like the MWSS, DOH, LWUA or Water Districts. There is seemingly a need to clarify who should address the situation, or what is the role of EMB in calling attention to the problem.

## **RA 8749 – Clean Air Act**

In the Clean Air Act, the gaps consist of the lack of operational plans or activities to implement particular directives. An example is the failure to designate attainment and non-attainment areas. While monitoring data are being gathered and assessed, no attainment or non-attainment area has been designated.

The following types of directives have not been spelled out.

- (1) *Management of Non-Attainment Areas.* In the non-attainment areas, the DENR must prepare and implement a program that will only allow new sources of exceeded air pollutants after the identification and corresponding reduction of existing pollution sources.

Chapter II, Section 10 of the CAA allows for offsetting in the management of non-attainment areas. The management distinction between attainment and non-attainment areas is an improvement over the regulations that it superseded which differentiate emission standards based on geographic location- i.e., whether urban or rural. The management of non-attainment areas adheres to the concept of a bubble, where no additional sources of exceeded pollutants will be introduced within an air shed unless a corresponding reduction is effected on existing sources. This strategy of containment to bring sources of exceeded emissions parameters within the air shed into attainment implies the registration of new vehicles and industrial facilities within a non-attainment area cannot proceed unless old vehicles and facilities are phased out.

The management of non-attainment areas is not yet operational because the air sheds must first be delineated and designated as attainment or non-attainment areas. This delineation would depend on the collection of monitoring data, and the gathering and processing of meteorological data and information on existing nearby sources.<sup>38</sup>

The assessment study on which this paper is based confirms the earlier findings of the World Bank. In its Philippine Environment Monitor 2002 (World Bank, 2002), the implementation progress of the Clean Air Act was documented as shown in the **Table 7** below. Though there has been action on the ban of incineration, the issue on the appropriate disposal method for hospital waste has not yet been adequately addressed. In other words, the lack of an effective measure for hazardous infectious waste may reflect an absolute gap.

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<sup>38</sup> CAA-IRR, Rule VIII, Sec. I; Rule XI, Sec. I

**Table 7**  
**Implementation Progress of the Clean Air Act**

Provision / Objective	Status
Ban Incineration	4
Air Quality Management	3
Ambient Air Quality Guideline Values and Standards	3
Pollution from Motor Vehicles	3
Strategic Planning Framework	2
Emission Charge System	2
Incentives	2
Pollution from Stationary Sources	2
Air Quality Management Fund	2
Appropriations	1
National Air Quality Status Report	1

Source: World Bank, 2002.

Legend: 1 – no action

2 – initial steps

3 – actions formulated

4 – actions formulated and being implemented

(2) *Pollution Control for In-Use Motor Vehicles* - Supervise the emission test for type approval by the DOTC/ LTO.

The emission test for type approval is a function of the Department of Transportation and Communication and Land Transportation Commission (DOTC/ LTO). Through EMB, the DENR is responsible for the issuance of a certificate of conformity (COC) to a motor vehicle manufacturer, assembler or importer certifying that the vehicles complies with the numerical emission standards. Because of this responsibility, the DENR-EMB has the policy, regulation and guidelines supervision over the DOTC/ LTO.<sup>39</sup>

(3) *Pollution Control for In-Use Motor Vehicles* – It chooses the facility where the tests will be conducted by the Department utilizing the Motor Vehicle Type Approval System Testing Center of the DOTC/ LTO.

Directives (2) and (3) are not yet operationalized due to the lack of guidelines and SOPs, especially at the regional office level. Although the EMB air quality section staff has started to visit and observe vehicle emission tests done by the DOTC/LTO in Metro Manila, it is hardly a regular activity of EMB.

(4) *Visitorial Powers* – EMB has visitorial powers over the LTO Motor Vehicle Inspection Station and Vehicle Type Approval System Testing Center where these tests are carried out.

(5) *Grounds for Modification of Permit Conditions* - After due notice and public hearing, the DENR through the EMB may modify any existing valid permit by imposing new or additional conditions, provided that the permittee is given reasonable time to comply with such new or additional conditions.

<sup>39</sup> CAA-IRR, Rule XXXI, Sec. I

Since the implementation of RA 8749 is still in the initial stages, this condition is not yet operational. Although the directive of permit modification is also present in PD 984, regional offices seldom modify existing valid permits. The regional office imposes new or additional conditions, if necessary when the firm renews its permit to operate. These new conditions are usually administrative in nature. An example is the requirement on a firm to apply for renewal at least 30 days before its expiration date, as stated in Rule XIX, Section 8 of RA 8749. It is expected that regional offices would only operationalize this directive when necessary.

Gaps number (6), (7) and (8) involve non-compliance of stationary sources of pollution with provisions of RA 8749. The directives that EMB are supposed to operationalize in Rule XXV of the IRR of RA 8749, are the following:

Gap (6) *Non-Compliance of Stationary Sources* – The compliance plan of non-compliant sources must be reviewed and subjected to approval/ non-approval.

Gap (7) *Consent Agreement with Violator* - The Department, through the Pollution Adjudication Board (PAB) may decide to reduce penalties or fines to be imposed upon stationary sources proven to exceed the emission rate requirements of its Permit to Operate or of these Implementing Rules and Regulations, provided that the person or party responsible for the source enters into a consent agreement with the Bureau.

Gap (8) *Proof of an Environmental Management System* – An EMS is required and must be reviewed for approval/ disapproval. The approved EMS shall be in the form of an EMS audit report prepared internally by the person or party responsible for the facility, or one prepared by a third party EMS auditor.

The identification of violators among the stationary sources will primarily depend on the emission standards, the designation of the air shed and the delineation of the attainment and non-attainment areas. Afterwards, the directives for violators must be formulated in the terms of guidelines and implementing mechanisms.

Gaps (9) and (10) involve the establishment and operationalization of an emission trading system.

Gap (9) *With respect to Emission Offsets* - The proposed emission offsets in existing actual emission within the non-attainment area will be reviewed, approved/ disapproved in a ratio of 1:1.2 to the POTENTIAL emission level of the proposed new or modified source

Gap (10) *Emission Quotas* - The DENR may allow each regional industrial center that is designated as special airshed to allocate emission quotas to pollution sources within its jurisdiction that qualify under an EIA system programmatic compliance program of PD 1586 IRR

As currently designed in the IRR, emissions averaging and emissions trading do take full advantage of its features. Emissions averaging allows firms with co-located multiple sources to exceed emission standards of some of its sources provided that the average of these sources, when computed, complies with the requirement. This sits well with the equimarginal principle and links the emissions and ambient management in a clear and effective manner. More benefits can be derived if emissions averaging is mass-based rather than concentration based, and extends beyond the firm's premises while covering multiple firms emitting the same pollutants, and not limited to existing sources in attainment areas.

Emissions trading is only allowed under the strict condition that the sources are new or modified, that they comply with NESSAP and NAAQ, and are located in an attainment area. This condition, however, will not generate enough demand for such an instrument

*(11) Air Quality Action Plan of LGUs - The DENR shall have the power to closely supervise all or parts of the air quality action plan of LGUs until such time the local government unit concerned can assume the function to enforce the standards set by DENR.*

This directive has not yet been operationalized because it hinges on the creation of air shed governing boards, and the preparation and submission of the action plan to the DENR. The DENR, as chair of the governing board, is also directed to assist the LGU in the formulation of such plan.

### **RA 9003 – Ecological Solid Waste Management Act**

Whether the gaps for RA 9003 are associated with the National Solid Waste Management Commission (NSWMC), the DENR, or the National Ecology Center (NEC), the EMB is responsible for accomplishing all the directives because its staff serves as the Executive Director of the NSWMC. The EMB also constitutes the Secretariat of the NSWMC, it represents the DENR Secretary, and the Director heads the National Ecology Center.

Because the NEC is a newly established center, the enforcement gaps are related to this institution.

*(1) The NEC shall act as clearinghouse for cleaner production/cleaner technologies on solid waste management.*

This NEC role is not yet operational because the Center's institutional mechanisms and infrastructure have not yet been set-up. The NSWMC Secretariat is currently performing the NEC functions. The EMB Regional Directors have been tasked to head the regional ecology centers (although only the IRR explicitly mention these centers). Hence, the fulfillment of the enforcement functions of the NEC depends on its establishment in terms of personnel, infrastructure and operating procedures.

## 5.2.2 Gaps in Policy Formulation and Planning

### **RA 8749**

There are seven functional gaps under the policy functions of EMB in RA 8749.

(1) *Air Quality Control Action Plan Multi-Sectoral Monitoring Team* - The DENR shall convene a multi-sectoral monitoring team with broad public representation for each LGU to conduct periodic inspections of air pollution sources to assess compliance with the emission limitations contained in their permits.

This is not yet operational since it is dependent on the establishment of the air shed governing board for an LGU.

(2) *Use of the Lowest Achievable Emission Rate (LAER) Control Technologies* - Approve the use of the lowest achievable emission rate control technologies on a case-by-case basis. The Department through the Bureau shall review and approve the regional industrial center (designated as a special air shed), the allocation of emission quotas to pollution sources within its jurisdiction that qualify under an EIA programmatic compliance program pursuant to the IRR of PD 1586.

This means that the EMB will approve the use of an air pollution control technology that will provide the LAER of the pollutant by new and modified sources (firms) in non-attainment areas. The affected firm will prepare such technologies that it plans to use in order to comply with RA 8749.

This directive has not yet been operationalized for the following reasons. One, the non-attainment areas have not yet been designated. Two, the EMB has no inventory of LAER control technology. Finally, the EMB has no guidelines on how to review proposals on the use of these LAER control technologies by firms.

(3) *Design of Emission Averaging and Emission Trading (Rule XXI and XXII of CAA-IRR)*

This directive has not yet been operationalized. The CAA-IRR allows existing sources in attainment areas to use emissions averaging and emissions trading. However, there are two exceptions. Both the new or modified sources in attainment areas and the existing sources in non-attainment areas are not allowed to use these policy instruments as shown in **Table 8**.

**Table 8**  
**Use of Emission Averaging and Trading per Type of Source and Area**  
**Republic Act No. 8749**

Sources	Area		Policy on use of emission averaging (EA) and trading (ET)
	Attainment	Non-attainment	
Existing	✓		- May use EA and ET
		✓	- Can use EA for compliance purposes - Can't participate in ET for the pollutant for which the area is designated as a non-attainment area - Can be a generator (not user) of emission reduction credits
New/ Modified Sources	✓		- Not eligible for EA - May generate emission credits for an acceptable ET program
		✓	- Can't use EA or ET for compliance purposes

Prepared by: Naz, C. and Velarder, F., 2003.

(4) *Harmonization with International Standards for Stationary Sources* - In the review and revision of emission standards, the EMB shall harmonize national emissions standards with those set by regional bodies such as the Association of South East Asian Nations (ASEAN).

This has not yet been operationalized since EMB has not yet undertaken the review and revision of emissions standards. In the initial stages of implementation of RA 8749, the impact of emission standards on the regulated community has not been assessed.

(5) *Air Quality Control Techniques* - Issue, and periodically revise information on air pollution control techniques.

The required information includes the best available technologies and alternative fuels, processes and operating methods that will reduce emissions. It may also include data on installation and operating costs, energy requirements, emissions reduction benefits, and the environmental impacts of the technologies.

In the initial phase of implementation of RA 8749, this directive has not yet been operationalized. Operationalizing this directive, entails the conduct or contracting out the research activities, in accordance with the National Research and Development Program contained in the law. This directive is also related to another directive on EMB's approval of LAER control technologies. Thus, the generation of information on air quality control techniques must be accomplished first before the EMB can approve LAER control technologies. RA 8749 also mentions that EMB may establish Air Quality Control Techniques. This shall then be used in enforcement as a guide for the issuance of permits to operate air pollution control facilities of firms.

(6) *National Programs on Reduction and Elimination of POPs.* Pursuant to Section 32 of the Act, the Bureau shall, within one year after the establishment of the inventory list referred to in the preceding section, design and implement a national government program on the reduction and elimination of POPs, such as dioxins and furans.

This directive is not yet operational since it requires an inventory of POPs. Such an inventory that would include PCBs is the subject of an EMB project proposal to UNIDO. The DOST also has a special project on the identification of activities that are sources of dioxins and furans.

(7) *Linkage with Coordinative Multi-Sectoral Body* - The Bureau shall study the creation of a multisectoral commission headed by the Secretary of the DENR and composed of representatives from the following sectors:

- a. government agencies involved in the task of air pollution control and management,
- b. civil society,
- c. business, and
- d. other concerned sectors. The commission shall serve as an oversight body to ensure the systematic and effective management of air quality

Pursuant to Section 35 of RA 8749, the IRR directs the EMB to institutionalize consultation with a multi-sectoral commission tasked to coordinate plans and efforts in addressing air pollution. In effect, the IRR provides a directive calling for a study of the feasibility of creating a national oversight body to ensure air quality management similar to the National Solid Waste Management Commission created by RA 9003. However, this directive has not yet been operationalized.

The study on the creation of a multi-sectoral commission, such as an air quality commission is not explicitly stated in RA 8749, but is mentioned in its IRR.

### **RA 9003**

The NSWMC headed by the DENR Secretary has three unfulfilled directives or gaps. The DENR Secretary has one gap in the performance of policy functions. The NEC has no policy functions, hence, it has no unfulfilled directives or gaps.

In RA 9003 the policy functional gaps of the NSWMC are:

(1) *Develop safety nets & alternative livelihood programs for small recyclers and other sectors that will be affected as a result of the construction and/or operation of a solid waste management recycling plant or facility.*

The NSWMC has not yet operationalized this directive. The law is silent on who will implement these livelihood programs. If the NSWMC is directed to do this, it would be necessary to formulate the guidelines. If this gap can be addressed by PD 1586 or the EIS System, its implementing rules and regulations, DAO 96-37 require the proponent of an environmentally critical project (ECP) like a sanitary landfill to develop and implement



a social development program for the affected community that may involve the small recyclers and other sectors. While PD 1586 puts this responsibility on the proponents, whether they be private firms or LGUs, RA 8749 puts the onus on the NSWMC.

*(2) Together with the National Ecology Center, the DTI and the Department of Finance establish procedures, standards and strategies to market recyclable materials and develop the local market for recycled goods (Sec. 31, RA 9003)*

This directive has also not been operationalized.

*(3) Formulate a set of standards for innovativeness, proactivity, exemplary and outstanding SWM endeavors (criteria for incentives and rewards)*

This directive refers to the development of criteria and awards for exemplary and outstanding SWM endeavours of individuals, private organizations and LGUs. The awards shall be sourced from the Solid Waste Management Fund. This has not yet been operationalized.

The unfulfilled directive under RA 9003 of the DENR Secretary is:

*(a) Recommendation of policies to eliminate barriers to waste reduction programs (RA 9003, Sec. 8, (f))*

This directive is very general, and hence, has not yet been operationalized. At first blush it would seem from the way it is stated that the DENR Secretary is confined to recommending policies either to the NSWMC, Congress or the Philippine President. However, even without waiting for higher authorities to approve policies that would eliminate barriers to waste reduction programs, the DENR Secretary is at the same time directed to promulgate policies by issuing rules and regulations to implement the provisions of RA 9003 (Sec. 8 (i)). Therefore, while the general directive as stated above has not been operationalized, the Secretary has taken steps toward his more specific function of issuing relevant rules and regulations.

### **5.2.3 Gaps in Research**

The research function of EMB is highly centralized at the Research and Development and Laboratory Division (RDD) of the CO. Staff from other divisions are seldom involved in the research projects funded out of EMB's regular funds. If ever other non-RDD staff personnel is involved in research, these are in special foreign-funded projects, such as in the Japanese-assisted Acid Deposition Monitoring Project.

The seemingly low number of directives may also be due to the existence of the Ecosystems Research and Development Bureau (ERDB), which serves as the research arm of the DENR. Furthermore, the Department of Science and Technology and its research councils, e.g., the Philippine Council for Agriculture and Resource Research and Development (PCARRD) and the Philippine Council for Industry and Energy Research and Development (PCIERD) perform research functions related to the concerns of the Bureau. Various universities also conduct environmental researches.

Most of the regularly funded researches conducted by EMB are based on mandates focusing on water quality, toxicity testing and acid deposition monitoring. Among the EMB's five legal mandates, RA 9003 contains the most number of directives for EMB to perform research functions. On the other hand, PD 1586 has no research activities but the current Division Chief envisions the EIA Division to also undertake researches to backstop enforcement. The only research activity under RA 8749 is on acid deposition though there are proposed research activities in the Air Quality Control Action Plan to address research gaps under RA 8749.

**Table 9** outlines the current research projects of EMB.

**Table 9**  
**Research Projects by Mandate**  
**Environmental Management Bureau**

Mandate		Research Project
PD 984		<ol style="list-style-type: none"> <li>1. Groundwater Quality Monitoring Project <ul style="list-style-type: none"> <li>- monitoring of stations</li> <li>- collection of samples</li> <li>- preparation of report</li> </ul> </li> <li>2. Land Based Sources of Pollution (Western Luzon) <ul style="list-style-type: none"> <li>- assessment of rivers</li> <li>- collection of samples</li> </ul> </li> <li>3. River/Bay Water Quality Monitoring</li> <li>4. Mike 11 Modeling Institutionalization</li> <li>5. Project proposal dev. preparation re: Rate of charge for additional parameter under industrial Waste Water Permitting System (WWPS)</li> </ol>
RA 6969		<ol style="list-style-type: none"> <li>1. Polychlorinated Biphenyls (PCBs) Study <ul style="list-style-type: none"> <li>- monitoring of sites</li> <li>- collection of samples</li> <li>- preparation of report</li> </ul> </li> <li>2. Pesticides and Metals Watch Project <ul style="list-style-type: none"> <li>- monitoring of sites</li> <li>- preparation of report</li> </ul> </li> <li>3. Toxicity testing (evaluation of effects of toxic chemicals on aquatic organisms)</li> <li>4. Research on Risk Assessment Policy of chemicals</li> <li>5. Establishment of enabling activity/project Coordinating mechanisms for Persistent Organic Pollutants (POPs)</li> </ol>
RA 8749		<ol style="list-style-type: none"> <li>1. Acid Deposition Monitoring (Special Project with the Asia Deposition Monitoring Network in East Asia, EANET based in Japan)</li> </ol>
RA 9003	DENR Sec	<ol style="list-style-type: none"> <li>1. Metro-Manila SWM Project (ADB)</li> <li>2. Pilot Study for the Formulation of SWM Plan for selected LGUs (JBIC)</li> <li>3. Public-Private Partnership in Urban Environment for SWM (UNDP)</li> <li>4. Ecological Governance Project (USAID)</li> </ol>

**Table 9 continued**

Mandate		Research Project
	NEC	<ol style="list-style-type: none"> <li>1. EMB acts as facilitator between experts in SWM and pilot communities/LGUs in pilot modeling of SWM facilities and technologies</li> <li>2. Success stories of model waste minimization are disseminated through publications and information campaigns</li> </ol>

Prepared by: Naz, C. and Velarde, F., 2003.

The research function of the EMB seems to have the least number of directives since it is also incorporated in other functions such as policy, enforcement and fund generation. On the whole, there seems to be a weak link between the research function on the one hand, and the policy, education and fund generation functions, on the other.

The weak links notwithstanding, the EMB EIA Division Chief Rey Alcances envisions pursuing policy studies and scientific researches on environmental impacts of development projects. With the EIA as a planning and management tool, the activities of the bureau would shift from mere enforcement of PD 1586 through the issuance of ECCs to more pro-active activities, like the use of geographic information systems to update data on environmentally critical areas. Aware of the situation, the EIA Division would like to use the implementation experience from the field for pilot studies on the impacts of EIA policies that would help streamline the processing of ECCs. Mr. Alcances also expressed his hope that the environmental management plans of firms applying for an ECC be based on an environmental management system. While RA 8749 has provisions for this, they are not yet being operationalized.

The research gaps are found mostly along the directives of RA 9003. The research functions assigned to DENR (represented by EMB) include the following:

- a. Establish methods and other parameters for the measurement of waste reduction, collection and disposal;
- b. Spearhead the setting of standards for leachate.
- c. Study the factors for success/failure of community-based waste management initiatives.
- d. Undertake research on economic instruments in solid waste management.

#### **5.2.4 Gaps in Education**

The conduct of IEC activities is not the sole mandate of EMB. The private sector, civil society groups, other government agencies and LGUs are allies in environmental IEC. Nevertheless, as the authority in environmental laws and environmental quality, EMB is expected to exert leadership in environmental advocacy and in building an environmentally-conscious or "green" constituency. It is, after all, the lead agency in the preparation of the Philippine Environmental Quality Report or the country's official State of the Environment Report. As such, EMB must eventually become the source of all quality data and information on the environment used and disseminated by schools, NGOs, the private sectors, government and civil society groups.

Despite its allies in environmental education, EMB still has some unfulfilled directives in its education functions as stipulated by the two recent legislations—RA 8749 and RA 9003. One of the constraints to fulfilling its education directives is the centralization of IEC materials conceptualization and development at the EMB Central Office. At present, the ROs are still confined to conducting lectures and seminars and disseminating IEC materials taken from the CO. To date, the CO staff initiates or undertakes most of the IEC activities on international commitments.

The centralization of IEC activities may partly account for the weak link between the EMB CO and RO in education functions. The ROs seem to depend on the DENR regional public affairs office to do IEC activities, like writing articles in local print media and participating in local broadcast or TV programs. Unlike the Mines and Geo-Sciences Bureau (MGB), another line bureau of the DENR that requires its regional offices to report IEC activities, and submit news clippings to the CO at least once a week and where the conduct of IEC activities is a vital criterion in the performance ranking of the MGB regional directors, this is not so with the EMB. EMB regional offices only submit reports on IEC activities on special occasions (e.g., environment month) to the EMB CO. The EMB CO has not been as assertive in guiding the ROs toward assuming some of the Bureau's education functions.

The active participation of the ROs in IEC could be facilitated by their active involvement in inter-agency committees and projects (IAC/Ps) of which EMB is a member. At the moment, the Bureau's CO is a member of about 84 IAC/Ps. Governed by various Memoranda of Agreements (MOA) between EMB and other government agencies and private sector or civil society groups, these committees represent networks that could be avenues not only for building partnerships with other sectors but for IECs as well.

### **RA 8749**

Many IEC activities undertaken in line with this Act are ongoing, and many are also in the AQAP. However, some of the education directives are still unfulfilled. These include:

- (1) *Air Quality Monitoring and Information Network* - The DENR in cooperation with the NSCB, shall design and develop an information network for data storage, retrieval and Exchange.
- (2) *Ambient Air Monitoring Network* - Within two (2) years from the effectivity of these Rules, design and establish an Ambient Air Monitoring Network for the assessment of ambient air quality. The Ambient Air Monitoring Network shall be expanded gradually to cover the entire country

The above directives are awaiting operationalization.

### **RA 9003**

In general, RA 9003 directs the EMB to encourage greater private sector participation, institutionalize public participation, and strengthen the educational curricula through the integration of SWM.

Education functions under RA 9003 are deemed critical to the implementation of ecological solid waste management. Interestingly, RA 9003 has the most number of education directives for the NSWMC, the DENR and the NEC.

In addition, LGUs, the prime enforcers of the Act are also mandated to carry out education functions.

Some of the gaps in the fulfillment of the education functions of the EMB, to wit:

*NSWMC*

Encourage private sector initiatives, community participation and investments resource recovery-based livelihood programs for local communities

*DENR*

In cooperation with the DOH, DILG and other concerned agencies, publish an inventory of solid waste disposal facilities or sites in the country (Sec. 36, RA 9003);

*NEC*

- a. Formulate a training program for deputized enforcers and implementers;
- b. Develop an accreditation and certification system for the conduct and holding of training programs on solid waste management; and
- c. Promote the development of a recycling market through the establishment of a national recycling network that will enhance the opportunity for recycling.

### **5.2.5 Gaps in Fund Generation and Management**

In order to provide adequate resources for the performance of its functions, the EMB needs to operationalize its fund generation directives. Twenty six percent (26%) of the total number of unfulfilled directives or gaps fall under fund generation and management. Next to enforcement, this function is the second in among the priority areas to be strengthened.

The gaps or unfulfilled directives in line with RA 6969, RA 8749 and RA 9003 are as follows:

#### **RA 6969**

- (1) *RA 6969 Special Fund* – While the administrative fines imposed and collected by the DENR accrues to a special fund to be administered by the DENR exclusively for projects and activities related to toxic substances and mixtures, the fund has not yet been utilized.

## **RA 8749**

Compared with the other EMB mandates, RA 8749 has the most number of fund generation and management directives. Since RA 8749 was just passed in 1999, there are a lot of directives that EMB has to operationalize. Among them are the following:

- (1) *Penalty and Fine Surcharge* - Sources subject to the non-attainment provisions will be subject to a 100% surcharge (i.e., 200% of base) for any penalties or fines relating to a violation of the non-attainment provisions.
- (2) *Failure to comply with Consent Agreement* – Because of this failure, the facility owner is subject to the reimposition of the original penalty, as well as additional appropriate penalties computed on a daily basis pursuant to Section 45 of the Act.
- (3) *Decision-making on the Use of AQMF* - The Department will formulate business standards, which will describe the scrutiny mechanisms of proposals as well as maximum response times.
- (4) *Decision-making on the Use of AQMF* - The DENR will ensure the publication of an Annual Report that specifies the income and expenditure of the AQMF, together with a summary of initiatives supported and refused. This Annual Report will be available within 2 months after the end of the fiscal year.
- (5) *Emission Charge System* - Based on environmental techniques, the DENR shall design, impose and collect regular emission fees from industrial dischargers as part of the emission permitting system.
- (6) *Emission Trading* – The Board reviews, approves/ disapproves emissions trading among pollution sources within an airshed
- (7) *Emission Trading* - The Bureau shall approve the Compliance Plan & application of emission trading for facility owners wishing to use emission trading for compliance purposes
- (8) *Emission Trading* - The Bureau shall approve CEMS for the pollutants to which emission trading is being applied. The continuous emission monitoring system must be installed on each source that is being used to generate the emission reduction credits.
- (9) *Financial Liability for Environmental Rehabilitation* - As part of the EMP attached to the ECC pursuant to PD 1586, the DENR shall require program & project proponents to put up financial guarantee mechanisms to finance the needs for emergency response, clean-up or rehabilitation of areas that may be damaged during the program or project's implementation. The choice of the guarantee instrument or a combination of instruments shall depend on the assessment of the risks involved.

(10) *Financial Guarantee Mechanisms* - The Bureau may promulgate guidelines for the effective implementation of said financial guarantee mechanisms attached to the EMP of an ECC.

### **RA 9003**

Since LGUs are the primary enforcers of RA 9003, the EMB has only two directives on fund generation. Understandably, these directives have not yet been operationalized since RA 9003 was enacted only in 2001. For the NSWMC, the tasks that have to be performed are as follows:

- (1) *Administer the Solid Waste Management Fund;*
- (2) *Prescribe the procedure and proforma for fund application or criteria for the availment of the SWM Fund.*

### **5.3 Reasons for the Absolute Gaps**

The absolute gaps enumerated above, accounting for about 21 percent of the mandate directives, possibly reflect EMB's institutional age. As a young organization, it has yet to work on directives that demand simultaneous attention. Nevertheless, the situation EMB finds itself in may be viewed in a positive light. Unlike other organizations that have already operationalized all of their mandate directives, EMB does not need to explore ways of re-inventing itself in order to be relevant to society. It is relevant. While it has grown older in years despite its relative youth, it will continue to be youthful because unlike other counterpart bureaus in the DENR, EMB has continued to receive new and timely legislative and executive mandates such as the ones promulgated by RA 8749 and RA 9003, and the forthcoming Clean Water Act.. The refreshing lease on life with each new directive allows the bureau to explore a wider range of options in terms of organizational structure and activities. From this perspective, the above gaps represent some of the challenges and prospects for EMB. While it still has far to go as an organization, it has more latitude for strategic thinking and organizational experiments.

Apart from EMB's youth, the above absolute gaps could also be attributed to other reasons. Consultations with key EMB personnel reveal that there are at least five main reasons accounting for the inability of the Bureau to implement activities in line with some of its directives. While they are not mutually exclusive, the reasons include lack of coordinative mechanisms, lack of guidelines and standard operating procedures, the lack of capability, and lack of resources. Other reasons include the lack of LGU capability, action, or information, and the lag in the implementation of the Clean Air Act.

**Table 10** presents the distribution of reasons posited for the gaps in the Bureau's fulfillment of its functions. Most of the gaps (41 out of the 50 gaps) are mainly attributed to inadequate provision of formal guidelines and SOPs in the conduct of activities. Lack of coordinative mechanisms and resources account for 24 percent and 16 percent of the gaps, respectively. Nine percent of the identified gaps also stems from the lack of capability of the Bureau and some of its personnel. Finally, other reasons such as lack of information or LGU action and capability account for 10% of the total number of gaps identified.

### **Lack of Guidelines and SOPs**

In order to initiate the process of implementation and address the problems of implementation and other concerns, directives, appropriate guidelines and standard operating procedures (SOPs) must have already been formulated. These essentially allow for the systematic and organized flow of tasks, hence the accomplishment of objectives. For an organization like EMB that has been mandated by law to conduct numerous tasks, the formulation of guidelines and SOPs is of great urgency.

### **Lack of Staff Complement and Other Resources**

Perhaps one of the most crucial requirements for the conduct of activities is the provision of adequate resources such as personnel, equipment, facilities, and financial support. Resources provide the EMB with the means and flexibility required for various activities. The inadequate provision of resources cramps the capability of the EMB to perform its different functions.

### **Lack of Coordinative Mechanisms**

Coordinative mechanisms refer to the relations of units and divisions within EMB or its external links with other agencies and organizations that could result theoretically in better facilitation of activities. For instance, coordinative mechanisms could enable a particular division in the Bureau to better understand the issues facing another division and provide assistance in the conduct of activities aimed to address such issues. Mechanisms like this allow for the effective exchange of inputs, resources, and assistance among divisions. Coordinative mechanisms could also extend beyond the Bureau. Its development would enable the EMB to harness the resources of external entities, such as LGUs and other government agencies in the enforcement of environmental laws and implementation of environmental programs. It would seem that coordinative mechanisms within EMB and between it and other agencies and organizations have yet to be either initiated or fully developed.

### **Lack of Capability**

The implementation of activities also depends on the capability of the organization and its personnel. The absence of appropriate capabilities may lead to the ineffective implementation of activities or simply the failure to specify the necessary tasks and delineate responsibilities. While activities may be pursued despite limited capabilities, such attempts could result in undesirable outputs unless external intervention in the form of external experts takes place. It may be helpful under the circumstances for EMB to focus on capability building among existing staff and the development of a staff recruitment system that is attuned to the new skills entailed by the Bureau's expanding mandates. Retooling among the tenured staff along the principles of lifelong learning would be essential.



### **Other Reasons for Unoperationalized Activities**

Some necessary conditions must prevail for the implementation of particular directives. For instance, specific stakeholders, like the local government unit must be sufficiently involved and committed to the spirit of environmental legislations for them to participate actively in the implementation of laws. They must also possess some measure of technical capabilities. A related reason for the failure or delay to implement particular Bureau's activities could be the lag in the implementation of laws such as the Clean Air Act.

**Table 10**  
**Distribution of Reasons for the Gaps**  
**Number of Gaps and Percentage to Total**  
**Environmental Management Bureau**

Reasons for the gaps		No. of Gaps	% to Total
1)	Lack of coordinative mechanisms	12	24%
2)	Lack of further guidelines and SOPs	41	82%
3)	Lack of capability	9	18%
4)	Lack of staff complement and other resources	16	32%
5)	Others*	5	10%
Total number of gaps		50	

Prepared by: Naz, C. and Velarde, F., 2003.

\*Includes lack of LGU capability or action, the lack of information, and the lag in the implementation of the CAA.

In the light of these reasons, EMB might consider a number of options to address these gaps or unfulfilled directives. The Bureau's strengths and some of the available opportunities ought to be matched with its weaknesses and constraints. The Strategic Plan in Report No. 1B presents some of these options.

#### **5.4 The Nature and Quality of EMB Activities**

While the EMB has not been able to undertake 50 out of its 239 mandated directives, it was able to operationalize or implement to some degree the remaining 189 mandated directives. With regards to the implementation of these 189 (79 percent of total mandated directives), the following questions may be asked. Who has assumed the various environmental management functions? What has been the quality of the implementation effort? What are the factors that have hampered or constrained the accomplishment of EMB's functions.

### 5.4.1 Distribution of Function by RO, CO

Given the 189 directives that the EMB has implemented of its mandate, the Bureau has undertaken activities that operationalize and carry-out these directives. There were 419 identified activities to implement the directives (see **Appendix G**).

**Table 11** shows that of these activities, the Central Office (CO) performed 313 while the Regional Offices (RO) was involved in 154 activities. Forty eight activities were common to the COs and ROs.

This distribution of activities reveals that the CO performed twice more activities than the RO, suggesting what was earlier referred to as the concentration or centralization of the performance of particular functions. In particular, the table shows that while the CO and RO seem to share in the work of enforcement and fund generation and management, the CO initiates, if not undertakes a greater proportion of the activities in policy and planning and education. The regular research functions fall entirely on the CO.

**Table 11**  
**Over-all Summary of Activities Done**  
**Environmental Management Bureau**

Functions	Total Activities	Activities Done by EMB		
		Central Office	Regional Office	Both*
Enforcement	221	130	107	16
Education	93	87	24	18
Policy and Planning	67	63	9	5
Fund Generation and Management	21	16	14	9
Research	17	17	0	0
<b>TOTAL</b>	<b>419</b>	<b>313</b>	<b>154</b>	<b>48</b>

Source: Naz, C. and Velarde, F., 2003.

With regards to policy formulation, EMB CO initiates the process, and provides policy drafts to RO in their management conferences, reprogramming exercises, and RO meetings. As noted previously, regional offices also perform education functions but their activities are confined to IEC campaigns and reproduction of IEC materials. Seldom do regional offices prepare their own IEC materials. Instead, the EMB RO relies on the DENR regional public affairs offices to handle most of the education activities, reflecting the budgetary and functional divisions within the DENR.

The allocation of functions between the CO and the RO may be related to the status of EMB as a mere staff bureau before RA 8749. It may also result from the absence of a direct link between the Environment and Education Division of EMB CO and the information offices of EMB ROs. As a matter of fact, the EMB RO information officers are said to have had closer links with the DENR RPAOs rather than with the CO. Now that it is a line bureau with specific education directives mandated by RA 8749 and RA 9003, the EMB needs to examine how it can fulfill these directives, with the involvement of the

RO, other government agencies, the private sector and civil society organizations. It is suggested, for instance, that the EEID-CO should plan together with the RO and harmonize their activities for Earth Day and other environmental events.

**Appendix I** shows the extent to which there are activities to implement the directives of the various mandates by function. It also specifies whether the CO or RO or both are responsible for particular activities under each function and mandate. For instance, more than half (20) of the 35 activities under RA 8749 are performed by the RO.

#### **5.4.2 Membership in Inter-agency Committees/Projects (IAC/Ps) as Fulfillment of Some of its Mandates**

##### **Functional Objective**

Because of its mandate, the Environmental Management Bureau (EMB) participates in various task forces, technical working groups, secretariats, commissions or committees where it interacts with other government agencies, private or business sector, and civil society groups like NGOs, the academe, and people's organizations. As noted previously, EMB is currently a member of 84 inter-agency committees or projects (IAC/Ps) created by law to address particular environmental or environment-related issues and concerns. **Table 12** shows the various topical concerns, number of committees in each mandate, and the environmental management function they address. Most of the work done in the committee pertains to policy formulation and to a lesser extent, to education<sup>40</sup> (**Table 13**). Out of the total number of IAC/Ps, 30 committees deal with PD 984, followed by Across Mandates with 15 committees, RA 8749 with 12 committees, RA 6969 with 11 committees, and PD 1586 with 10 committees. RA 9003 has the least number with 6 committees.

In these committees, the EMB serves either as the lead agency or as a member. As the lead agency, the Bureau provides the opportunity to committee members to input into the development of plans and the formulation of policies. The committee as a whole contributes to the formulation of policies, the review and revision of implementing rules and regulations of the legal mandates, or the development of environmental standards, frameworks and guidelines.

In its involvement as the lead agency or secretariat, entire EMB sections, division or clusters of divisions engage in committee organizational work, documentation, and the implementation of agreements reached by the IAC/P. The Bureau's support and administrative staff also attend some of the meetings. **Appendix J** shows the lead technical staff in the section or division who are involved in the IAC/P.

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<sup>40</sup> These are only a few IAC/Ps where other sectors are involved in implementation, monitoring and evaluation. An example of such IAC/Ps is the Red Tide Task Force that does water quality monitoring. Another example is the Metro Manila Drinking Water Quality Committee, wherein the EMB CO Laboratory does drinking water quality laboratory analysis for the Quezon City area.

**Table 12**  
**Membership in Inter-Agency Committees/Projects (IAC/P)**  
**Environmental Management Bureau**

<b>Mandate</b>	<b>Topic</b>	<b>No. of IAC/Ps</b>	<b>Functions</b>
PD 984	Oil Spill/Pollution	4	Policy
	Environmental Management (Manila Bay, Pasig River & Seas of East Asia	3	Education, Enforcement, Policy
	Marine Pollution/Protection	3	Education, Policy
	Watershed, Ballast Water, Water Resources	3	Policy
	Red Tide	2	Education, Enforcement, Policy
	Ecotourism	2	Education, Policy
	Drinking Water Quality	2	Education, Policy, Research
	South China Sea Project	2	Education, Policy, Research
	Clean Water Act	2	Policy
	Meat Inspection	1	Education
	International Coral Reef Initiative	1	Education, Policy
	Fish Cages in Lakes and Cool Waters	1	Policy
	Surfactants	1	Policy
	Philippine Coast Guard (PCG) Separation Bill	1	Policy
	Atlas Commission	1	Policy
	Standards for Boron, Arsenic and Other Heavy Metals	1	Policy, Research
PD 1586	Mines	3	Enforcement
	EIA Streamlining	2	Enforcement
	DOF-LOGOFIND	1	Enforcement
	EIA system	1	Enforcement
	Agrarian Reform Communities Development Program	1	Enforcement
	Golf Course Construction and Development	1	Enforcement
	ICC-NEDA Board	1	Policy
RA 6969	Hazardous Waste Management	3	Education, Enforcement, Fund Generation, Policy, Research
	Persistent Organic Pollutants (POPs)	3	Education, Policy, Research
	Montreal Protocol – Institutional Strengthening	1	Education, Policy
	Tiwi Solid Waste Injection Project	1	Enforcement
	Fertilizer Pesticide Authority	1	Policy

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	(FPA)		
	IATAC of RA 6969	1	Policy
	Dangerous Drugs	1	Policy
RA 8749	Atmosphere, Climate Change, Greenhouse Gas Mitigation	3	Policy
	Emissions, Motor Vehicle Inspection	3	Policy
	Fuel, Petroleum Products	2	Policy
	Area Quality Improvement	1	Education, Enforcement, Policy
	HAZE	1	Policy
	Airshed	1	Policy
	Acid Deposition Monitoring	1	Policy, Research
RA 9003	Solid Waste Management	4	Education, Enforcement, Fund Generation, Policy
	Ecology	2	Education, Enforcement, Policy, Research
Across Mandates	Environmental Information, Education and Technology Transfer	4	Education
	Environmental Protection, Management and Development	4	Education, Fund Generation, Policy
	Industrial Competitiveness & Initiatives for Sustainable Environment	3	Education, Policy
	Green Aid Plan	1	Education
	Strengthening Environmental Enforcement and Compliance Capacity	1	Education, Enforcement, Fund Generation, Policy, Research
	Environmental Health	1	Policy
	ISO 14000 Series of Standards Implementation	1	Policy

Prepared by: Naz, C. and Velarde, F., 2003.

**Table 13**  
**Nature of IAC/Ps where EMB is a Member**  
**By Function per Mandate**

Mandate	Function					Total
	Enforcement	Policy	Research	Education	Fund Generation	
PD 984	2	26	3	12		30
PD 1586	9	1				10
RA 6969	2	8	2	3	1	11
RA 8749	1	12	1	1		12
RA 9003	4	5	1	6	1	6
Across Mandates	1	9	1	8	2	15
<b>Total</b>	<b>19</b>	<b>61</b>	<b>8</b>	<b>30</b>	<b>4</b>	<b>84</b>

Prepared by: Naz, C. and Velarde, F., 2003.

### **Rationale for Membership in the IAC/P**

EMB's membership and in many cases, leadership in the IAC/P are a consequence of various factors. These include EMB's mandates, the increasing demand for environmental expertise and services, and the severity and multi-sectoral nature of environmental problems. Interestingly, the IAC/Ps have also become venues for team building and constructive engagement, if not implicitly social laboratories for democratic governance.

#### ***(1) Demand for Environmental Expertise and Services***

There seems to be a tremendous demand for EMB expertise and services by other agencies and projects. In IAC/Ps where the EMB does not take the lead, its representatives are sought out as resource persons on environmental laws and impacts. In some IAC/Ps, EMB membership is desired because of its authority over a regulated community, e.g., industries. By including the EMB in an IAC/P, data from members of a regulated community could be accessed by the lead agency for purposes of fulfilling the mandate of the said IAC/P.<sup>41</sup>

The EMB is also sought after as a member of various IAC/P because it enables the IAC/P to avail of the laboratory services of the Bureau. The Metro Manila Drinking Water Committee, for instance, is a case in point.

<sup>41</sup> Interview with Engr. Marcelino Rivera, Jr. on January 21, 2002. Data about the environmental performance of the regulated community could also be accessed. For example, the Department of Agriculture's National Meat Inspection Commission (NMIC) gives out yearly awards to the "Best Meat Establishment". These include poultry farms, dressing plants and slaughterhouses. The NMIC formed the National Committee on Meat, Amenities and Technology (NACOMEAT). It is an inter-agency committee that evaluates nominees for the said award. Compliance with environmental regulations is one of the criteria for the award. Thus, the EMB representative evaluates the nominees based on this criteria and ranks them accordingly.

## ***(2) Severity and Multisectoral Nature of Environmental Problems***

The creation of numerous IAC/Ps also reflects the environmental issues and concerns that cut across different sectors and that could not be addressed by a single agency. The number of committees per sectoral mandate is also an indication of the severity of the environmental problem. This is most apparent in the case of deteriorating water quality in some areas. The majority of inter-agency efforts are geared toward addressing water-related environmental issues and concerns. The next biggest number of IAC/Ps consists of those cutting across the five mandates of EMB. Most of these interagency committees are related to foreign-assisted projects with various components that seek to address several environmental problems.

## ***(3) IAC/Ps are Venues for Team-Building and Constructive Engagement Among Members***

Although often implicit, some IAC/Ps were created to serve as venues for team building and constructive exchange among its members. In particular, some IAC/Ps were formed to convene agencies and groups with conflicting views and interests to work together and address an environmental problem or issue. Investigative task forces or technical working groups, acting as coordination bodies, bring together opposing agencies into an IAC/P and enable them to express their views, discuss their differences and reach an agreement. Some IAC/Ps initiate “talk-shops” or venues for dialogues to reduce tensions among opposing agencies and groups that would otherwise escalate into open conflicts. These tensions arise between government agencies, government agencies and the private sector, government agencies and civil society groups, e.g., NGOs and people’s organizations.

## ***(4) IAC/Ps are Social Laboratories for Democratic Governance***

Inter-agency committees/projects also implicitly serve as social laboratories for the development of participatory democracy and governance. They provide an avenue whereby participation, accountability, transparency and predictability are operationalized in the resolution of environmental issues and problems. Members of IACP/s are expected to shed off the nuisances attached to their positions in their respective agencies and put their hearts and minds together to work at the tasks for which they are convened. IAC/Ps provide members the opportunity to develop and exercise skills on participation, facilitation, negotiation and consensus building. These prepare the members for higher-order tasks and leadership in sub-regional groupings, like the East-Asia Growth Area (EAGA) and in regional groupings like ASEAN and eventually, in international multilateral agencies like the United Nations.

## **Policy and Organizational Implications of IAC/Ps**

The involvement of EMB staff in IAC/Ps may be viewed positively or negatively. It can also be viewed from the point of EMB management or from the staff's perspective. **Table 14** presents these perspectives.

**Table 14**  
**IAC/P Involvement**  
**Views of Management and Staff**  
**Environmental Management Bureau**

	<b>PROS</b>	<b>CONS</b>
EMB Management	<ul style="list-style-type: none"> <li>• Enables EMB to fulfill some of its mandates</li> <li>• Facilitates the access of EMB to data and facilities of other agencies that are IAC/P members (networks)</li> <li>• Provides venues to enhance the public image of EMB*</li> </ul>	<ul style="list-style-type: none"> <li>• Sometimes activities of the IAC/Ps are not priorities of EMB but since IAC/Ps offer some other benefits, e.g., trainings, equipment, EMB participates in them</li> <li>• Other staff have to absorb functions of the staff involved in the IAC/P when he is out for IAC/P activities</li> <li>• Some unprogrammed resources (transportation, per diems, vehicle use) are used for IAC/Ps</li> <li>• Sometimes hierarchical structure of the bureaucracy and chain of command is not followed since the EMB staff involved has to report both to his EMB supervisor, sometimes directly to the EMB Director and to the chairman of the IAC/P</li> </ul>
EMB Staff involved	<ul style="list-style-type: none"> <li>• Trainings</li> <li>• Helps develop creativity and innovativeness in the staff</li> <li>• Exposure to new ideas, technology, way of doing things</li> <li>• Opportunity to network with others</li> <li>• Meetings</li> <li>• Other IAC/P activities</li> <li>• Provide opportunities for recognition of good work, e.g., press releases, commendation by other agencies</li> <li>• Provides media exposure of staff</li> <li>• Travel (esp. foreign travel)</li> <li>• Break from the humdrum of day-to-day office work</li> <li>• Honorarium (sometimes)</li> </ul>	<ul style="list-style-type: none"> <li>• IAC/Ps create additional work that is not necessarily reflected or recognized in the performance appraisal of the EMB staff involved</li> <li>• It is difficult to make decisions or commitments to the IAC/P since these might need clearance from the EMB staff's supervisor and the EMB Director.</li> <li>• Need to balance and prioritize regular task at EMB vis-à-vis IAC/Ps tasks</li> <li>• It takes a long time for EMB to reimburse travel and other related expenses</li> </ul>

Prepared by: Naz, C. and Velarde, F., 2003.



### **5.4.3 The EMB's Environmental Management System**

As a component of the Industrial Initiatives for Sustainable Development, the Environmental Management System of EMB began in 2000 to obtain ISO 14000 certification<sup>42</sup>. As a means to implement a strong and effective environmental management program, ISO certification can help in identifying areas for resource conservation and for reducing environmental liability and risk. More importantly, it demonstrates the institution's environmental leadership, and sets an example for the regulated community.

Because the EMB wanted to model what it required of other institutions, it initiated its own EMS. Its offices were required to spearhead specific EMS programs, such as pollution control, chemicals management, paper conservation, water conservation, electricity conservation, solid waste management, and emergency preparedness and response. The following EMS activities were also undertaken:

1. Planning – to prepare the plans related to Initial Environmental Review, Gap Analysis, development of aspects rating, establishment of legal requirements, objectives, targets and EMS programs;
2. Training and Promotion – to prepare the Bureau's EMS Awareness Program as well as the training plan necessary to implement the EMS and Safety Programs of the Bureau;
3. Documentation – to prepare the documentation design for records, internal audit, gap analysis and management review; and
4. Internal Auditing – to audit and measure the level of the EMB's conformance to the ISO 14001 standard, identify the necessary corrective and preventive actions for non-conformances.

For the past two years, EMB has established and maintained its EMS. In line with this, it has articulated its environmental policy, organized its EMS organizational structure, and created its EMS manual. These activities of course entailed cost. The involvement of EMB staff in the various teams of the EMS structure required time from their regular workload. In effect, these time inputs were over and above the given responsibilities of

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<sup>42</sup> The ISO 14000 series of international standards have been developed for incorporating environmental aspects into operations and product standards. ISO 14001 specifies the standards for environmental management systems. It requires implementation of an Environmental Management System (EMS) in accordance with defined internationally recognized standards. The ISO14001 standard specifies requirements for establishing an environmental policy, determining environmental aspects & impacts of activities, planning environmental objectives and measurable targets, implementation & operation of programs to meet objectives & targets, checking & corrective action, and management review. (Ms. Marivic Abrera. Personal communication, 2003).

personnel. There are benefits, however, to be gained from the EMS process, such as improvements in operations and savings on electricity, supplies and other resources<sup>43</sup>.

As one of the requirements of ISO 14001, internal auditing was conducted in March 2003. This served as an opportunity to review existing operations, determine the environmental aspects and impacts of EMB internal activities, and thereby improve on them. The following were the conclusions of the audit team:

- (a) The EMB is still in its initial stages of conformance to the EMS audit criteria.
- (b) The system is not yet properly implemented. The documentation appears to be inadequate, and there is very limited evidence to show that the system is being maintained.
- (c) The internal management review process has been initiated and if sustained, the system's deficiencies can eventually be resolved.
- (d) Under the current level of documentation, reporting system, and physical conditions, the EMB's EMS is not yet eligible for third party audit.

Despite these deficiencies, the EMB intends to pursue its ISO 14000 certification. Anyway, what is good about the EMS is that the system has a built-in capacity to continually improve operations. With its iterative process, EMS activities can meet, set targets, and implement programs.

While the internal EMS audit focuses on the "direct" impacts, i.e. the impacts of EMB's everyday operations (its use of electricity, water, paper, etc.) on the immediate environment, there is another level of environmental impacts that must be looked upon. Given EMB's mandates on pollution control, environmental impact assessment, toxic and hazardous waste management, air pollution control and management and solid waste management, it has an "indirect" impact on the larger Philippine environment. Hence, it is useful to determine its indirect impact. An assessment of EMB activities, capacities, and performance with respect to its mandate complements an internal audit and partly provides an understanding of this impact.

In summary, the EMB's move to establish its own environmental management system is commendable. Many aspects of EMS and ISO certification work to reinforce strategic options for the institution. The challenge is how to harmonize them, so that efforts do not become redundant, but synergistic.

#### **5.4.4 Quality of Implementation by Function**

This section discusses the accomplishments of EMB in implementing various mandate directives, the quality of its implementation efforts, and the limitations and issues that have constrained its performance. It assesses the efforts and relative success of the Bureau to carry out the five different environmental management functions. With respect to the enforcement function, the assessment covers various activities, such as river

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<sup>43</sup>Unfortunately, this may work to the institution's disadvantage. Government budgeting processes do not reward savings made by institutions, i.e., it justifies failure to increase budget when it sees that an institution is able to run on very limited resources.

classification, inspection or monitoring of pollution sources, detection of violation, pollution adjudication, and compliance generation. It also examines the other EMB divisions that provide vital services to the technical divisions in the performance of their functions. These divisions are the Legal, and Administrative and Finance Divisions and the MIS office. Aside from the absolute gaps mentioned above, the specific issues encountered in Bureau activities and functions must be addressed in order to improve environmental quality.

#### a. Enforcement

##### **Inspection Activity**

***(1) The proportion of the regulated community under the inspection-monitoring system is small. The universe of regulated establishments has not been established. And there is no prioritization of facilities to be inspected.***

According to the Planning and Management Services, EMB maintains an industrial database of 25,000 firms. This is assumed to be the universe of industries under some form of environmental regulation. The total number of registered industrial establishments in the country as of 1999, however, was 826,783. EMB's database thus covers only a little over 3% of the total registered industries. This suggests that most of the registered industrial firms are not even in the Bureau's radar screen. The actual size of the regulated community has not been verified. Also, the number of establishments and priority facilities that would be under inspection has not been established. Based on the number of firms in EMB's database, if all of these establishments were to be inspected, only two facilities need to be inspected in a week.

How are the establishments selected for inspection? Based on last year's accomplishment reports, the EMB inspected a total of 14,111 facilities, and issued 6,057 permits. **Table 15** presents the number of inspections and surveys conducted by the EMB last year.

**Table 15**  
**Number of Surveys and Inspections**  
**Environmental Management Bureau, 2001**

Regn	Total No. of Registered Firms	Total No. of Firms in DENR Database	No. of Firms PD 984		No. of Firms RA 6969		PD 1586	
			Inspected	Surveyed	Inspected	Surveyed	Projects Monitored	Surveyed
NCR			1203	0	12		647	46
CAR			359	8	4		96	14
1			171	84	5		387	225
2			132	74	5		399	24
3			693	12	1		493	29
4A			442	51	8		763	155
4B			349	114	2		369	174
5			117	69	4		42	60
6			209	10	1		360	273
7			959	44	20		600	17
8			210	15	8		500	15
9			261	22	1		504	9
10			413	40	10		400	28
11			401	14	11		227	8
12			130	10	4		100	10
13			72	23	5		233	92
			6121	590	101		6120	1179

Source: EMB Planning, 2002.

There are at least three formal considerations in the inspection of facilities, namely

- a) the renewal of permits;
- b) the validation of public complaints; and
- c) the follow-up of remediation commitments made by the firm on previous violations.

The last two conditions represent the minimum coverage of inspection activities, hence they do not provide a basis for streamlining efforts, while the first is routinely. The regional director or the environmental quality division chiefs would also consider past compliance records, the possible scale of environmental damage, and the ability of the facility to control and monitor pollution. These considerations, however, are very fluid and are arbitrarily subject to available resources, official development assistance programs, and the preferences, thrusts, and personalities of the Department Secretary or Director.

Discussions with EMB regional offices reveal that decisions on facilities to be inspected were determined on an "ad-hoc" basis. Some guidelines may have been given, but they were either quite general and gave discretion to the interpretations of the RO or they did not specify the priority establishments for inspection. In some cases, inspections were conducted mainly for convenience or accessibility of the facility, rather than an objective assessment and plan to maximize environmental benefits.

There are no formal guidelines to determine the number of inspections and the prioritization of facility inspection. The Bureau's mission statement is not translated in an inspection priority plan.

***(2) Selection of facilities for inspection is not informed by available information, such as the self-monitoring reports. This information source is not taken seriously by both EMB inspectors and pollution control officers. It has not been improved to provide guidance in the inspection process.***

While the Bureau's mission statement may provide a direction to inspection activity, the establishment's self-monitoring reports (SMR) can inform the decision to select facilities for inspection. Unfortunately, the SMRs contain inadequate, if not useless information. On the one hand, most of the required information are lacking or not made available by the pollution control officers (PCO). Most regions, on the other hand, except for Region VII, do not make conscious efforts to review and validate the SMRs. This negligence thus reinforces the poor quality of reports.

Action has not been taken on the quality of PCO reports. While failure and falsification of reports can result in the suspension of a PCO or the revocation of his accreditation, regional enforcers have not exercised this power. To date, there has neither been any PCO suspension nor revocation of accreditation.

### **On the Detection of Violation**

***Various factors have contributed to delay of the enforcement process. These factors include the uneven implementation of inspection, the involvement of regional enforcers in other tasks, the ambiguous guidelines on the duration of the permit to operate (PTO), the practice of unannounced visits, and the resistance of firms to inspection and other regulatory processes.***

- Adequate inspection protocols, such as those contained in the Air and Water Quality Monitoring Manuals or the media-specific checklists are available and have been used by senior staff as a guide for inspection. However, they have not been used officially, and new staff members have not been trained in the use of the protocols. This lack of training has, therefore, resulted in the uneven implementation of the protocol, in terms of comprehensiveness in scope, documentation, sampling procedure, and data quality. In turn, poor inspection has delayed the enforcement process.
- Enforcement has also been delayed by the involvement of regional EMB enforcers in other tasks, apart from the conduct of inspection activities. These other tasks have contributed to enforcement delays because they consume a large part of the enforcers' time. Regional EMB inspectors are not exclusive to inspection activities. They perform other tasks, such as assisting permit applicants on the process works and its requirements. Though important, these activities have not been automated or installed in the internet, as earlier planned. It may be noted that this internet service has greatly eased the administrative load of the EIA Division in providing assistance to its clientele, and enabled it to focus on other tasks, like inspections.
- A great amount of inspection time is devoted to renewal of permits. It is mistakenly assumed (based on a reading of PD 984, RA 8749, and RA 6969 IRR) that the Permit to Operate has a one year life that authorizes the continued use of air and

water pollution control device of pollution source. Permit life is a matter of internal guidance by the EMB. It has not viewed the action to minimize permit re-issuance as a prudent means to deal with its given inspection capacity.

- Most regional inspectors prefer unannounced over announced inspections because it is assumed to be a means to catch the sources in its normal operation and prevent establishments from delaying the process. A drawback of unannounced inspection, however, is the delay in the completion of the activity simply because the pollution control officer has not prepared the necessary emission quality and process information required by the inspectors. Given the limited number of inspectors and support resources, these insignificant delays are compounded, and they consequently constrain the number of firms for inspection.
- The resistance of some establishments to inspection and other regulatory mechanisms has also caused delays. A review of PAB cases reveals how a firm was able to resist EMB's exercise of its visitorial power for more than two decades and refuse receipt of multiple cease and desist orders. Even if charged with a criminal case, it defied environmental controls by further increasing its polluting activity.

### **On the Adjudication Process - Assessment of PAB**

At the onset when the EMB Legal Division had several lawyers, it served as the PAB Secretariat. However, with a decline in the number of lawyers and the staff of the Legal Division, the PAB Secretariat was transferred to the Environmental Quality Division.

Hence, the EMB Legal Division and the PAB have a very weak linkage in terms of pollution adjudication, an important aspect of enforcement. While one of the EMB lawyers attends the PAB meetings, the said lawyer who is currently on leave reports to the office of the Director and not to the Legal Division.

It has been the practice of the DENR Secretary to delegate the Chairmanship of the PAB to the USEC for Legal Affairs. The USEC assigns one of his lawyers to also attend PAB meetings with him. The EMB Director also delegated his PAB responsibilities to the EMB Assistant Director who is a lawyer. While the PAB has been operating under this arrangement, the absence of an EMB Legal Division-based lawyer weakens the link between adjudication as an enforcement function and the other functions of policy and planning, education, fund generation and research.

A review of various PAB cases provides a number of findings and insights to better understand and improve the adjudication process. The following findings are based on a review of 33 PAB cases taken from the IEMP (1996) study and ten facility-specific enforcement files selected by EMB senior staff in Regions VII and XI (the SEECCTA pilot regions)<sup>44</sup>. **Appendix K** provides a summary of the IEMP findings and recommendations.

An assessment of both sample cases yields the following observations.

- There has been an earlier reliance on the use of *ex-parte* CDO to force compliance and an aversion on the part of EMB to use fines. The application of fines to violations came later as noted in the second sample. Fines, however, were mainly imposed on small firms and for minor violations, such as failure to renew the permit to operate, submit PCO quarterly report, and install minor control equipment. The application of fines at a later time was also softened by inflation. Inflation has severely eroded the deterrence value of fines such that fines levied in 1994 were only 4.4% of its original value in 1976.
- The resistance of violators to pay and their actions to contest EMB's sampling and monitoring procedures have eroded the deterrence value of fines. Violators have also asserted that available guidelines had not been published or subjected to public hearing. As the tool of last resort came to be more frequently used, the CDO's deterrent value has also been weakened. The loss of its efficacy came together with the multiple issuance of temporary lifting orders (TLOs). These multiple TLOs of the PAB on the same violation<sup>45</sup> have contributed to the long period required to achieve compliance. Based on the 3 cases reviewed by SEECCTA<sup>46</sup>, it took 1,425 calendar days, on the average, to achieve compliance (see **Table 16**).
- A positive feature of the present adjudication process is the capacity of the technical conferences to initiate and achieve compliance. Compared to the earlier sample cases of IEMP where 20 out of 83 achieved compliance, 9 out of the 10 SEECCTA project cases achieved compliance (See **Figure 3**). The technical conference is the venue where the nature of violation is discussed and remedial measures are required from the firm. This positive quality, however, is discounted by the long period of time before compliance is attained.

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<sup>44</sup> These ten cases were reviewed from May 27 to 31, 2002 to establish how and when enforcement responses made by the regional offices and the Pollution Adjudication Board (PAB) are bringing these firms into compliance. The range and preference of enforcement responses and specific dates were recorded. A profile was prepared for each case containing the following information: date of violation detection, presence and nature of public complaint, frequency and dates of technical conferences, dates CDO was recommended by the Regional Office, issued by the PAB, and served by the Regional Office, date compliance was initiated, date and duration of Temporary Lifting Order, date compliance was achieved, and amount of fine assessed. (REECS. 2002. SEECCTA Second Progress Report)

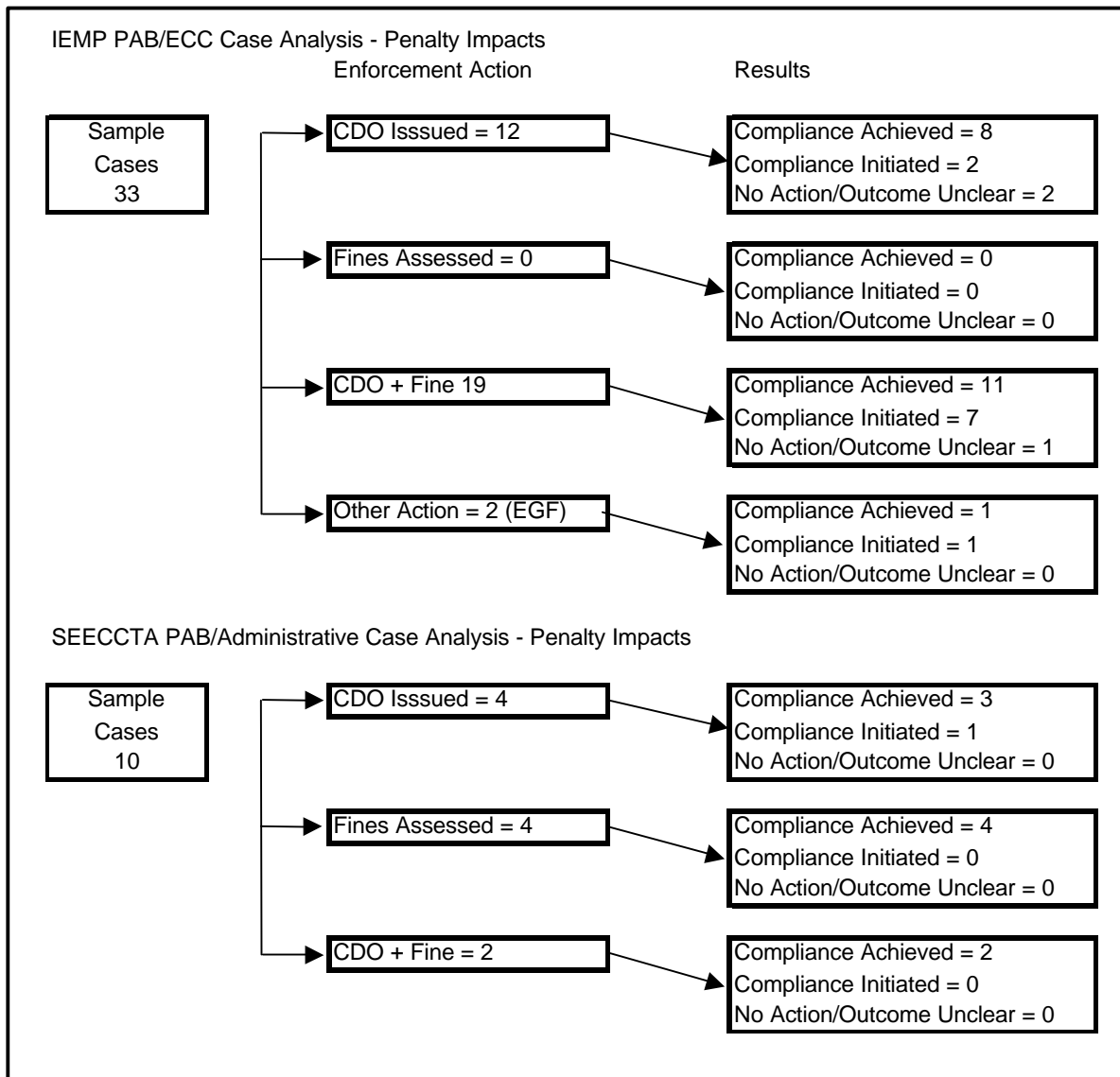
<sup>45</sup> The same conclusion was drawn in the IEMP Study

<sup>46</sup> Only records from RS& Sons, Apo Commodities, and Herminio Teves cases allowed this estimate.

- Negotiations in the technical conferences have been quite long that it gives the impression that the conference has been used by the violator to delay compliance. On the average, it took the EMB Regional Offices more than a year (498 calendar days) from the date of violation detection to issue an *ex parte* CDO (**Table 16**).
- The long period of time before compliance is achieved suggests the need to rationalize the adjudication process and avoid unnecessary delays. The failure to meet deadlines (e.g. the implementation or completion of remediation plans or the submission of revised remediation plans) has not been subjected to fines or penalties. The achievement of compliance has also improved in some cases with the involvement of the local press.
- Delays in enforcement have also come about from the failure to resolve jurisdictional conflicts with the LGU, apart from the resistance of violators. The limited environmental consciousness of Municipal Trial Court judges has also posed a stumbling block to the resolution of pollution cases.
- Both violators and enforcers have approached pollution cases as mere changes in air or water quality or their divergence from environmental standards. The case of mining company's pollution of a body of water shows that if the polluter is able to effect massive neutralization of wastewater and undertake breach sealing as a remedial action, the company may cease to be a violator. It may only be fined for the number of days it has exceeded allowable effluent levels. Payment has neither been charged for the impact of fish kills due to wastewater discharges on the livelihood of fisher folks nor on the health damages or risks inflicted on the local community.
- There are other cases, apart from the above mining wastewater problem that shows the inability of the enforcement system to correct environmental damages and the adverse health and livelihood impacts caused by the violation. Enforcers have been unable to impart to both the court and the general public the concern and knowledge about the public threats and risks to safety, health, and general welfare of such violations. Local Courts have dismissed the criminal cases lodged by the regional offices on polluting firms, and even disallowed entry on the grounds of the bureau's lack of authority to prosecute.



**Figure 3**  
**IEMP and SEECCTA Case Analysis of Enforcement Action and Its Impacts**



Source: REECS. 2002. *An Assessment of EMB's Response to Environmental Violations*. In SEECCTA Second Progress Report.

- The availability of proof or evidence that a violation has threatened public welfare and the quality of the environment, however, does not complete an enforcement case. EMB has to demonstrate that a remedy for the violation is available and affordable. Though this condition is not the responsibility of the enforcers, information

on the availability of feasible remedies is critical in negotiating compliance. This is affirmed in some enforcement cases<sup>47</sup>.

- An enforcement case must be able to determine the ability of the violator to pay monetary penalties, an area that needs a substantial effort from the EMB. The IEMP study has provided the following substantial recommendations to improve the fines.
  1. Increase the PD 984 administrative fines on effluent limit violations to compensate macro-economic changes since 1976. Adjustments to be made on 3-year moving average of inflation rate.
  2. Revise PAB Resolution 10 series to include "ability-to-pay" multipliers.
  3. EMB should assess and collect fines in every case of proven violations
  
- There are no formal guidelines on what enforcement to take for a variety of non-compliance, and this has resulted in the uneven implementation of environmental programs, if not an unfair treatment of the violator. EMB regional staff people have conferred that the process of responding to violations, in addition to the general requirements of PAB Resolution 1 series on pleadings and procedures, has evolved through time, and has been shaped by experience and the discretionary judgment of the Regional Director. The application of discretionary judgment has not ensured evenness and fairness of action. There is a need to limit this latitude through the establishment of well-defined response criteria.

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<sup>47</sup> A banana chips and snacks manufacturing firm in Region XI and a sugarmill in Region VII provide illustrative case material. In the latter, for instance, the RO recommended detailed treatment technologies and even the arrangement of the ponds .

**Table 16**  
**Average Response Times on Violations**  
**Environmental Management Bureau**

Facility Name	Region	Date to Tech Conference from Detection (days)	Date Notice of Violation Served from Detection (days)	Date CDO was Recommended from Detection (days)	Date CDO was Issued from CDO Recommended (days)	Date Compliance was Initiated from Detection (days)	Date Compliance was Achieved from Detection (days)
<b>PAB Cases</b>							
RS and Sons Commodities	XI	771	443	1079	49	662	3652
Apo Commodities Corp	XI	85	225	315	81	n.r.	1341
Country Livestock and Shemberg Marketing Corp	VII	84	n.r.	183	67	n.r.	n.r.
ASAF Minerals Corporation	VII	57	n.r.	n.r.	n.r.	32	1687
Herminio Teves	XI	3	220	n.r.	53	n.r.	509
ACMC	VII	n.r.	n.r.	416	405	343	1578
<b>Admin. Cases</b>							
Pepsi Cola	VII	407	4	n.r.	n.r.	1	5
Ferruci Fashion Trading	VII	115	121	n.r.	n.r.	n.r.	73
Vizmin Southwest Enterprise	VII	37	nr	Nr	nr	nr	68
	XI	31					188
							73
<b>AVERAGE ALL</b>		<b>177</b>	<b>203</b>	<b>498</b>	<b>131</b>	<b>260</b>	<b>917</b>
<b>AVERAGE PAB</b>		<b>234</b>	<b>223</b>	<b>498</b>	<b>131</b>	<b>260</b>	<b>1462</b>
<b>AVERAGE ADMIN</b>		<b>61</b>	<b>121</b>				<b>100</b>

Source: REECS. 2002. *An Assessment of EMB's Response to Environmental Violations*. In SEECCTA Second Progress Report.

## **b. Policy-Formulation and Planning**

### **Issues on Policy Formulation**

EMB's performance depends heavily on the effectiveness and strength of its policies. Policies that explicitly provide clear and concise guidelines contribute to the smooth implementation of activities. Unfortunately, the EMB has been hampered by outdated policies and guidelines and a limited capacity for policy analysis and formulation. These have prevented the Bureau from confronting particular environmental concerns and issues and taking appropriate action.

As discussed earlier, one of the main reasons why the EMB has failed to pursue some of its directives is the absence of clear guidelines and standard operating procedures. Mechanisms that govern and enhance the implementation of certain activities are either incomplete or unavailable. Looking back at the previous assessment, 80% of the total number of absolute gaps identified is attributed to the lack of formal guidelines and SOPs. This fact strongly suggests that the EMB should consider the crafting of policies and guidelines of utmost priority.

The only unit within the EMB with activities in the policy area is the Legal Division. One of its regular functions is the review of policy and proposed administrative orders. Since the division consists only of two lawyers and a paralegal staff, its contribution to policy analysis and development has been severely limited.

In the absence of an EMB policy division, the work of policy formulation and assessment is undertaken internally by ad hoc committees or externally by project consultants, if not by the policy unit of the DENR. If RA 6969 were strictly followed, however, the responsibility for policy development should have been with an Inter-Agency Technical Advisory Council.

Aside from the above issues concerning policy formulation and planning, the other issues pertaining to this EMB function include:

- The ineffective system of keeping track of the staff's performance;
- The need to clarify policy directions and lack of proactive policies;
- The inadequacy of approaches and structures to address gray areas in environmental management; and
- The lack of sufficient incentive schemes, and the presence of conflicting and confusing policies emanating from management that result in different interpretations, and consequently, in uncoordinated actions.

## **c. Research and Development**

One of the functions of the EMB, as specified in PD 984 is to conduct scientific experiments, investigations and research that aim to discover economical and practical methods of preventing water, air, and land pollution. The heavy dependence of environmental enforcement on the capability of the EMB to analyze samples, e.g., water and air (gas) collected during monitoring and inspection underlie this specification.

Samples have to be collected using a standard procedure, sent to an environmental laboratory not later than a certain time period and then analyzed promptly for their physical and chemical constituents. This process is particularly critical for pollution cases, where the findings of the EMB laboratory (regional or central) will prevail over findings of other laboratories. Thus, the EMB regional and central laboratories and their staff play an important leadership role in this area. In a sense, EMB's research function is closer operationally to enforcement than to the other management functions like policy formulation.

The EMB Central Office environmental laboratory is located beside the EMB Building in the DENR Compound, Visayas Ave., Diliman, Quezon City. This central laboratory has a floor area of 1,100 sqm. It is managed by the EMB Research and Development Division (RDD). The DENR-EMB JICA Proposal for the Construction of the "National Environmental Management Center and Regional Environmental Laboratories" (August 2001) observed that the EMB Central Office laboratory is capable of conducting analysis of the following environmental media:

Environmental Media	Number of Parameters
Water and wastewater	27
Ambient air and stack emissions	19
Sediment and biota	6
Acid deposition	10

The specific parameters for the environmental media and the corresponding laboratory fees/charges are found in DENR Administrative Order No. 20<sup>48</sup>, series of 1994. Waste characterization and treatability, biodegradation and toxicity tests can be performed but on a limited scale only. The JICA proposal noted that "the laboratory building is barely enough to contain existing equipment. Under the circumstances, the following activities, therefore, could no longer be accommodated: hazardous waste sample preparation, chemical testing and reference sample preparation."

### **Current Efforts<sup>49</sup> to Improve Research Capabilities**

#### ***ISO 17025 Certification***

In line with its upgrading efforts, the EMB Central Office Laboratory is working for its certification under 17025 or Philippine National Standard (PNS) 17025: General Requirements for the Competence of Testing and Calibration Laboratories. Hence RDD is conducting a review of its analytical procedures to conform to these standards.

<sup>48</sup> DENR Administrative Order No. 20. 1994. *Schedule of Laboratory Fees for the Environmental Management Sector.*

<sup>49</sup> JICA Expert-Environmental Planning and Management Adviser Working Group, Capacity Development for Environmental Management in the Philippines," March 2002 Draft.

### ***Environmental Laboratory Recognition (ELR) Scheme***

The RDD is also implementing the ELR Scheme, which seeks to recognize other DENR (e.g., Mines and Geosciences Bureau's PETROLAB) and private environmental laboratories with the capability to analyze environmental samples using DENR-recommended methods. The ELR scheme entails the conduct of proficiency testing for DENR recognized and applicant laboratories to assess their capabilities. In proficiency tests, samples with known concentration of analytes are distributed to the participating laboratories. The analytical performance of the laboratory is then assessed statistically. Some of the EMB staff had undergone training in the conduct of proficiency tests including the preparation of proficiency test samples. As of August 2001, 23 laboratories had been recognized. At the time of the study, an additional 45 laboratories were applying for DENR recognition.

### ***Partnership with the Private Sector***

Some regions coordinate with the private sector with regards to the use of monitoring equipment and laboratory facilities. For example, EMB-CAR's laboratory can only analyze TSP in stack samples. It, therefore, entered into a partnership with Texas Instruments (TI), Baguio City. TI allows the EMB to use its stack sampler equipment and access its laboratories in order to analyze sulfur dioxide in addition to TSP.<sup>50</sup>

It is important to note based on previous assessments, however, that one of the major setbacks of the EMB is its research capabilities. With the current pace of technological influx, the EMB staff should be aware, if not directly exposed to new innovations and technologies. Presented below are some of the issues and concerns regarding the EMB's research capabilities.

### **EMB Research Capabilities**

An assessment of laboratory facilities led the JICA to conclude in a proposal that, "EMB facilities are still inadequate to host the 'clean room' required in the proficiency test sample preparation and the operation of the reference laboratory.

With its laboratory facilities, the EMB Central Office RDD has only one technical personnel capable of repairing and maintaining laboratory equipment. Most regions send their equipment for repair to the EMB Central Office or to a repair center within or near their region. They find difficulty in purchasing spare parts for their equipment since most of these are not available locally and have to be ordered abroad, requiring a long time before the equipment can be reused. Other regions claim that they were not provided with the equipment's operations manual. A common complaint is that almost all regions do not have any staff trained in the repair and maintenance of laboratory equipment.

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<sup>50</sup> Proceedings of the JICA-EMB Acid Deposition Monitoring, Air Quality Management and Capacity Development Seminar in Baguio City, September 2001.

#### **d. Education**

One of the main concerns that have been overlooked is the development or retooling of EMB's personnel and staff. Personnel and staff are essential to the success of any organization. They constitute the critical core or prime movers in any organization's operations. Hence, adequate training and development must be given to them.

The EMB provides some training for its personnel and staff. But they have been clearly inadequate. The Bureau has still to address training and human resource development issues that include:

##### **Limited Masteral and Doctorate Degree Holders in the EMB Staff**

EMB personnel, as a result of long years in the service, have a deep well of experiences and technical capability to confront environmental management issues. However, the Bureau should not be contented with its current knowledge base. Faced with the inadequate resources, familiarization with the issues in environmental management and participation in training programs could be potent tools for enhancing the Bureau's core competencies. Moreover, EMB staff should aspire to acquire more knowledge and skills comparable to those in the academe and the private sector.

At the time of the study, only around 16 percent of EMB staff have masteral degrees. Only one EMB regular staff has a doctorate degree. This is a disadvantage as it could lead to the staff's feeling of inferiority vis-à-vis its clientele--the private sector, who hire consultants with doctorate degrees to negotiate with the EMB staff regarding their environmental compliance to environmental requirements.

##### **Inadequate Training Provisions for Rank-and-File Staff of the Bureau**

Efforts to provide adequate training and other human development activities are continuously pursued by the EMB. However, past activities such as seminars and trainings were focused at the level of division directors or section chiefs, resulting in varying degrees of knowledge and awareness of legislative and regulatory requirements among the Bureau's personnel. This flaw could be attributed to the absence of a comprehensive and focused human resource development plan.

#### **e. Fund Generation and Management**

While PD 984 and PD 1586 do not have absolute gaps, in terms of unfulfilled directives, relative gaps pertaining to the quality of the performance of fund generation and management activities exist. As a case in point, the Pollution Adjudication Board could have collected more fines and penalties if more firms were frequently monitored and penalized for violations under PD 984.

Furthermore, since these fines and penalties accrue to the national treasury and are not plowed back to the EMB, there is no incentive for the EMB ROs to step up their monitoring efforts by investigating pollution complaints. There is also a lack of

transparency in the adjudication process since PAB hearings are not generally open to the public.

Despite the gaps, the EMB nevertheless initiated efforts such as the design of an environmental users' fee for firms discharging wastewater to waterbodies. Its implementation will be pilot-tested this year once the IRR is issued by the DENR Secretary.

PD 1586 and DAO 96-37 provide funds, which are now being utilized by EMB, the project proponent and the multipartite monitoring team. However, the amount of these funds, like the environmental guarantee fund, does not take into consideration the potential risks, the marginal cost of potential damages and the marginal cost of remediation.

### **Issues in Fund Generation and Management**

Adequate funding is the key to solving most of the EMB's problems and gaps. It could empower the EMB to increase its manpower, purchase necessary laboratory and monitoring equipment, and provide the necessary incentives for its personnel. In so doing, the EMB could improve its enforcement capabilities and streamline its policies.

### ***Administrative Procedures***

The financial administration of special funds starts with the collection of these funds from their sources. The current collection consists of fees, fines and penalties. Collection from these sources is necessarily a component of existing systems of granting permits and monitoring and enforcement since fees, fines and penalties are imposed within these systems. The procedures for granting permits and monitoring are well defined at the level of EMB Regional Offices. Although they are not exactly the same for the pilot Regional Offices, they comply substantially with the legal requirements.

Since the personnel of the EMB Regional Offices originate from the Environmental Management and Protected Area Services (EMPAS) of DENR Regional Offices, they have basically adopted the DENR practices and procedures. The procedures may have been modified to take the limited human and financial resources of the EMB Regional Offices into account. While strictly imposing uniform procedures may not be practical given such limitations, it is important to underscore the need for the uniform implementation of minimum legal requirements and enforcement of environmental standards across the country, mindful of the nuances underlying current regional variations.

Under current procedures, the rate of collection depends on the effectiveness of the monitoring and enforcement activities of various technical units. The Order of Payment is issued to the applicant/violator and is presented to the Cashier when it is paid. The applicant/violator will pay if and when he needs a permit, an ECC or the lifting of a CDO. An EMB Permit or an ECC are required when an applicant/violator is being inspected again, when there is a CDO and the applicant/violator wants to continue operations, or when he needs them to comply with other business requirements. No action is required



of the Cashier or Accounting or Administrative Office. Neither are they expected to possess information regarding the issued and unpaid Orders of Payment. The Cashier simply receives payments.

A case analysis discussed in the IEMP Policy Study on Fines and Penalties (1995), shows that only 35 % of the total fines assessed was actually collected.<sup>51</sup> One of the reasons cited was that the "procedures to enforce collection of fines are not well organized". Although there is an indication that the rate of collection might improve with the operationalization of the ERF (at least for PD 1586/984), the need to improve the system and procedures that would ensure collection of all assessed fees, fines and penalties has to be underscored.

### ***Accounting of Funds***

One of the findings of the 1995 IEMP study was the absence of comprehensive and centralized records on the collection of fines. The study thus recommended that the DENR Accounting Section keep records of all fines collected by the Regional Offices and create a separate account in their financial report.<sup>52</sup> If the DENR did not carry out the recommendation, it could have been due to a lack of interest on the part of the accountants to keeping track of the sources of the collection or income. Collections are lumped into an income account regardless of source because COA does not require disaggregated accounting.

The current system of recording receipts and income makes it hard or impossible for the Regional or Central Office accounting units to draft a comprehensive report of the fees, fines and penalties collected for the various funds. This is largely due to the cashiers' lumping of the collection into two or three income accounts (that may differ for different regions). The CO or Regional accounting units do not maintain subsidiary accounts or ledgers for each of the fund sources even if the money or funds are deposited in separate bank accounts. At best, the collections for ERF and the special funds are recorded in separate Cash Receipts Journals (CRJ), as observed from the records of Region XI. Even the monitoring of the ERF by the Central Accounting Office is done outside of the new government accounting system (NGAS). While NGAS would keep track of various funds and its sources, it has not yet been widely adopted because it is very new, a computerized system is not yet available, and there is a dearth of accounting personnel. It may also be attributed to the lack of interest on the part of management to use the accounting system for the generation of such report, which may be traced to the accounting unit's inability to come up with it in the first place.

If the special accounts in the national treasury or general fund are to be used through the special budget or special provision, there will be a need to accurately account for these funds. The will to do so will leave accounting units with no choice but to record them separately and more accurately within the NGAS.

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<sup>51</sup> Analysis of Fines and Penalties, Policy Study #2/10, Analysis of Current Regulatory Programs for Pollution Management (Volume II, Appendix B), IEMP, 1995. Page B-45

<sup>52</sup> IEMP , P B-47

### ***Managing Special Funds***

The relevant laws and corresponding implementing rules and regulations that provide for special funds ensure that monies generated from specified sources are earmarked for EMB's activities. Without such provision, the revenues that could be generated from such sources would revert to the General Fund and be available for other activities of the National Government. Without such provision, the EMB will have to compete with other agencies for a share of the General Funds to finance its activities. While a special fund is desirable, however, it would be advantageous only if the amount generated from specified sources is sufficient to fund the activities that the Bureau plans to undertake.

Special Funds become particularly disadvantageous when the EMB could not access supplementary funds from the General Fund because of the presumed existence and availability of a Special Fund. In such a situation, the creation of a Special Fund could limit the amount available for urgent activities only to the level generated from specified sources. Moreover, it may be well to point out that fines and penalties, which are among the specified sources, are not reliable or predictable sources of funds. Despite the potential disadvantages, however, it may still be desirable for EMB to have a Special Fund because it would give the Bureau some flexibility, if not control over the amount to be utilized for meeting strategic goals

An apparent constraint to the full operationalization and utilization of the special funds is the absence of clear procedures for gaining access to the funds. It would seem that while the Legislators are willing to provide a mechanism to ensure funding of specific activities, the Executive Branch is not quite ready or willing to implement such a mechanism. The existing rules and regulations suggest that a Special Fund is subject to a special budget process or provision in the GAA that seems to be more tedious than the annual budget preparation, if only because it would require persistent and constant follow-up of the DBM and/or Congress.

### ***Managing the Environmental Revolving Fund (ERF)***

A review of pertinent laws, rules and regulations reveals that the operationalization of the ERF did not fully comply with the requirements of PD 1586, the law that created the Fund. Nevertheless, COA representatives have allowed its utilization and the reports submitted to the DBM did not elicit any official action against using the funds. It would seem then that EMB could choose to continue utilizing the ERF up to the time an official action is taken by the appropriate agency or committee. However, it would be important for the concerned officials to take the necessary steps to ensure that all expenses charged against the funds are allowable and within the limits of applicable government budgeting, accounting and auditing rules and regulations.

The ERF provides the flexibility and convenience that EMB desires in funding the implementation of the EIA system, an EMB mandate that has received insufficient funding. At the moment, the ERF consists of the penalties imposed by PD 1586 and PD 984. With the creation of the AQMF in the Clean Air Act, the source of the ERF would be reduced to penalties for EIA violations and water pollution. In the event that the pending

bill on Clean Water Act is passed with a Water Quality Management Fund, the ERF will be limited further to EIA violations.

The AQMF and the Solid Waste Management Fund, as special accounts in the National Treasury, are creations of laws promulgated after 2000. With the trend of legislating new funds as special accounts in the National Treasury, the continued operation of the ERF may eventually be limited. Interestingly, however, the absence of clear or more expedient procedures for the operation of special accounts in the National Treasury, coupled with the adverse attitude of the finance and budget agencies towards special funds, offer very little prospect for EMB to have access to funds that are as flexible and convenient as the ERF.

## 6. CONCLUSION

The EMB was established in the context of increasing awareness of the environment and concerted efforts worldwide toward international agreements and national legislations to stem its deterioration. The Bureau's creation in 1987 was integral to the reorganization of the Department of Environment and Natural Resources (DENR), which, in turn, was a response to increasing pressure on national governments to ensure the sustainable use, development, management and conservation of the country's natural resources. At the time of its establishment, the Bureau was conceived as a unit providing technical assistance in and advice on EIA implementation, environmental management and pollution control matters.

While the EMB was directed in 1987 to formulate standards, rules and regulations on environmental quality and proper waste disposal as well as coordinate with interagency committees in the preparation of the State of the Philippine Environmental Report and the National Conservation Strategy, the Bureau had very limited policy-formulation, education and enforcement functions in the first decade of its existence, from 1987 up to 1999. As the above assessment shows, it did not have a clear-cut, formally established and adequately funded research agenda. Its education function was confined to providing limited information and disseminating annual or periodic environmental reports based on limited research. Its enforcement role was also constrained by limited research and policy formulation functions and adherence to the traditional command and control management approach.

Structural, financial and human resource considerations reinforced the relative insignificance of the EMB in its first few years of life. It began as a staff rather than a line bureau. Moreover, in comparison to the other bureaus in DENR, its budget was much smaller than those oriented toward resource development such as the FMB and the LMB. Its staff complement was also five to nine times smaller than these units. Furthermore, their technical capability needed upgrading.

As advocacy for sustainable development became stronger internationally and locally and as new laws to protect the environment were legislated, the DENR's mandate expanded and with it, that of the EMB. The enactment of the Clean Air Act in 1999 and the Ecological Solid Waste Management Act in 2000 in particular, enlarged the substantive and administrative scope of responsibility of the Bureau. No longer was it responsible only for enforcing standards for air and water quality, but also for substantively developing the framework, formulating policies and operationalizing specific directives in line with air quality, toxic and solid waste management. Methodologically, new approaches including air shed management, trading of emission rights, public disclosure and participative solid waste management involving the private sector, broadened the range of alternative approaches. Administratively, the EMB's mandate incorporated the strengthening of collaborative networks and linkages with various government agencies at the national and local levels, organizations, and communities.

The challenges posed by the expanded mandates brought the EMB's strengths and limitations to the fore. Despite time constraints, limited human and financial resources

and a more marginal position relative to other bureaus in the DENR, it has, to its credit began to operationalize and substantiate through various activities 83% of its enforcement directives, 85% of its policy and planning directives, 81% of its education directives, 71% of its research directives and 55% of its fund generation and management directives. All told, it has pursued activities along 79% of its 239 directives. There is also greater awareness among the leaders and staff of EMB of the gaps or unoperationalized directives on the one hand and the wider options the new developments have opened in terms of organizational approaches and opportunities for restructuring, on the other. More importantly, there is no dearth of commitment among the staff to addressing environmental issues in general and the limitations of the Bureau, in particular.

While the gaps in activities to operationalize the directives emanating for national laws and international agreement exist for only 21% of the directives, there is much more to be done in terms of substantiating each one of them and linking various activities along the directives under an environmental framework. The unfulfilled directives are enumerated in the first and second parts of this paper. The EMB is encouraged to examine them together with the forthcoming provisions of the Clean Water Act, prioritize the operationalization of the directives that have not been translated to specific programs, projects and activities, weigh the relative importance of each of the directives and prioritize among them.

It is also necessary for the Bureau to go beyond the current compartmentalization of projects and activities into functions and directives and address the broader issues raised in the paper: centralized control as reflected in the distribution of functions between the CO and the RO; lack of coordinative mechanisms within the Bureau and between the EMB and external entities such as the LGUs, other government agencies, the private sector and civil society groups; lack of guidelines and standard operating procedures that would bridge conceptual and strategic goals on the one hand and implementation on the other; lack of personnel and technical capability among the staff; lack of resources and the need to handle the administrative bureaucracy of accessing available funding, among others.

Addressing the above issues and concerns that constitute the limitations of the EMB entails the articulation of and commitment to a comprehensive environmental framework that will set the Bureau's policy directions and organizational thrust as well as the establishment of a structure organized along functional lines. Such a framework would guide the Bureau away from a structure organized along historically given laws within a programmatic or mandate-based approach focusing on air and water pollution to a more environmental management function-based organization that is tackled in the Strategic Plan. This would mean an integrated research program or division with comprehensive and interlinked databases and bringing together enforcement activities under one division regardless of the law, among others. Apart from a function-oriented organization, it is also important to stress the need for broad based participation in environmental management, which in turn requires extensive coordination and collaboration with stakeholders and the formation of strategic alliances among groups across the laws and concerns around which their advocacies and interests revolve.

The challenges facing a young undermanned organization like the EMB are daunting. However, the Bureau has among its staff and directors potential strategic managers who can map out creative short-, medium- and long-term strategies toward the revitalization and expansion of the Bureau as it transitions into a relatively autonomous line agency. Given the gravity of existing environmental problems, the Bureau cannot but move on and lead in negotiating a turn away from a degraded environment toward one that would enhance the quality of life of future generations of Filipinos.

## REFERENCES

**ADB Metro Manila Air Quality Improvement Sector Project. 2002. Air Quality Control Action Plan.** Asian Development Bank.

**Asian Development Bank.**

**Bennagen, M.A. November 1998.** *Estimation of the Environmental Damages from Mining Pollution: The Marinduque Island Mining Accident.* Economy and Environment Program for Southeast Asia.

**De Guzman, R.P.** *A Study of Internal Adjustments to Falling and Low Basic Salaries: The Case of Philippine Civil Service.* A Country Paper for the Philippines. ILO, Geneva.

**DENR Administrative Order No. 90-34. 1990.** *Revised Water Usage and Classification/Water Quality Criteria Amending Section Nos. 68 and 69, Chapter III of the 1978 NPCC Rules and Regulations.*

**DENR Administrative Order No. 90-35. 1990.** *Revised Effluent Regulations of 1990, Revising and Amending the Effluent Regulations of 1982.*

**DENR Administrative Order No. 92-29. 1992.** *Implementing Rules and Regulations of Republic Act No. 6969.*

**DENR Administrative Order No. 92-30. 1992.** *Guidelines for the Transfer and Implementation of DENR Functions Devolved to the Local Government Units.*

**DENR Administrative Order No. 94-20. 1994.** *Schedule of Laboratory Fees for the Environmental Management Sector.*

**DENR Administrative Order No. 97-23. 1997.** *Updating DAO 34, series of 1990, Otherwise Known as the Revised Water Usage Classification/Water Quality Criteria Amending Sections 68 and 69, Chapter III of the 1978 NPCC Rules and Regulations.*

**DENR Administrative Order No. 99-17. 1999.** *Updating Department Administrative Order No. 35, s. 1990 Otherwise Known as the Revised Effluent Regulations of 1990, Revising and Amending the Effluent Regulations of 1982.*

**DENR Administrative Order No. 2000-18. 2000.** *Chemical Control Order for Ozone Depleting Substances.*

**DENR Administrative Order No. 2000-81. 2000.** *Implementing Rules and Regulations of Republic Act No. 8749, The Philippine Clean Air Act of 1999.*

**DENR Administrative Order No. 2002-17. 2002.** *Defining the Organizational Structure and Major Responsibilities of the Environmental Management Bureau as a Line Bureau by virtue of Section 34 of the Philippine Clean Air Act of 1999 (RA 8749).*

**Department of Environment and Natural Resources-Environmental Management Bureau. 2001.** *JICA Proposal for the Construction of the National Environmental Management Center and Regional Environmental Laboratories.* DENR, Philippines.

**Department of Environment and Natural Resources-Environmental Management Bureau. 2002.** *Philippines Environment Monitor.* DENR-EMB and World Bank, Philippines.

**Department of Environment and Natural Resources-Environmental Management Bureau. 2002.** *Philippines Environment Monitor.* DENR-EMB and World Bank, Philippines.

**Environmental Management Bureau – Administrative Division.**

**Environmental Management Bureau.** Personal Communication.

**Environmental Management Bureau – Planning and Management Staff.** Personal Communication.

**Environmental Management Bureau. 2001-2002.** *Financial Plans for the Central and Regional Offices.*

\_\_\_\_\_. **2002.** *Report to DENR Secretary Elisea Gozun.* Unpublished.

**Environmental Management Bureau-Japan International Cooperation Agency. 2002.** *EMB-JICA Project-Type Technical Cooperation.*

**Executive Order No. 192. 1987.** *Providing for the Reorganization of the Department of Environment, Energy and Natural Resources, Renaming it as the Department of Environment and Natural Resources and for Other Purposes.*

**Francisco, H.A., D.D.V.D Antonio and A.K.A. Tardeo.** *The Oil Spill Incident in Bolinao, Philippines: Damages, Conflict Resolution and Power Analysis.* Unpublished.

**Fuentes, R.U. 2002.** *Environmental Management Framework Plan.* UNDP-ENR.

<http://www.inece.org>

<http://www.basel.int/pub/basics.html#intro>



**Institute of Philippine Culture-Ateneo de Manila University (IPC-ADMU). 2002.** *Capacity Building for Social and Environmental Assessments, Indigenous Peoples and Resettlement.*

**International Environmental Management Project (IEMP). 1995.** *Analysis of Fines and Penalties.* Policy Study #2/10. In *Analysis of Current Regulatory Programs for Pollution Management.* Vol. II, Appendix B.

**Japan International Cooperation Agency-Environmental Management Bureau. 2002.** *Acid Deposition.* Air Quality Management and Capacity Development Seminar Proceedings. JICA and EMB-DENR, Philippines.

**Japan International Cooperation Agency Expert-Environmental Planning and Management Adviser Working Group. March 2002.** *Capacity Development for Environmental Management in the Philippines.* Draft.

**Land Transportation Office. 2002.**

**National Statistical Coordination Board. October 2001.** *2001 Philippine Statistical Yearbook.*

**Presidential Decree No. 979. 1976.** *Providing for the Revision of Presidential Decree No. 600 Governing Marine Pollution.*

**Presidential Decree No. 984. 1976.** *Providing for the Revisions of Republic Act No. 3931, Commonly Known as the Pollution Control Law, and for Other Purposes.*

**Presidential Decree No. 1067. 1976.** *The Water Code of the Philippines.*

**Presidential Decree No. 1152. 1977.** *The Philippine Environment Code.*

**Presidential Decree No. 1586. 1978.** *Establishing an Environmental Impact Statement System, including other Environmental Management Related Measures and for Other Purposes.*

**Republic Act No. 3931. 1964.** *An Act Creating the National Water and Air Pollution Control Commission.*

**Republic Act No. 6969. 1990.** *An Act to Control Toxic Substances and Hazardous and Nuclear Wastes, Providing Penalties for Violations Thereof, and for Other Purposes.*

**Republic Act No. 7160. 1991.** *The Local Government Code of the Philippines.*

**Republic Act No. 8749. 1999.** *An Act Providing for a Comprehensive Air Pollution Control Policy and for Other Purposes.*

**Republic Act No. 9003. 2000.** *An Act Providing for an Ecological Solid Waste Management Program, Creating the Necessary Institutional Mechanisms and Incentives, Declaring Certain Act Prohibited and Providing Penalties, Appropriating Funds Therefore and for Other Purposes.*

**Resources, Environment and Economics Center for Studies (REECS), Inc. 2002.** *Second Progress Report.* Strengthening Environmental Enforcement and Compliance Capacity Technical Assistance (SEECCTA) Project. REECS and EMB-WB, Philippines.

**Ruzicka, I., A.L. Indab and C.M. Rufo, Jr. 2002.** *Coughing Up for Clean Air Incentive-Based Approaches to Controlling Air Pollution in Metro Manila.* Asian Development Bank, Manila, Philippines.

**The Philippine Environmental and Natural Resources Accounting Project.** Phase IV. USAID and DENR, Philippines.

**World Bank – Environmental Assessment Team. June 2000.** *Capacity Building in Social and Environmental Assessment, Resettlement and Indigenous Peoples. Pre-orientation on the DENR's Organizational Structure and Functions.*