

# **CONCEPT PAPER:**

## **Institutionalizing Eco-Industrial Development Concepts for Philippine Economic Zones**

**Prepared for PEZA by: Rita Lohani, Intern, UNDP**

## **Table of Contents**

### **Section 1: Philippines EID Profile**

<b>I.</b>	<b>Introduction.....</b>	<b>1</b>
<b>II.</b>	<b>Industrial Estates in the Philippines</b>	
	<b>A. Brief History.....</b>	<b>2</b>
	<b>B. Classification of Industrial Estates.....</b>	<b>3</b>
	<b>C. Development and Management Framework.....</b>	<b>3</b>
	<b>D. Legislation and Regulation on Industrial Pollution.....</b>	<b>4</b>
<b>III.</b>	<b>The Eco-Industrial Development Program</b>	
	<b>A. Basic Principles of EID.....</b>	<b>7</b>
	<b>B. EID in Asia.....</b>	<b>9</b>

### **Section 2: EID in the Philippines**

<b>IV.</b>	<b>Elements of Eco-Industrial Development in PEZA</b>	
	<b>A. Approach: Internalizing EID in PEZA.....</b>	<b>11</b>
	<b>B. Overview of 2004-2005 Activities.....</b>	<b>15</b>
	<b>C. Planned 2006-2008 Activities.....</b>	<b>16</b>

### **Annex**

- 1. Classification of Ecozones**
- 2. PEZA Organizational Chart**
- 3. PEZA's Management Roles (To be developed)**
- 4. Accomplishment Reports: 2004-March 2005**
- 5. PEZA EID Project Proposal: 2006- 2008**
- 6. EcoIndex Brochure/ Info Sheet (To be added)**
- 7. PEZA EID Brochure/ Info Sheet (To be added)**
- 8. Indicative Program Schedule for PEZA EID Program from 2006 to 2008**

## **I. Introduction**

The National Economic and Development Authority's (NEDAs) economic and development strategy includes economic growth and reduction in unemployment by, among others, encouraging and enhancing private sector initiatives and labor-intensive production. In particular, the government of the Philippines (GOP) promotes the establishment of globally competitive economic zones all over the country to attract foreign investors who are export producers or service exporters of information technology. GOP and industry aim to continue economic growth within a framework of ecological balance, adopting the concept of eco-industrial development (EID).<sup>1</sup>

Eco-Industrial Development is a framework for environmentally-friendly development. In the specific case of industrial zones, companies within zones and estates can improve their economic performance while minimizing their environmental impacts, by working with each other and other members of its community. A better understanding of EID might also be traced to the dual meaning of 'eco' in the term 'eco-industrial development'; 'eco' here refers to: (1) designing an industrial park/estate/zone based on its surrounding local and regional *eco*-system; and (2) developing an eco-industrial park/estate/zone that matches the resources and needs of its local and regional economy.

GOPs encouragement to the private sector to assume a more proactive role in industrial estate development has convened various groups within government and the private sector. The Philippine Ecozones Association (PHILEA) was organized in 1990 to develop well-planned world-class private industrial estates.<sup>2</sup> From the government's side, the "Special Economic Zone Act of 1995" lead to the establishment of the Philippine Economic Zone Authority (PEZA), an investment promotion agency and a government owned corporation, attached to the Department of Trade & Industry. PEZA grants fiscal and non-fiscal incentives to developers of economic zones, export producers, and I.T. service exporters.<sup>3</sup> PEZA ensures that all the locators within the economic zones they manage practice environmentally friendly business practices.

This paper will briefly discuss the history and statues of industrial estates (IEs) in the Philippines, provide an overview eco-industrial development (EID) concepts and its implementation in Asia, and finally, highlight PEZA's EID activities in the past and the agency's roadmap until the year 2008.

## **II. Industrial Estates in the Philippines**

### **A. Brief History**

As early as 1969, the first industrial estates in the Philippines were established in Baguio, Bataan, Mactan, and Cavite (See Table 1). Developed and managed by the Philippine

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<sup>1</sup> <http://www.neda.gov.ph>

<sup>2</sup> <http://www.philea.com.ph>

<sup>3</sup> <http://www.peza.gov.ph>

government, these industrial estates (IEs) were predominantly manufacturing electronics and garments for export. Over a relatively short period of time, other government-owned and private developers have recognized industrial estates as investment powerhouses.<sup>4</sup>

The Republic Act (RA) No. 7916 or the Special Economic Zone Act of 1995 (the "Act") was signed into law on 24 Feb 1995. The law was created to encourage economic growth through the development of special economic zones (SEZs). The Philippines Economic Zone Authority (PEZA), created out of EPZA (Export Processing Zone Authority), is a government corporation with a mission to contribute to the national effort of accelerating employment generation, particularly in the countryside. **As of May 2004, the number of operating and proclaimed industrial estates registered under the Philippine Economic Zone Authority (PEZA) reached 170.** These industrial estates aim to establish the Philippines as an export-oriented manufacturing economy to attract local and foreign investments.

<b>Table 1 : Government-owned Export Processing Zones<sup>5</sup></b>			
<b>Industrial Estate</b>	<b>Location</b>	<b>Area (in hectares)</b>	<b>Preferred Industries</b>
Bataan Export Processing Zone	Mariveles, Bataan	1,600.00	Light & medium industries
Baguio Export Processing Zone	Baguio City	113.70	Electronics & other high technologies
Mactan Export Processing Zone	Mactan, Cebu	150.00	Light & medium industries
Cavite Export Processing Zone	Rosario, Cavite	275.80	Electronics, garments, & light industries
<b>Total Area</b>		<b>2,139.00</b>	

## **B. Classification of Industrial Estates in the Philippines**

There are five main classifications of special economic zones (SEZs) (also known as Ecozones): (1) export processing zones, (2) free trade zones, (3) tourist/recreational centers, (4) agro-industrial economic zones, and (5) information technology parks. These are areas designated by the government for development into balanced agricultural, industrial, commercial, and tourist/recreational regions. Each *Ecozone* is developed as an independent community with minimum government interference. It administers its own economic, financial, industrial and tourism development without help from the national government. It also provides adequate facilities to establish linkages with surrounding communities and other entities within the country. (More details on the four Ecozones and Ecozone enterprises can be found in Annex 1.)

Industrial estates and parks fall under the export processing zone category of Ecozones. IEs are tracts of land subdivided and developed according to a comprehensive plan, continuously

<sup>4</sup> Asprer, Redentor "A Profile of Ecozones in Calabarzon", April 2001

<sup>5</sup> Taruc, Rafaelito H. and Raul V. Angeles, "Practical Approaches to Urban and Industrial Environmental Management: The Philippine Experience", March 1999

managed and have provisions for basic infrastructure and utilities. Some IEs have pre-built standard factory buildings and community facilities for the use of the community of industries.<sup>6</sup>

### **C. Development and Management Framework**

Services and facilities offered within IEs in the Philippines have come a long way. The first IEs developed in the Philippines only offered basic utilities, such as power and water. New IEs offer first-class services, such as centralized waste water treatment facilities, internal solid waste management programs, firefighting and safety services and underground cables. Further, many IEs are paying particular attention to the landscaping within IEs, making room for open spaces and parks.<sup>7</sup>

A number of private and government estate developers have included residential and commercial uses in planning and developing lands surrounding the industrial area (i.e. Carmelray Industrial Corporation (CIC), Cagayan Economic Zone Authority, Laguna Technopark, Lima Technology Center, and Luisita Industrial Park). Road improvement and construction are often part of the planning of an industrial estate. As some areas in the Philippines lack the proper infrastructure to facilitate the efficient transport of goods and services to these industrial areas, private developers often finance these infrastructure projects. The emphasis on function, services and aesthetics within IEs serves as a competitive strategy to attract investors to their estates.

Developers of fully occupied industrial estates are mandated by law to transfer the management of an industrial estate to the park's respective locator association. The turnover must be accomplished 5 years after the last lot sale. However, variations on the management of the estate still exist depending on internal dynamics.

### **D. Regulation and Legislation on Industrial Pollution Control**

PEZA as well as other agencies handling industrial estate development oblige developers to comply with the necessary requirements needed to avail of incentives. Monitoring by regulatory agencies is also conducted.

#### *Regulation and Monitoring*

The Philippine Economic Zone Authority regulates development in the areas by requiring developers to comply with standards and other legal documentation to ensure land sustainability as well as environment compliance. Some of PEZA's regulations are listed below:

- Registration with the Securities and Exchange Commission (SEC)
- Acceptance letter or reservation for the location of the proposed project

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<sup>6</sup> R.A. 7916: "The Special Economic Zone Act of 1995"

<sup>7</sup> Dutta, Madhurya K., "Country Profile on Industrial Estate Development in the Philippines", 2004, UNDP- EPIC Program

- Notarization ensuring proponent will not hire or exploit child laborers
- Environmental compliance certificate
- Lease Agreement or Deed of sale

In addition to PEZA, there are several government agencies tasked to plan, regulate, and monitor the development and management of IEs in the Philippines:

1. The Phividec Industrial Authority (PIA) was formed in 1974 is a government-owned corporation tasked to manage a 3,000-hectare industrial estate in Misamis Oriental in the southern part of the Philippines. The PIA identifies and develops sites in the country as prospective industrial areas. The PIA equips these areas with the necessary infrastructures to encourage the inflow of domestic and foreign investments.
2. The Bases Conversion and Development Act of 1992 (R.A. 7227), formed the Bases Conversion Development Authority (BCDA). It set the government's policy of converting military bases into productive civilian economic centers. Among the bases planned by BCDA are the former U.S. naval base in Zambales (Subic Naval Base, now SBMA) and the former U.S. Airbase in Pampanga (Clark Air Base, now Clark Development Corporation). A portion of a Philippine Military Base in Makati City (Fort Bonifacio) was converted into a residential, commercial, and business center by BCDA. The Special Economic Zones converted by BCDA are managed by its subsidiaries, affiliates and attached authorities.
3. The Zamboanga City Special Economic Zone Act of 1995 (R.A. 7903) is in charge of planning and developing the Zamboanga City Special Economic Zone and Freeport. The economic zone covers approximately 15,500 hectares. Out of the total area, about 17% is occupied. Total private investments in the area have totaled PhP160.1 million as of 1999.
4. The Cagayan Special Economic Zone Act of 1995 (R.A. 7922) mandates the Cagayan Economic Zone Authority (CEZA) to manage and operate the Cagayan Freeport. CEZA's three major development thrusts include agro-industry, transshipment, and tourism.

### *Environmental Legislation*

The Philippines has several environmental requirements for industries.

#### Environmental Protection and Natural Resource Management Policy

- i. Presidential Decrees (PD) 1151 declared three environmental policies of the state: a) Create, develop, maintain and improve conditions under which man and nature can thrive in productive and enjoyable harmony with each other; b) fulfill the social, economic and other requirements of present and future generations of Filipinos; and c) insure the attainment of environmental quality that is conducive to a life of dignity and well-being. PD 1151 also mandated the creation of the Environmental Impact Statement (EIS) system:

- ii. PD 1152 provided the framework and mandate to implement a comprehensive program of environmental protection and management (air and water quality, and waste management). Basic components of air and water quality management include standards, regulation and enforcement (monitoring, surveillance, licensing, and permitting of pollution control facilities).
- iii. PD 1586 establishes the Environmental Impact Statement (EIS) System, which is currently the centerpiece program governing industrial activity and has been the focus of several modifications and refinements.<sup>8</sup> The system ensures that no adverse environmental impacts are generated by requiring all action, projects, and undertakings to conduct an EIA at the planning stage and to secure an Environmental Compliance Certificate (ECC) as proof of technical and procedural compliance. DAO 5 s 20009 recognized the need to streamline the EIS compliance process by giving co-located industries, such as industrial estates/Ecozones and growth centers, the opportunity to prepare a single environmental statement and secure a “programmatically” ECC, eliminating the preparation and review of multiple and often conflicting environmental statements and reducing program preparation and transaction costs.
- iv. PD 984, or the Pollution Control Law, provides the policy to prevent, abate, and control pollution of air, land, and water.

#### Air Quality

- i. Republic Act 6969 or the toxic substances and nuclear and hazardous waste control act of 1990 requires:
  - Registration of hazardous waste generators
  - Registration of hazardous waste treater.
  - Registration of hazardous waste transporter
- ii. Republic Act 8749 or the Philippines Clean Air Act of 1999 mandates all proposed or planned construction or modification of air emission sources that have the potential to emit 100 tons/year of any of the regulated air pollutants to secure an authority to construct from the EMB.
- iii. Republic Act 8749 also requires a Permit to operate for each source emitting regulated air pollutants. Facilities with more than one source may group the `sources under a single permit application.

#### Solid Waste

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<sup>8</sup> Rules Implementing PD 1586, 1979 (NEPC); Presidential Proclamation 2146: Proclaiming Areas and Projects as Environmentally Critical, 1981; Office Circular No. 3, Technical Definition and Scope of Environmentally Critical Areas and Projects, 1983 (NEPC); DAO 21 Amending the Implementing Rules of PD 1586, 1992 (EMB); DAO 11 s 1994 Programmatic Compliance (EMB), DAO 37 s 1996 Revising DAO 21; DAO 5 s 2000, Revising DAO 11 s 1994.

- i. Republic Act 9003 or the Ecological Solid Waste management Act of 2001 provides that operation of material Recovery Facilities (MRFs) and controlled dump facilities comply with the minimum standards/ requirements prescribed by the implementing rules and regulations of this law.  
An environmental compliance certificate (ECC) is not required in the establishment of an MRF, as long as it does not include a composting component with a daily capacity of more than 15 tons. Likewise, an ECC is not required for controlled dump facilities within the allowed operation period of five years from the effect of this act.

#### Water Quality

- i. Republic Act 9275, Philippine Clean Water Act of 2004, mandates the Department of Environment and Natural Resources (DENR) to implement a comprehensive water quality management program to guarantee effective water utilization and conservation. The state policies include promoting environmental strategies, economic instruments, and control mechanisms to protect water resources. Industries found to be pollution water bodies in excess of the existing acceptable standards will be responsible to contain, remove and clean-up the water body at its own expense.

#### Toxic Chemicals and Hazardous Waste Management

- i. Republic Act 6969, the Toxic Substances and Hazardous and Nuclear Waste Control Act, restricts or prohibits the importation, manufacture, processing, sale, distribution, use, and disposal of chemical substances and mixtures that present unreasonable risk and/or injury to human health or the environment. It also prohibits the entry and transit of hazardous and nuclear wastes and their disposal into Philippine territorial limits. The Act encourages research on toxic chemicals and hazardous and nuclear wastes.
- ii. The Basel Convention on the Control of Transboundary Movement of Hazardous Waste and Disposal encourages environmentally sound management of hazardous waste and ensures that member countries do not receive unwanted shipments of waste.

### **III. The Eco-Industrial Development (EID) program**

#### **A. Basic Principles of EID**

Environmental protection and economic growth are no longer viewed as independent and conflicting goals. More and more companies even from developing countries are now adopting the sustainable development framework in their business operations and are finding out that doing so makes good business sense. Through resource use optimization, adoption of cleaner



technologies, waste minimization, and pollution prevention techniques, companies have been able to demonstrate that improving their environmental performance also improves their profitability.<sup>9</sup> Industrial Ecology and its application through EID are receiving growing attention from estate developers, the industrial community and government authorities. Several initiatives and projects throughout the region are presently discussing how to implement the new principles for sustainable industrial development.

### *What are the Goals of EID?*

According to Ernest Lowe, EID encapsulates a broad range of goals:<sup>10</sup>

- Resource efficiency in energy, materials, water, and transportation, with the cost savings gained through higher efficiency;
- Cleaner production through good housekeeping, reduction and substitution of toxic materials, strict control of emissions, separation of by-product or residual materials, etc.;
- Use of renewable energy and materials to replace fossil fuel sources and finite material supplies;
- Rehabilitation of existing buildings to higher energy and environmental standards and use of green architecture and engineering in new facility and infrastructure design;
- Enhancement of quality of life and economic development in neighboring communities through projects between industry and community government and community-based organizations.
- Ecological site planning and utilization based upon clear understanding of the carrying capacity of air, water, and ground systems and the nature of remaining native ecological systems.
- Establishing environmental management systems such as ISO 14000 with objectives and indicators informed by eco-industrial development, not only compliance with regulations.

These goals can be achieved by<sup>11</sup>:

- Fostering practical connections between the uses of waste as resources (instead of being thrown away, it can be used as inputs for other businesses)
- Promoting an approach to doing business that involves connecting within and across industries and interacting with the communities where businesses are located
- Changing poorly thought out practices and processes that cause wasted energy and resources.

### *Who are the stakeholders?*

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<sup>9</sup> <http://members.tripod.com/ieprime/>

<sup>10</sup> Lowe

<sup>11</sup> Lowe

EID integrates business, environmental excellence, and community connections to create economic opportunities and improved ecosystems. EID is about *synergies* of relationships – for PEZA, this involves building partnerships between government agencies, community members, businesses (e.g. companies in an economic zone as well as service providers), and industrial developers and zone managers (e.g. PEZA). Relationships among the zone’s locators and its community are critical, because companies are not the only ones who can make a zone, park or estates qualify as an eco-industrial park or zone; they need to work with its stakeholders from government, civil society and the private sector.

*Who and What are the Benefits of EID?*

<b>Table 2: Potential Benefits of Eco-Industrial Development</b>		
<b>Communities</b>	<b>Environment</b>	<b>Business and Industry</b>
Expanded local business opportunities	Continuous environmental improvement	Higher profitability
Improved tax base		Enhanced market image
Community pride	Reduced pollution	High performance workplaces
Reduced waste disposal costs		Improved efficiency
Improved environment and habitat	Innovative environmental solutions	Access to financing
Recruitment of higher quality companies		Regulatory flexibility
Improved health for employees and community, including reduced risks to health and safety from industrial accidents and emissions	Increased protection of natural ecosystems	Higher value for developers
Partnership with business		Reduction of operating costs (i.e. energy, materials, waste)
Minimized impact on infrastructure	More efficient use of natural resources	Reduction in disposal costs
Enhanced quality of life near eco-industrial development		Income from sale of by-products
Improved aesthetics	Protection and preservation of natural habitat	Reduction of environmental liability (and insurance costs)
Good jobs		Improved public image
Efficient resource use (land, water, energy and other natural resources)		Increased employee productivity

Source: EID workbook (Complete Source?)

**B. Eco-Industrial Development in Asia**

The awareness of EID and related concepts has gained momentum in Asia over the last few years. Workshops, training programs and regional conferences have been effective in providing a platform to exchange ideas and best practices, discuss policy and implementation issues, and networking with key stakeholders. As a result, various initiatives and projects on different aspects of eco-industrial estate development have taken off in Asia. Many projects encourage tripartite participation by the private and public sectors and the local community. Examples of some of these initiatives are listed below<sup>12</sup>:

<sup>12</sup> EIEAsia, Forum Newsletter. No. 1, July 2003

### 1) Developing Eco-Industrial Estates

*Thailand-* Currently under development (to be completed in 2006), Thailand's first eco-industrial estate (the Rubber City) will aim to have zero waste, apply waste to resource mechanism and conserve energy and resources. This initiative was supported by GTZ.

*Taiwan-* At the end of 2002, EPA-Taiwan approved the first plan for an Environmental Technology Park, which will host a number of economic zones over a combined area of 100 hectares (some in underutilized existing industrial parks). The government aims to attract 60 environmental enterprises and 150 research enterprises and organizations to the 100 hectare area.

### 2) Capacity Building and Institutional Change on EID

*China-* UNEP and the China State Environmental Protection Institute jointly published "*Environmental Management in Industrial Estates in China*" in 2001 to provide an in-depth analysis of the state of development of industrial estates in China, their environmental management, and introduce EID concepts.

*India-* In collaboration with US-AWP, the Center for Environmental Education (CEE) in Gujarat and the Center for Resource Education (CRE) in Hyderabad is promoting EID concepts and best practices to key stakeholders through training, public education roundtables, websites, and demonstration of actual value added options to waste disposal.

*Indonesia-* Jababeka Industrial Estate will adapt EID approach to develop into a more environmentally friendly estate. At the company level, promotion of environmental management tools, waste water pretreatment and factory emergency response systems will be addressed with individual enterprises. At the estate level, procurement of different quality industrial water, integrated management systems for liquid and solid wastes will be among the focus areas.

*Vietnam-* With support from US-AEP, the Ministry of Industry has conducted a number of workshops and one-on-one training sessions on the economic, environmental, and social benefits of EID.

### 3) Promoting Eco-Industrial Networks

*Thailand-* Map Ta Phut Industrial Estate put together an "Eco-Forum" to instigate networks and partnerships amongst its locator companies.



#### **Piloting Industrial Ecology in the PHILIPPINES**

The Private Sectors Participation in Managing the Environment (PRIME) Project is a government undertaking that aims to strengthen private sector initiatives in reducing environmental footprint of industry. It promotes self-regulation in the industry through its four modules on:

- Helping industry associations develop their own action plan for environmental management through the formulation of Business Agenda 21;
- Supporting pollution prevention through resource use optimization by encouraging the adoption of the industrial ecology concept in industrial estates;
- Promoting a systems approach to managing the environment through an Environment Management System (EMS);
- Encouraging entrepreneurs to invest in the growing environmental services and technology industry.

As of the end of 2003, 89 factories participate in, among others, material exchange, transportation, energy, safety and environmental management.

*Thailand-* Northern Region Industrial Estate established an “Eco-Center” which includes a resource center for technical information on EIE, a by-product display and exchange center and a conference center for hosting the Eco-Forum and training activities. By end of 2003, 17 out of 20 factories are participating in the by-product exchange scheme.

#### *4) Services for Industry*

*India-* Madurai city hosts a large electroplating industry that discharges hazardous effluents into its urban areas. Public complaints have pressured these industries into a well-designed industrial estate in Madurai city. The companies intend to use modern resource-efficient and cleaner production technologies, waste minimization strategies, and appropriate waste disposal systems within the estate.

*Thailand-* At the end of 2003, Eastern Seaboard Industrial Estate installed a new wetland wastewater treatment system, in a pilot scheme, to produce second grade water replacement and reuse 10% of fresh waste consumption of the factories.

## **IV. Elements of EID in PEZA**

Like many countries in Asia, the Philippines has also witnessed an influx of new environmental management concepts in the last decade. Pollution prevention, waste minimization, and cleaner production, have become the key strategies used by companies to improve their environmental performance. Adoption of these strategies was initially spearheaded by foreign and local-funded projects like the Metropolitan Environmental Improvement Project (MEIP) and the Industrial Environmental Management Project (IEMP) which both aimed at reducing pollution from this sector. These projects have shown companies that environmental improvement is not a cost factor but is in fact a profit factor. Some companies are starting to show more interest, while other have started voluntarily adapting these concepts to improve their competitiveness in the open market while keeping the regulatory bodies outside their fences.

Although the Philippines is in a strategic location in South East Asia, has many shipping ports, and a large and skilled labor force, it is essential for all Filipino businesses to incorporate EID concepts into their operations and management processes to enhance their competitiveness in the global marketplace. Further, various legislations and regulatory mechanisms legally bind companies to adhering to environmentally sound business practices.

### **A. Approach: Internalizing EID in PEZA**

PEZA’s mission is to contribute to the accelerated creation of employment and other economic opportunities, particularly in the countryside, and to spur the growth and diversification of exports, by encouraging and supporting investments in the development and operation of viable,

world class and environment friendly economic zones. More importantly, PEZA's initiative to integrate EID principles into its work plan is a very proactive approach.

### *1) Improving Competitiveness of Economic Zones*

PEZA's three strategies for its economic zones are: i) Implementation of environmental management and social responsibility principles into business practices by all locators; ii) Improvement the competitiveness and economic performance of industrial zones; and iii) Ensure satisfied locators within industrial zones. Currently, PEZA facilitates compliance of economic zone developers and locator enterprises with the country's environmental protection and conservation regulations and standards. In order to ensure future economic growth and future benefits without compromising environmental conditions, PEZA has decided to adopt EID principles to create a favorable framework for sustainable development of Philippine economic zones. This is especially ideal in the context of international trade standards and competitiveness, where standards are becoming more and more stringent and the business environment more competitive.

Within PEZA's approach is to encourage individual locators to team up with each other and reuse, recycle and substitute manufacturing technologies and products to maximize recapture while minimizing waste and residuals generation. In essence, potential cost savings for locators through material recovery and by-product exchange should be explored. This will only be possible if information sharing, cooperation and an up-to-date data management and monitoring system of waste generation by individual locators within Ecozones exist. Government policies and interventions should also promote efficient utilization of natural resources and provide incentives for environment-friendly products and processes.

### *2) Partnerships with Key Stakeholders*

For PEZA's economic zones to be "communit[ies] of manufacturing and service businesses located together on a common property [that]...seek enhanced environmental, economic, and social performance through collaboration in managing environmental and resource issues"<sup>13</sup>, partnerships with government agencies, civil society organizations, and multi-lateral and bi-lateral institutions is necessary.

PEZA works closely with DENR and the Board of Investments (BOI) and teamwork between them is essential. Through partnerships with multi-lateral and bilateral agencies like United Nations Development Program (UNDP) and the German Technical Cooperation (GTZ), knowledge sharing, buy-in by government agencies and joint projects/programs has been possible. Funding necessary to embark on EID projects and programs have also been attained through these partnerships. In addition, PEZA has an intricate organizational and management structure internally (See Annex 2 for PEZA's Organizational Chart). For its operations to be efficient, its activities internally and externally should be geared towards PEZA's three overall strategies. Some of the initiatives with these stakeholders are briefly described below:

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<sup>13</sup> Lowe: 6, 1991

### *Multi-lateral and Bilateral Agencies*

UNDP has been promoting eco-industrial development (EID) for more than five years now, under its over-arching program to promote and enhance public-private partnerships on urban environmental issues. The EID program within UNDP has been catalyzing awareness in the business environment by supporting the PRIME Project<sup>14</sup> (Private Sector Participation in Managing the Environment). After the PRIME project, which lasted from 1998 to 2001, UNDP formulated the EPIC Program (the Environment Management Program for Industry Competitiveness), which lasted from 2002 to 2004. UNDP also hosted the EIEAsia<sup>15</sup> secretariat (joint program with GTZ), continuously advocating for effective and responsible environmental management by the private sector in the Philippines.

Based on the UNDP-EPIC program and the UNDP-GTZ supported EIEAsia Network with PEZA, in June 2003, PEZA requested technical assistance from the German Government to develop and EID approach for adaptation to its policy and operational procedures for economic zones. The German Ministry for Economic Cooperation and Development (BMZ) approved the request and commissioned the “Developing a Management approach for EID in Philippines Economic Zones” project to GTZ and continues to be supported by UNDP. The project will take place in two phases (Phase 1: February 2004 – November 2005; Phase 2: March 2006- XX 2008).<sup>16</sup> More details on the completed and planned activities in Phase 1 and 2 can be found in Part IV of this paper.

### *Government agencies and local government units*

Establishing an Ecozone requires many clearances and certifications from several government agencies. Cooperation and coordination between these agencies is essential to ensure that paperwork for investors is streamlined and certification can be completed within a timely manner. (See Figure 1 for a diagram of the certification process for an Ecozone Developer) Depending upon the nature of project, the Ecozone developer has to comply with other necessary requirements such as registration of hazardous waste generators, treaters and transporters besides detailed feasibility including engineering plan, proof of financial capability, ownership of land or long term lease contract etc.

The support of local governments hosting industrial estates is essential for effective implementation and management. Local governments directly benefit by hosting industrial estates in their area, such as employment opportunities, increase in land values, and improvement

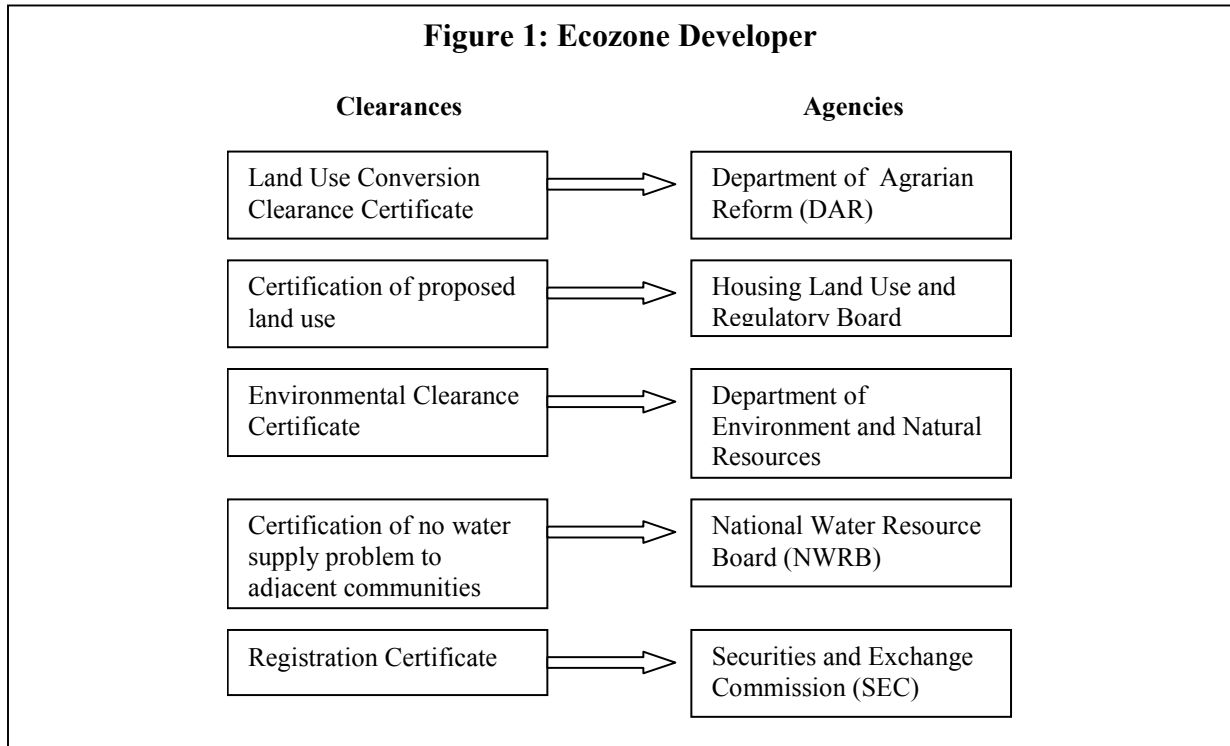
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<sup>14</sup> The PRIME Project is a government undertaking to pilot industrial ecology in the Philippines. PRIME aims to promote self-regulation and strengthen private sector initiatives in reducing environmental footprint of industry.

<sup>15</sup> UNDP and GTZ have established Eco-Industrial Estates Asia (EIEAsia), an informal network of EID practitioners in the Asia-Pacific region, in Manila. Since January 2003, the secretariat has been hosted by the UNDP EPIC program.

<sup>16</sup> Glasbrenner, G. and Esguerra, J. “Developing a Management Approach for Eco-Industrial Development in Philippine Economic Zones: Progress Review Fact Finding Mission June 13 – June 22, 2005.” Power Point Presentation. German Technical Cooperation (GTZ), presented June 24, 2005.

of infrastructure. Estate managers constantly coordinate with local government units, as it is required by the industrial estate's ECC that community/social relations be maintained.



*Private and Non-Government Organizations (NGOs)*

PEZA works with relevant NGOs in an effort to ensure constant civic engagement. Information on collaboration are as follows:

*Philippine Association of Industrial Estates (PHILEA)* - PHILEA was organized in 1990 in response to government's encouragement to the private sector to assume a more proactive role in industrial estate development. PHILEA has 22 member-companies representing 33 IEs all over the country. Of this number, 23 are fully operational, while the rest are in various stages of development. IEs managed by PHILEA-member companies are located in Cavite, Laguna and Batangas in southern Luzon (Calabarzon); Bataan and Tarlac in central Luzon; Manila; Cebu in the Visayas; and Davao and General Santos City in Mindanao.

*Eco-Industrial Exchange Network (EcoIndex)*- EcoIndex, an offshoot of the UNDP PRIME Project, is a management support network of industrial parks and estates in Laguna, Batangas, and Cavite. Launched in 2003 by industrial estates<sup>17</sup>, EcoIndex encourages industries to be active

<sup>17</sup> Carmelray Industrial Parks, Laguna International Industrial Park, Light Industry and Science Parks, Calamba Premier Industrial Park, Laguna TechnoPark Inc., First Cavite Industrial Estate, First Philippine Industrial Park and Lima Technology Park.

players in environmental protection and promotes EID approaches such as resource recovery, recycling and reuse in order to minimize waste generation. The newly formed organization also serves as a venue for facilitating information exchange, networking and collaboration among industries, government and other sectors on various environmental technologies, processes, initiatives and/or best practices. A pioneering initiative was the conduct of a yearly Resource Recovery Event for Ecozones in the Calabarzon area.

### *3) Efficient and Effective Management of Ecozones*

PEZA has a broad range of roles and responsibilities for its registered Ecozones. Not only does it have to ensure locators comply with environmental legislation and regulation, but it also has to oversee natural resource, resource generation, human built systems (infrastructure, production processes, emergency preparedness), and social systems. A summary of these roles, areas of concern, current practice, and prospective interventions is listed in Annex 3.

To efficiently and effectively manage its Ecozones, PEZA is supported by environmental legislation and is mandated several regulatory tools to supervise the development and operation of Ecozones. Some of these tools are:

- Implementing the EIS program, which includes processing and issuance of environmental compliance certificate (ECC)
- Promulgating specific regulations consistent with national standards
- Applying for EIS programmatic compliance
- Establishing an environmental unit at each ecozone for compliance monitoring
- Requiring each ecozone to adopt an integrated management program with pollution prevention or pollution management appraisal as key strategy
- Privatizing environmental management services, which include testing, construction, and operation of pollution control facilities
- Allowing waste exchange between Ecozones to be reused as feedstock, subject to waste handling and transport requirements

With PEZA's strong relationship with industries, its mandate to implement environmental management functions within Ecozones, and legal and regulatory tools to support its mandate, PEZA is in a strategic position to spear-head EID amongst Ecozones. Further, PEZA should maintain and expand the UNDP supported PRIME program because of the positive impact and reception it received from industry and government. However, PEZA's mandate to perform industrial promotion and environmental management is confined within its Ecozones. An inter-agency and partnership approach is necessary to promoting EID.

## **B. Overview of 2004-2005 Activities**

PEZA has taken a series of strategic steps to carve out a roadmap to implementing EID concepts among its Ecozones. The agency started its activities in 2003 and will continue to be involved in EID-related activities until 2008 with UNDP and GTZ assistance.



PEZA entered into a memorandum of agreement (MOA) with the DENR to streamline the application procedures for environmental compliance certificates and to assist locators inside Ecozones and industrial parks in preparing and submitting their applications. Under the MOA, PEZA simplified EIA documentary requirements and as a result, reduced the cost of processing paperwork. PEZA also developed procedures and guidelines for a tripartite compliance monitoring team between DENR, EMB, and itself.

PEZA defined a waste management concept that would give priority to minimization at source by encouraging the efficient use of raw materials. After an intensive consultation workshop with DENR, standardized documentation for transporting hazardous waste and a database of hazardous waste generation within PEZA registered Ecozones was prepared. Policy clarification with DENR on the transport of hazardous wastes from Ecozones is still in process.

An Eco-forum has been effective in catalyzing stakeholder roundtables where pressing concerns and issues of locators were discussed. An EID Resource center established at the PEZA head office aims to eventually boast a collection of reference materials on EID. PEZA has been putting its limited resources to good use by training employees of PEZA on EID concepts so that they are adept at providing information or technological assistance to locators interested in adopting these concepts and supporting environment issues.

PEZA also developed a project with GTZ and UNDP to enhance the performance of Ecozones and industrial parks registered under PEZA by adopting EID concepts and policies. The project, to be piloted in Mactan Economic Zone 1 and 2 (MEZ 1 and 2) will detail guidelines and procedures for industries to comply with environmental rules and regulations. Among the outputs of this project is the preparation of a baseline study on resource use, by-product generation, logistics and assets of MEZ 1 and 2. The *Rapid Industrial Area Assessment (RIAA)* of MEZ 1 and 2 identifies water and power supply, management and disposal of waste and waste water, and emergency response systems for chemical emergencies are among the critical issues in these economic zones. Copies of the RIA report can be requested from PEZA.

In 2005, during a stakeholder workshop, PEZA presented proposed Guidelines on Handling and Transport of Economic Zones to National Solid Waste Management Commissions, PEZA locator enterprises and developer-operators, service providers, NGOs and other concerned government agencies. Further, discussions on enhancing PEZA's management information systems (MIS) resulted in developing a static and interactive website (<http://environment.peza.gov.ph>). The website, managed by PEZA's MIS department, is an instrument for EID awareness building and a "virtual" network for locators. Environmental reporting and permitting requirements, such as ECC applications, can be downloaded from the website as well. The enhanced capacity of PEZA staff to answer inquiries and properly assist Ecozone locators is expected. Other activities to be accomplished by November 2005 are listed in Table 3 below. More information on activities from 2004 to March 2005 is available in Annex 4.

<b>Table 3: Activities from March to November 2005</b>	<b>Target Date</b>
Issuance & Implementation of Guidelines on Handling and Transport of Economic Zones' Solid Wastes	July
Publication and Distribution of RIAA Report	July
Eco-forum on the Guidelines on Handling and Transport of Economic Zones Solid Wastes	July - August
Launching of Materials Recovery Facility (MRF) Design Contest	July - August
Capacity Building for PEZA Staff and Locator Enterprises on EID	August - September
One-day Resource Recovery and Exposition in MEZ 1	October

## **B. Planned Activities from 2006-2008**

The PEZA EID project started in February 2004 and will end in November 2005. It was designed to lay the groundwork for applying EID concepts in Ecozones by streamlining key environmental policies (hazardous and solid waste); identifying critical concerns among stakeholders; appraising the situation of zones in Mactan through the RIAA; and formulating EID action plans with locators in the pilot area (Mactan).

After the first phase, the EID project team, comprised of members from PEZA, GTZ and UNDP, agreed that the project should continue into a longer phase to properly implement EID and address the impacts on the political, economic and social system. It has been agreed that the second phase of the project, to be implemented from March 2006 to 2008, will focus on implementing EID tools and management systems in the Mactan Ecozones, as well as replicating lessons learned from the pilot project to other Ecozones. Furthermore, the team has agreed that the project should expand into a real 'program approach'.

### **The objective of Phase 2 of the project is to:**

*Enhance economic and environmental performance of Economic Zones through adaptation of EIDt and Management concepts and policies by PEZA.*

*Specifically, the program aims to:*

1. Support the development of policies & organizational mechanisms to make PEZA economic zones "environment-friendly", such as by providing clear guidelines to locator enterprises for easier compliance with environmental laws, rules and regulations. This also includes the formulation of an Integrated Waste management Plan in ecozones (e.g. come up with a mechanism by which a sanitary land fill can be established).
2. Institutionalize capacity building in using EID approaches & tools to support management and service functions of PEZA and locators (Environmental Management, Cleaner Production, EID networking, eco-efficiency, technology assessment, guideline & handbook development, etc.). The skills of local service providers/environmental consultancies should also be enhanced in order to meet the needs of locators.

3. Develop opportunities for enhancing available technology in addressing eco-efficiency requirements of Ecozones (e.g. investment promotion in environmental services like resource recovery as opposed to simply waste hauling & disposal, recycling technologies/byproduct exchange system, enhancing locator investments in acquiring cleaner production technologies, environmental services, and resource conservation).
4. Assist locator enterprises in economic zones in establishing and implementing environmental management plans/systems together with their respective communities and stakeholders.

## **Program Components**

*The program will continue to focus on three impact areas:*

- Adjustment of PEZA's policy framework (policy, laws and regulations).
- Institutional capacity development for Eco-Industrial Development (of PEZA, locators, service providers).
- Develop the Mactan Ecozones as Eco-Industrial Estates (EIEs) through the implementation of EID tools and systems, and replicating the process to other identified ecozones.

### *A. Regulatory and Policy*

- Enhance PEZA policies and develop incentives and finance schemes to encourage Ecozone locators' investment in eco-efficiency systems (cleaner production technologies, capital equipment for improved production efficiency, environmental services, etc.)
- Institutionalize Environmental Management Systems in line with the Philippine Environment Partnership Program in cooperation with strategic government organizations and private institutions
- Propose an integrated waste management plan for ecozones, which includes recommending a suitable collection, hauling and disposal system for residual waste in the public ecozones (and possibly in private economic zones) and coordinating with LGUs and the National Solid Waste Management Commission on developing Sanitary Landfills and Material Recovery Facilities.

### *B. Institutional Capacity Building*

- Develop training modules on waste treatment options including actual training for cleaner production, Profitable Environmental Management (PREMA), hazardous waste, Emergency Response systems, Environmental Management Systems, Health & Safety, good housekeeping (P3U guide).

- Train PEZA staff, economic zone locators, and local consultants with the modules developed and through partnerships with local and foreign academic institutions and local consultancies.
  - Set-up a Philippine EID experts pool.
  - Strengthen private sector partnerships within and among the economic zones.
  - Develop EID workbooks and field guides for PEZA Environmental Safety Group, field staff, inspectors, and locators.
  - Expand the use and enhance the services of the PEZA-EID Website and EID Resource Center to include trainings and improved online services.
- C. *Develop the Mactan Ecozones as Eco-Industrial Estates (EIEs) through the implementation of EID tools and systems, and replicating the process to other identified ecozones*
- D. *Develop an EID implementation framework for use in developing other Eco-Industrial Estates in the Philippines, which includes a criteria for identifying succeeding pilot areas.*
- Generate and pilot a waste management system in Mactan by providing appropriate technology (e.g. study feasibility of materials recovery facility operations and/or byproduct waste exchange to handle recoverable materials from economic zones, create a mechanism by which LGU can establish a sanitary landfill). This includes a study on waste minimization, resource efficiency opportunities per industrial sector in economic zones.
  - Identify and implement measures to improve resource utilization and achieve cost savings, particularly in addressing water and power scarcity in Mactan.
  - Strengthen locator networks and community partnerships within and among the economic zones.
  - Establish strategic Public-Private Partnerships on technical training and/or investment in environmental services.
  - Carry out an intensive information awareness campaign on EID.

## **V. Conclusion**

Through its proactive approach and focused mission, PEZA has had many achievements in promoting environmentally friendly economic zones. In the last five years, PEZA has helped streamline administrative processes related to Environmental Impact Assessment (EIA) and other environmental compliance processes with the Department of Environment and Natural Resources (DENR) and the Environmental Management Bureau (EMB). It has also prepared guidelines on the transport of hazardous waste materials; monitored and kept a database of hazardous waste generation; and standardized documentation for hazardous waste transport

within and out of PEZA-managed economic zones. PEZA actively engages in discussion with locators on concerns, needs, and key issues they have to achieve client-satisfaction. Finally, the agency promotes knowledge sharing through Eco-Forums, workshops, and by maintaining a website dedicated to raise awareness and campaign for eco-industrial development (<http://www.environment.peza.gov.ph>).

PEZA's Environmental Safety Group handles the planning, coordination and implementation of all environmental management programs. This small but efficient group has been very effective in justifying the EID project to PEZA's management. With PEZA's positive reception to the EID concept and its implementation, the group is enthusiastic to continue venturing into new and creative activities and initiatives to implement EID into its work.

## ANNEX 1: Classification of Ecozones

### Ecozones are divided into the following types:

1. **Industrial Estates (IEs)** are tracts of land developed for the use of industries. They have basic infrastructure such as roads, water and sewage systems, pre-built factory buildings, and residential housing for the use of the community.

2. **Export Processing Zones (EPZs)** are special IEs whose locator companies are mainly export-oriented. EPZ incentives include tax- and duty-free importation of capital equipment, raw materials and spare parts. The government has designated 4 EPZs; Bataan, Cavite, Baguio City and Mactan Island in the Visayas. There are about 250 registered companies in the EPZs, most of which are involved in the manufacture and export of electronics, garments, rubber products, fabricated metals, plastics, electrical machinery, transport equipment and industrial chemicals.

3. **Free Trade Zones** are areas nearby ports of entry, such as seaports and airports. Imported goods may be unloaded, repacked, sorted and manipulated without being subjected to import duties. However, if these goods are moved into a non-free trade zone, they will be subjected to customs duties.

4. **Tourist & Recreational Centers** contain establishments that cater to both local and foreign visitors to the Ecozones. Such businesses include hotels, resorts, apartments and sports facilities.

### Ecozone Enterprises

1. **Export Enterprise** - manufactures, assembles, or processes products which are 100% exported, unless a lower percentage is approved by PEZA.

2. **Free Trade Enterprise** - imports and markets tax- and duty- free goods within the free trade area in the Ecozone. Goods brought outside the free trade area will be subject to customs and tariff duties.

3. **Service Enterprise** - is engaged in any one or a combination of the following activities : customs brokerage, trucking/forwarding, janitorial, security, insurance and/or banking, consulting or any such service approved by PEZA.

4. **Domestic Market Enterprise** - manufacturer, assembler or processor of goods that cannot export at least 50% of their output for a period of three years if majority-owned by Filipinos and at least 70% if majority-owned by foreign nationals.

5. **Pioneer Enterprise** - with any of the following conditions

- manufactures, processes or produces goods not produced in a commercial scale in the country;
- uses a design, formula, scheme, method or process which is new and untried in the Philippines;
- produces non-conventional fuels or manufactures equipment that utilizes non- conventional sources of energy;
- develops areas for agri-export processing development; or
- given such a status under the Investment Priorities Plan.

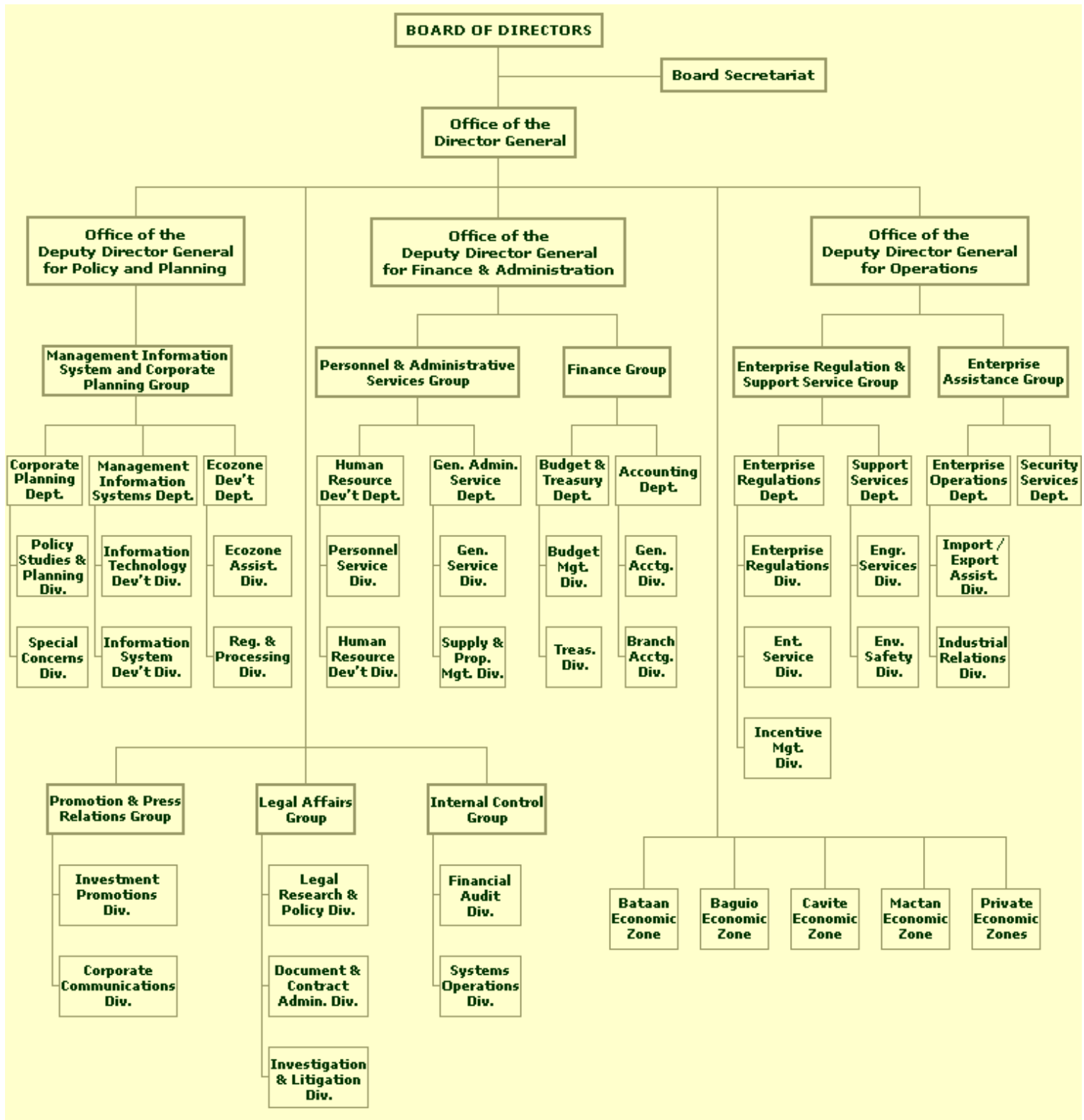
6. **Utilities Enterprise** - contracted to provide light and power, water supply and distribution, communications and transportation systems in the *Ecozone*.

7. **Facilities Enterprise** - contracted to build and maintain necessary infrastructure such as warehouses, buildings, road networks, ports, sewerage and drainage systems, and other facilities considered as necessary by PEZA in the development and operations of the *Ecozone*.

8. **Tourism Enterprise** - operates tourist accommodation facilities, restaurants, and sports and recreational facilities in the *Ecozone*.

9. **Ecozone Developer/Operator** - develops, operates, and maintains the *Ecozone*, all component sectors (i.e. IEs, EPZs, Free Trade Zones, and Tourist/Recreational Centers) and all related infrastructure (roads, light and power systems, drainage facilities, etc.)

**ANNEX 2: PEZA's Organizational Chart**





## ANNEX 5: Accomplishment Reports- 2004 to March 2005

### EXECUTIVE SUMMARY 1<sup>ST</sup> QUARTER OF 2004 (JANUARY - MARCH)

Activity	GTZ APPRAISAL MISSION WITH PEZA TO MACTAN ECONOMIC ZONE 1(MEZ 1), LAPU-LAPU CITY, CEBU	PLANNING WORKSHOP AT PEZA HEAD OFFICE IN MANILA
Objectives	<ul style="list-style-type: none"> <li>• <i>Identify environmental management issues and concerns in Mactan Economic Zones &amp; surrounding areas and how eco-industrial development (EID) concepts/approach can be used to improve the management of the environment.</i></li> <li>• <i>Explore areas where PEZA Eco-Industrial Development (PEZA EID) Program can strengthen the effectiveness of the on-going PEZA initiatives.</i></li> </ul>	<p><i>Formulate objectives and components of the PEZA EID Program</i></p>
Content	<p>An Appraisal Team composed of representatives from the German Technical Cooperation (GTZ), PEZA Environmental Safety Group (PEZA-ESG), and Environmental Management Programme for Industry Competitiveness - United Nation Development Programme (EPIC-UNDP) visited MEZ 1 to discuss the Program concept with the PEZA Zone Managers and to conduct a Stakeholder Roundtable Discussion.</p> <ul style="list-style-type: none"> <li>• A Stakeholder Roundtable was conducted to discuss issues related to waste management and water scarcity in the area; factors that hinder the formulation and implementation of solutions to the issues/concerns; and objectives of the PEZA EID Program.</li> <li>• PEZA Environmental Safety Group staff, PEZA MEZ staff, locators and representatives from the local government units attended the Stakeholder Roundtable.</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion of issues related to eco-industrial development concepts/approach</li> <li>• Recommendation of solutions to address issues related to EID</li> <li>• Presentation of revised PEZA EID Project Concept to NEDA, DENR, UNDP, and GTZ</li> </ul>

Results	<ul style="list-style-type: none"> <li>Identified EID related issues and grouped into five (5) categories ; waste management, pollution, infrastructure, zone management, and environmental management system/ISO14001.</li> </ul>	<p>Participants recommended areas for improvement to resolve the identified issues in Mactan ecozones such as:</p> <ul style="list-style-type: none"> <li>Design policies in line with eco-industrial development concept/approach;</li> <li>Conduct proper waste management planning at least in the local level and identify options for waste treatment and final disposal;</li> <li>Develop a community of all stakeholders in and around the ecozones;</li> <li>Build partnership with local government units (LGUs)</li> <li>Increase environmental awareness</li> <li>Promote integrated environmental management and ISO 14001 among locators; and</li> <li>Establish environmental corner</li> </ul>
Next Steps	<ul style="list-style-type: none"> <li>Schedule planning workshop to further discuss the PEZA-EID Program's Plan of Operations and overall concept incorporating the identified issues in Mactan Economic Zones.</li> </ul>	<ul style="list-style-type: none"> <li>Conduct series of planning meeting with the EID team to finalize the PEZA EID Program Concept.</li> </ul>

**EXECUTIVE SUMMARY 1<sup>ST</sup> QUARTER OF 2004 (JANUARY - MARCH)**

Activity	<p><b>SIGNING OF MINUTES OF DISCUSSION BETWEEN PEZA AND GTZ</b></p>	<p><b>PARTICIPATION IN THE 2<sup>ND</sup> INTERNATIONAL WORKSHOP AND CONFERENCE ON ECO-INDUSTRIAL DEVELOPMENT (RAYONG, THAILAND)</b></p>
Objectives	<p><i>Formalize partnership of PEZA and GTZ in implementing the project "Developing a Management Approach for Eco-Industrial Development (EID) in Philippine Economic Zones"</i></p>	<ul style="list-style-type: none"> <li><i>Expose key PEZA program staff to international EID programs and projects;</i></li> <li><i>Establish network with GTZ projects on eco-industrial development in Thailand such as Development of Eco-Industrial Estate and Network (DEE+Net) and Industry Estate Authority of Thailand (IEAT); and</i></li> <li><i>Introduce PEZA staff to EID practitioners and key people for future networking and guidance</i></li> </ul>

Content	<ul style="list-style-type: none"> <li>Minutes of Discussion served as the basis for undertaking activities in line with the PEZA EID Program.</li> </ul>	<ul style="list-style-type: none"> <li>Presentations of international EID-initiatives --- Thailand, Indonesia, China, USA, Germany, and Tunisia</li> <li>Discussion of development criteria to determine an Eco-Industrial Estate</li> <li>Field visits to pilot industrial estates in Thailand</li> </ul>
Results	<ul style="list-style-type: none"> <li>Director General Lilia B. De Lima of PEZA and Director Martin Muller of GTZ signed the Minutes of Discussion, which served as the Memorandum of Agreement between PEZA and GTZ in implementing the project in developing a management approach for Eco-Industrial Development (EID) in economic zones.</li> </ul>	<ul style="list-style-type: none"> <li>Lessons and experiences learned from international EID projects were gathered for the structuring and implementing of PEZA EID Program.</li> </ul>
Next Steps	<ul style="list-style-type: none"> <li>Conduct meetings to discuss budget and resource sharing, organization structure, plan of operations and indicators-setting.</li> </ul>	<ul style="list-style-type: none"> <li>Integrate knowledge and lessons gained from the workshop and conference into the PEZA EID program.</li> </ul>

#### EXECUTIVE SUMMARY 2<sup>ND</sup> QUARTER OF 2004 (APRIL – JUNE)

Activity	<b>PLANNING WORKSHOP ON HAZARDOUS WASTES TRANSPORT AND EIS GUIDELINES WITH DENR – EMB OFFICIALS</b>	<b>ESTABLISHMENT OF EID RESOURCE CENTER AT PEZA HEAD OFFICE</b>
Objectives	<i>Translate and improve internal policies into detailed guidelines and procedures for easier compliance of ecozone locators with environmental rules and regulations</i>	<b><i>Enhance the capacity of PEZA staff to answer inquiries and to properly assist ecozone locators</i></b>

Content	<p>Streamline the procedures on the proposed supplemental guidelines on the Initial Environmental Examination (IEE) , Multipartite Monitoring Team (MMT), and Joint Compliance Monitoring ; and the new guidelines on Hazardous Waste Transport from Economic Zones</p> <ul style="list-style-type: none"> <li>• Presentation of the proposed procedures and guidelines</li> <li>• Collection of ideas and comments</li> <li>• Discussion of collected issues through working groups</li> </ul>	<p>EID Resource Center will cater to PEZA Staff and Ecozone locator enterprises in managing environmental concerns by providing environmental management publications.</p> <ul style="list-style-type: none"> <li>• Organization of collected books, newsletters, brochures, training manuals and workbooks for the EID Resource Center</li> <li>• Systematize procedure in using the various reference materials</li> <li>• Acquisition and solicitation of EID related resource materials (i.e. newsletters, magazine, books, manuals, workbooks) from local and international institutions and agencies involved in EID projects/programs</li> </ul>
Results	<ul style="list-style-type: none"> <li>▪ DENR recognized the initiative of PEZA to simplify ECC application of PEZA locator enterprises</li> <li>▪ DENR gave important inputs for improvement of the proposed supplemental guidelines on the Initial Environmental Examination (IEE) , Multipartite Monitoring Team (MMT), and Joint Compliance Monitoring</li> <li>▪ DENR accepted the new guidelines on Hazardous Waste Transport</li> </ul>	<ul style="list-style-type: none"> <li>▪ PEZA ESG Staff frequently using the EID Resource Center in addressing queries of locator enterprises, making position papers and further study on environmental laws, issues and concerns.</li> </ul>
Next Steps	<ul style="list-style-type: none"> <li>▪ Incorporate DENR's inputs to the revised supplemental guidelines on the IEE, MMT and joint monitoring inspection</li> <li>▪ Continuous coordination with DENR to finalize the supplemental guidelines</li> <li>▪ Present the workshop agreements to DENR and PEZA management</li> </ul>	<ul style="list-style-type: none"> <li>▪ Develop operational guidelines of the EID Resource Center</li> <li>▪ Promotion of the EID Resource Center to the rest of PEZA and Ecozone enterprises</li> <li>▪ Continuous acquisition and solicitation of additional materials from donor organizations, industry, and environmental groups</li> </ul>

**EXECUTIVE SUMMARY 2<sup>ND</sup> QUARTER OF 2004 (APRIL – JUNE)**

Activity	<p><b>APPROVAL OF THE GUIDELINES ON THE TRANSPORT OF HAZARDOUS WASTE FROM ECONOMIC ZONES</b></p>
Objectives	<p><i>Translate and improve internal policies into detailed guidelines and procedures for easier compliance of ecozone locators with environmental rules and regulations</i></p>

Content	The Guidelines will ensure that the transport, storage, treatment, and disposal of Hazardous Waste complies with Title III of RA 6969
Results	<ul style="list-style-type: none"> <li>The Director General of PEZA approved the implementation of the Guidelines on the Transport of Hazardous Wastes from Economic Zones through Memorandum Circular No. 2004-020.</li> </ul>
Next Steps	<ul style="list-style-type: none"> <li>Reproduction of the Supplemental Guidelines on the PEZA – DENR MOA and Guidelines on Hazardous Waste Transport</li> <li>Develop database system on the types and quantities of Hazardous Waste generated in the ecozones</li> <li>Schedule series of Eco-fora for PEZA locator enterprises and Hazardous waste treaters and transporter to properly disseminate the details of the Guidelines on the Transport of Hazardous Wastes from Economic Zones and proposed supplemental guidelines on IEE checklist, MMT, and joint monitoring inspection</li> </ul>

### EXECUTIVE SUMMARY 3<sup>RD</sup> QUARTER OF 2004 (JULY – SEPTEMBER)

Activity	<b>PRINTING OF SUPPLEMENTAL GUIDELINES ON THE PEZA-DENR MOA FOR ECC APPLICATIONS AND GUIDELINES ON HAZARDOUS WASTE TRANSPORT</b>	<b>DEVELOPMENT OF PEZA-EID WEBSITE</b>
Objectives	<i>Translate and improve internal policies into detailed guidelines and procedures for easier compliance of ecozone locators with environmental rules and regulations</i>	<b><i>Enhance the capacity of PEZA staff to answer inquiries and to properly assist ecozone locators</i></b>

Content	Reproduction of printed manuals of the PEZA-DENR MOA and Guidelines on Hazardous Waste for distribution to locator companies, developers, PEZA staff, and other interested users.	<p>The website is intended to provide information, online applications, technical assistance, and databases to PEZA staff and locators on EID-related tools and activities and will be designed to support the EID Resource Center</p> <ul style="list-style-type: none"> <li>• Preparation of concept paper and presented to project partners, PEZA-ESG, and PEZA-MIS</li> <li>• Collection of proposals from web development companies to bid on the web project based on the concept paper</li> </ul>
Results	<ul style="list-style-type: none"> <li>▪ Printed 1,000 copies each of the PEZA-DENR MOA and Guidelines on Hazardous Waste Transport</li> </ul>	<ul style="list-style-type: none"> <li>▪ Defined the objectives and content of the website</li> <li>▪ identified target users and develop a detailed site map</li> <li>▪ Gathered 4 proposals from web development companies</li> </ul>
Next Steps	<ul style="list-style-type: none"> <li>▪ Distribute printed manuals of PEZA – DENR MOA and Guidelines on Hazardous Waste in the Eco-for a for PEZA locator enterprises and hazardous wastes treater and transporters</li> </ul>	<ul style="list-style-type: none"> <li>▪ Select an appropriate web development company to deliver required outputs based on concept paper</li> </ul>

### EXECUTIVE SUMMARY 3<sup>RD</sup> QUARTER OF 2004 (JULY – SEPTEMBER)

Activity	<b>ECO-FORUM ON THE GUIDELINES ON TRANSPORT OF HAZARDOUS WASTE FROM ECOZONES WITH HAZARDOUS WASTE TRANSPORTERS (2 RUNS)</b>	<b>RAPID INDUSTRIAL AREA ASSESSMENT (RIAA) STUDY IN MACTAN ECONOMIC ZONES 1 &amp; 2</b>
Objectives	<i>Translate and improve internal policies into detailed guidelines and procedures for easier compliance of ecozone locators with environmental rules and regulations</i>	<b><i>Enhance the capacity of PEZA staff to answer inquiries and to properly assist ecozone locators</i></b>
Content	Presentation of the guidelines to properly inform the transporters and treaters specifically on the new permitting requirement and proper labeling	<p>Carry out baseline survey of Mactan Economic Zone 1 and 2</p> <ul style="list-style-type: none"> <li>• Development of environmental survey format</li> <li>• Collection of data from provincial- to zone-level</li> <li>• Conduct interviews in MEZ 1 and 2 and Local Government Units</li> </ul>

Results	<ul style="list-style-type: none"> <li>▪ Informed the Hazardous Waste transporters on the new guidelines</li> <li>▪ Discussed issues and concerns related to hazardous waste transport</li> </ul>	<ul style="list-style-type: none"> <li>▪ Gathered data on population, industries, power and water use, locations of scrap buyers, hazardous and solid waste data of Cebu province, Lapu-lapu City, and MEZ 1 and 2</li> </ul>
Next Steps	<ul style="list-style-type: none"> <li>▪ Comments and issues raised will be studied and reviewed for dissemination to implementing parties</li> <li>▪ Conduct eco-fora for PEZA locator enterprises and private ecozones developer-operators</li> </ul>	<ul style="list-style-type: none"> <li>▪ Process and compile data in a report</li> <li>▪ Develop maps as presentation materials to indicate vital information on resource use and waste generation in MEZ 1 and 2</li> <li>▪ Present survey results to MEZ1 and 2 locators through an Eco-Forum in Mactan</li> </ul>

### EXECUTIVE SUMMARY 3<sup>RD</sup> QUARTER OF 2004 (JULY – SEPTEMBER)

Activity	<b>ECO-FORUM WITH PEZA LOCATOR ENTERPRISES AND DEVELOPERS ON THE IRR OF THE PEZA-DENR MOA ON ECC APPLICATIONS AND THE GUIDELINES ON HAZARDOUS WASTES TRANSPORT (9 RUNS)</b>	
Objectives	<i>Translate and improve internal policies into detailed guidelines and procedures for easier compliance of ecozone locators with environmental rules and regulations</i>	
Content	<ul style="list-style-type: none"> <li>• Discussion of the PEZA-DENR MOA and Guidelines on Transport of Hazardous Wastes from the Economic Zones</li> <li>• Presentation of Environmental Service Providers in industrial waste treatment and disposal to give solutions to the locator's waste problems</li> <li>• PEZA locator enterprises and private ecozone developers attended the forum</li> </ul>	
Results	<ul style="list-style-type: none"> <li>▪ Informed locator enterprises and developers on the PEZA-DENR MOA and the Guidelines on Hazardous Waste Transport</li> <li>▪ Provided locator enterprises and developers options for waste disposal and treatment</li> <li>▪ Locator enterprises and developers raised issues and comments</li> <li>▪ Pollution Control Officers (PCOs) requested for further assistance to enhance their knowledge</li> </ul>	

ext Steps	<ul style="list-style-type: none"> <li>▪ Issues raised will be studied and reviewed for dissemination to implementing parties</li> <li>▪ Develop Training Needs Assessment Survey for PCOs and other interested locator staff</li> <li>▪ Conduct policy workshop/roundtable discussion on Solid Waste Management in Mactan</li> </ul>
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**EXECUTIVE SUMMARY 4<sup>TH</sup> QUARTER OF 2004 (OCTOBER –DECEMBER)**

Activity	DESIGN OF PEZA-EID WEBSITE	DATA PROCESSING OF RAPID INDUSTRIAL AREA ASSESSMENT (RIAA) IN MACTAN ECONOMIC ZONES
Objectives	<i>Enhance the capacity of PEZA staff to answer inquiries and to properly assist ecozone locators</i>	<i>Reach a critical mass of ecozone enterprises in the pilot area/s committed to implementing EID practices</i>
Content	Selection of i4Asia, a web developer company, as official website developer of PEZA-EID Website	<ul style="list-style-type: none"> <li>• Tabulation of the data gathered in Mactan Economic Zones</li> <li>• Presentation in graphical form all the data gathered</li> </ul>
Results	<ul style="list-style-type: none"> <li>▪ Conducted meeting with i4Asia and PEZA – Management Information System (MIS) to discuss the details of PEZA-EID Website and schedules of activities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Developed around 30 maps for presentation and validation of stakeholders, potential investors, and funding agencies</li> <li>▪ Identified projects and activities from gaps illustrated in the maps</li> <li>▪ Identified intensive generators of hazardous wastes and solid wastes and users of fuel and power</li> </ul>
Next Steps	<ul style="list-style-type: none"> <li>▪ Lay out the content of the PEZA –EID Website</li> <li>▪ Approval and testing of the Online Environment Corner</li> </ul>	<ul style="list-style-type: none"> <li>▪ Present the result of RIAA to concerned stakeholders in Cebu</li> <li>▪ Present to potential investors and funding agencies.</li> </ul>



EXECUTIVE SUMMARY 1<sup>ST</sup> QUARTER OF 2005 (JANUARY-MARCH)

Activity	STAKEHOLDERS ROUNDTABLE DISCUSSION ON THE PROPOSED GUIDELINES ON HANDLING AND TRANSPORT OF ECONOMIC ZONES SOLID WASTES	PARTICIPATION OF PEZA-ESG STAFF IN THE 8 <sup>TH</sup> PHIL. POLLUTION PREVENTION ROUNDTABLE DISUCSSION ON “SUSTAINABLE CONSUMPTION AND PRODUCTION” ( MAKATI CITY, MANILA)
Objectives	<i>Translate and improve internal policies into detailed guidelines and procedures for easier compliance of ecozone locators with environmental rules and regulations</i>	<i>Enhance the capacity of PEZA staff to answer inquiries and to properly assist ecozone locators</i>
Content	Presentation of the proposed Guidelines on Handling and Transport of Economic Zones to National Solid Waste Management Commissions, PEZA Locator Enterprises and Developer-Operators, Service Providers, non-governmental organizations, and other concerned government agencies.	Topics discussed: <ul style="list-style-type: none"> <li>• Sustainable Consumption and Production</li> <li>• Cleaner Production</li> <li>• Greening the Supply Chain</li> <li>• Eco-labeling</li> </ul>
Results	<ul style="list-style-type: none"> <li>▪ Gathered comments and recommendations from key stakeholders</li> <li>▪ Facilitated better understanding among stakeholders on the handling and transport of solid wastes from economic zones</li> </ul>	Learned about the following: <ul style="list-style-type: none"> <li>▪ Concept of sustainable consumption and production, cleaner production and greening the supply chain</li> <li>▪ “Green Procurement” Policy to all government agencies</li> </ul>
Next Steps	<ul style="list-style-type: none"> <li>▪ Coordinate with National Solid Waste Management Commission clarification on the NTP issue and updated list of controlled dumpsites</li> <li>▪ Incorporate all necessary comments and recommendations in the Guidelines</li> <li>▪ Distribute Second Draft of Guidelines to the participants for further review and comments</li> </ul>	<ul style="list-style-type: none"> <li>▪ Apply lesson learned in answering inquiries related to the abovementioned topics</li> </ul>

EXECUTIVE SUMMARY 1<sup>ST</sup> QUARTER OF 2005 (JANUARY-MARCH)

Activity	<b>STATIC PAGE OF PEZA-EID WEBSITE</b>
Objectives	<b><i>Enhance the capacity of PEZA staff to answer inquiries and to properly assist ecozone locators</i></b>
Content	<ul style="list-style-type: none"> <li>• PEZA – EID Website provide information on the following: <ul style="list-style-type: none"> <li>• PEZA-EID Project</li> <li>• Updates on the EID Activities</li> <li>• Environmental Permits and Guidelines</li> <li>• PEZA Environmental Performance Awards’ Mechanics and Criteria</li> <li>• Downloadable Environmental Forms</li> <li>• ECC Online Application</li> </ul> </li> </ul>
Results	<ul style="list-style-type: none"> <li>• PEZA Management Information System Department hosted the PEZA –EID Website through the main server of PEZA</li> <li>• <a href="http://environment.peza.gov.ph/">http://environment.peza.gov.ph/</a> is the official domain name of PEZA- EID Website</li> </ul>
Next Steps	<ul style="list-style-type: none"> <li>▪ i4asia is working on the ECC Online Application for easier and faster access of PEZA locator enterprises</li> </ul>

## **ANNEX 8: Indicative Program Schedule for PEZA EID Program from 2006 to 2008**

### A. Year 2006: Quarter 1- 4

- *Capacity Building of PEZA Environment Safety Group through seminar/workshops, study tours, training on specific technical aspects (e.g. EIA)*
- *Capacity Building of locators/develop base of local consultancies on environmental management tools*
- *Identify stakeholders and strategic partners*
- *Formation of multi-sectoral Technical Working Groups for each of the program components*
- *Identify experts and develop terms of reference.*
- *Conduct Eco-Forums with stakeholders and partners in pilot estates*
- *Identify succeeding pilot areas*
- *Develop information dissemination tools for the locators, local government, PEZA, and government partners*

### B. Year 2007: Quarter 1-4

- *Set-up an EID Information Center in the Mactan pilot areas*
- *Start of Waste Management/By-Product Exchange Study*
- *Put together a compilation and organize an expo of “best practices” of locators in Economic Zones*

### C. Year 2008: Quarter 1- 4

- *Set-up an EID experts pool*
- *Explore financial/investment opportunities from results of Waste Management/By-Product Exchange Study through funding agencies, aid organizations, and private partners*