



# Eco-Industrial Development

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## INTRODUCTION

### PEZA'S RATIONALE FOR ENTERING IN EID

*The global need for more sustainability in industrial development and specific Philippine conditions*

Over the last 10 years the population in Asia has grown by 500 million to 3.8 billion people. This goes along with rapid growth of most Asian economies but, unfortunately, in a socially unbalanced way along with substantial environmental degradation. Therefore also economic growth is distributed in an unjust way, is not directly linked to poverty alleviation but merely serves upper social levels.

Due to continuously deteriorating environmental conditions and an increasing global demand for limited natural resources, interest in improved environmental performance and resource efficiency of all economic sectors is growing world-wide.

Special economic zones are a central element for industrial development in several Asian countries including the Philippines. Usually these zones follow a combination of public and private development and management. In the Philippines PEZA (Philippine Economic Zone Authority) zones are main contributor to economic development concerning employment (directly more than 500,000) and exports (more than 80%).

Globalization gets countries and sectors closer together and an increasing competition with other Asian countries for FDI (Foreign Direct Investments) is evolving. PEZA realizes that competitiveness needs to be improved to follow its policy of retention, expansion and diversification. Environmental decision criteria become more and more prominent and important in this respect. The systematic promotion for investments and new ecozone concepts such as IT centers and parks, tourism zones, retirement villages, health zones and services include environmental aspects.

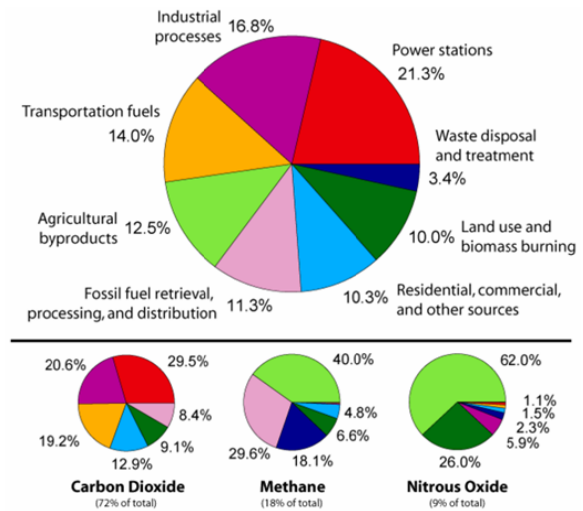


Figure 1 Annual Greenhouse Gases by Sector, Wikipedia, 2000<sup>1</sup>

Industry is directly and indirectly contributing to the Global Greenhouse Gas Emissions – directly with 17% and indirectly via power consumption, transportation and fossil fuel retrieval and processing with another 47%.

PEZA already thinks post-2012 when the climate protection will request industries in countries not covered by the Kyoto protocol to contribute to reduction of greenhouse gas emissions.

Eco-industrial development or EID is PEZA's core instrument to tackle environmental aspects in a balanced manner.

<sup>1</sup> This figure shows the relative fraction of man-made greenhouse gases coming from each of eight categories of sources, as estimated by the Emission Database for Global Atmospheric Research version 3.2, fast track 2000 project

## EID AS STRATEGY TO TACKLE THE CHALLENGES OF THE FUTURE

*EID management approach balances economy, environment and society based on good governance structures;*

The concept of Eco-Industrial Parks (EIP) has been first described at the United Nations Conference on Environment and Development in Rio de Janeiro 1992. Eco-Industrial Estates are a promising strategy to promote sustainable industrial development and to improve the industries' environmental performance in terms of management of materials, energy and waste. The Eco-Industrial Parks concept provides substantial benefits for participating companies, for the region and particularly for the employees and neighboring communities.

*"An Eco-Industrial Park is a community of manufacturing and service businesses seeking enhanced environmental and economic performance through collaboration in managing environmental and resource issues including energy, water, and materials. By working together, the community of businesses seeks a collective benefit that is greater than the sum of individual benefits each company would realize if it optimized its individual performance only"<sup>2</sup>*

The eco-industrial approach offers a wide variety of measures and tools to improve the environmental performance of individual industries and industrial estates. However, each individual zone, already existing or newly planned, requires an individual mix of measures and tools, developed in PEZA's EID project in cooperation with GTZ the German Technical Cooperation.

All over the world, examples for eco-industrial development and the contribution of regional resource synergies to sustainable development can

be found. Based on the concept of industrial ecology it is simple enough to understand the idea of an industrial ecosystem and yet sufficiently sophisticated to give a feeling for the enormous potential of this approach.

EID in the Philippines, for the time being, is mainly tackling already existing industrial zones by initiating a comprehensive management system, new participative area-based monitoring systems for environmental quality and a toolbox of EID instruments ranging from baseline studies and rapid assessments over Corporate Social Responsibility to energy auditing or environmental management accounting.

Figure 2 EID Project Overview

In all its endeavors EID strives for balancing environmental, industrial and community aspects.

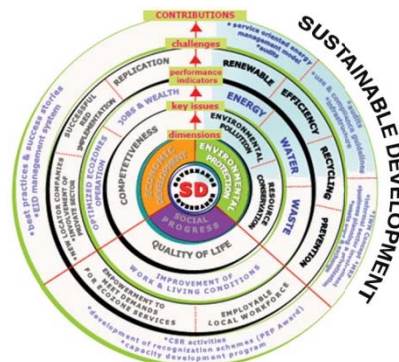


Figure 3 EID Sustainable Development Concept

<sup>2</sup> Lowe et al. 1998

## PEZA'S VISION

*PEZA ensures that environment and its conservation are not compromised by intensified business operations. PEZA aims at reducing the negative effects of industrialization on the local environment and community while enhancing business competitiveness. Thus, PEZA adopted its EID Policy;*

### PEZA EID Vision

*PEZA economic zones shall be globally competitive investment destinations using the best available technologies and methodologies to ensure sustainable eco-industrial development through environmental protection and optimum use of resources to serve the needs of the present and future generations.*

### PEZA EID Mission

*To integrate the development and operations of PEZA economic zones with surrounding communities towards sustainable development, balanced environmental protection, economic competitiveness and social progress through partnership with stakeholders and other government agencies.*



Figure 4 PEZA Website Banner

## PEZA EID Action Statements

PEZA, as the advocate and facilitator of Eco-Industrial Development (EID) in the Philippines, shall:

1. Promote EID within PEZA and partner agencies involved in industrial development of the Philippines;
2. Initiate and facilitate the integration of EID-principles into the development and operations of economic zones;
3. Provide and facilitate continuous internal and external capacity development and education related to EID and environmental concerns;
4. Document, benchmark and disseminate EID best practices; and,
5. Actively network with other eco-industrial initiatives in the Asian region.

These action statements support PEZA's corporate strategies, policies and guidelines in eco-industrial development, which shall be over and above minimum legal requirements. PEZA motivates and empowers its locators to join the EID initiative.

*PEZAns bear the responsibility to make this happen.*



Figure 5 Philippine Economic Zone Authority Head Office

## APPROACH & ACTIVITIES

### EID MANAGEMENT MANUAL: LIVING SYSTEM OF PEZA

The EID Management Manual documents PEZA processes in a detailed manner in order to provide techniques that are invaluable tools to aid EID individual staff, teams and organizations for effective planning, operation and control of EID processes.

The manual also serves as a compilation of resource-efficient, environmentally sound and user friendly tools and best practices. Furthermore, it can be the basis for benchmarking and replication of other public and private zones who wish to adopt EID Initiatives.

The focal users of the manual are the Environmental Safety Group (ESG) & the Fire and Industrial Safety Divisions (FISDs). They had undergone proper training and intense core competencies development programs to incorporate EID in PEZA processes. This way in turn, makes the manual a “living system” of PEZA. The documentation is equally important to other PEZA stakeholders and cooperation units as well.

As a learning organization, PEZA, through the provision of these documented tools, can further develop, expand and promote the EID Management System; Gearing towards continuous improvement in the promotion of sustainable development and creation of globally competitive Philippine Economic Zones.

### IMS: TOOL TO BETTER MANAGE ECOZONES

The EID-Information Management System (IMS), a web application database, aims to use modern technologies to monitor environmental performance of the economic zones.

Monitoring of environmental performance is both a challenge and a necessity to PEZA. The IMS therefore, facilitates easier and faster data collection. It will eventually support benchmarking, decision-making and problem solving with real-time and accurate information, in a time & cost effective manner.

*The benefits of IMS for PEZA ecozone developers, locators and stakeholders are as follows:*

- Provides a central source of reliable information about relevant operation issues (environmental regulations, permits, clearances, etc.)
- The ‘self-service’ feature of the IMS encourages transparency, accountability, time and cost efficiency of PEZA processes
- Makes individual company performance information available in mutually-recognized format, for use in complying with related agencies’ reporting requirements (i.e. environmental & regional authorities such as Department of Environment and Natural Resources – Environmental Management Bureau (DENR – EMB), Laguna Lake Development Authority (LLDA), Multipartite Monitoring Team (MMT), etc.)
- Can be used as a direct communication platform with PEZA (zone and central offices)
- Environmental Monitoring system of area-based MMT made easy through readily available and automatic consolidation of information of its members
- Provides information to derive new policies (e.g. management of natural resources)



Figure 6 EID Integrated Management System

## PEZA'S EID-TOOLBOX

During the PEZA-GTZ EID project (2006-2009) the partners developed a selection of EID-Tools which have been implemented in the pilot zones and are ready for implementation at a broader scale at the end of the project.

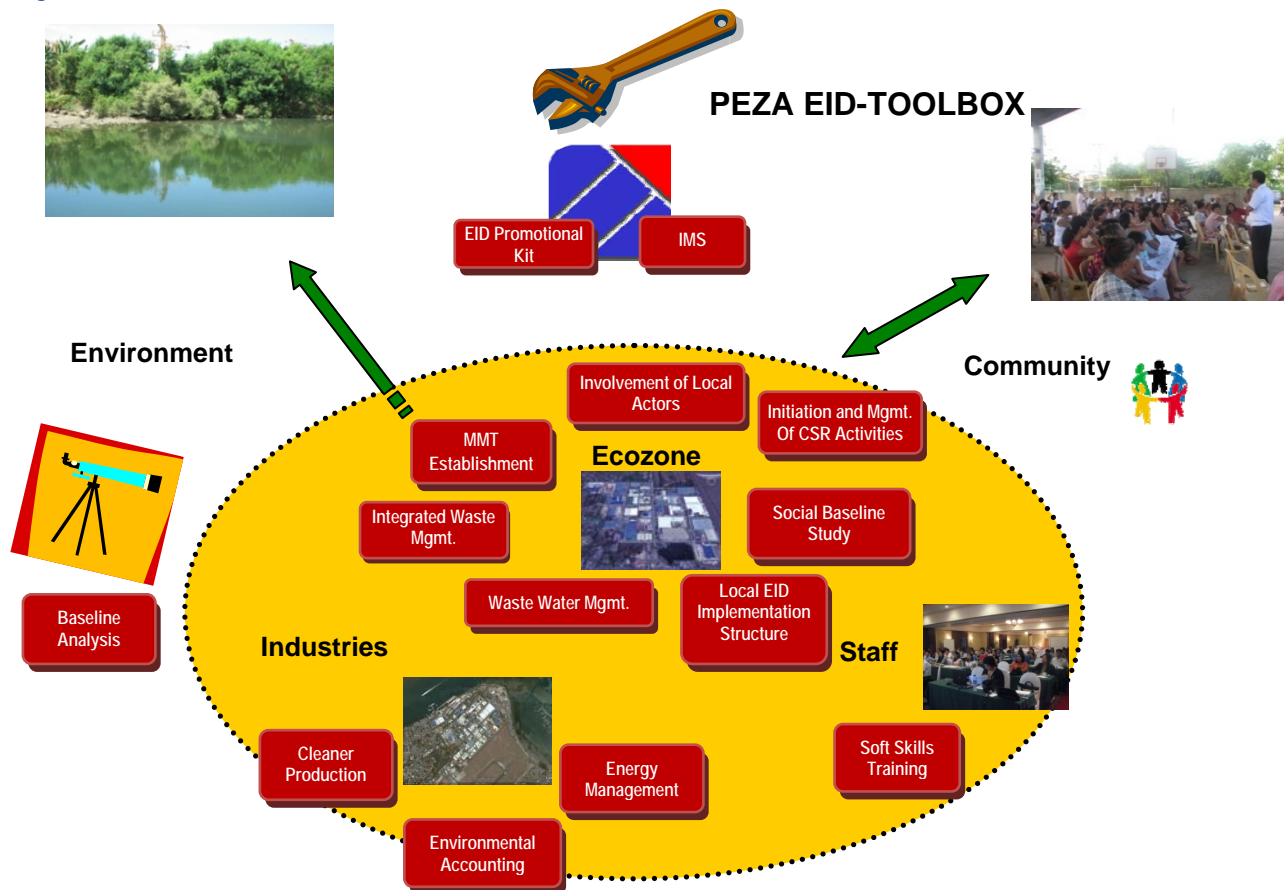
The EID-Toolbox comprises instruments and approaches to tackle the most relevant challenges in Philippine Economic Zones. The figure gives an overview on the toolbox.

All tools will comprise the following elements:

- Comprehensive documentation including lessons learnt, approaches and materials for implementation
- Orientation training course on the tool – particularly for PEZA staff
- Pool of resource persons for implementation

More details on selected EID-tools are presented in the following sections of the brochure.

Figure 7 PEZA EID Toolbox





## MEZ MULTI-PARTITE MONITORING TEAM

A joint approach to undertake efficient monitoring of environmental quality in the zones and their neighborhood; function of the MMT for conflict / consent management; increased quality of environmental information for more efficient measures to improve environmental quality;

To improve environmental management in the pilot zones, PEZA established the Multipartite Monitoring Team. Tasks of the MMT are:

### Joint approach to efficiently monitor environmental quality

Air, surface and ground water monitoring are undertaken quarterly by members. Monitoring expenses are shared by all member-locator enterprises. Results are analyzed, discussed and sources of problems investigated for prompt action.



Figure 8 MMT Regular Monitoring

### Check-and-balance mechanism in monitoring project implementations

New projects / facilities are monitored to determine effective implementation of environmental measures to mitigate negative environmental impacts.

### Conflict management

Complaints from neighboring communities and locator enterprises are investigated and course of action recommended to address the problem. Environmental information about the zone is disseminated to the community.

### Link of PEZA and its locators to neighboring communities



Figure 9 MMT Information & Education Campaign

Coordinate with the LGUs to identify the needs of the community that can be provided by PEZA and its locators. Communities will seat and vote in the monitoring team, changing the eco-zone from “black box” to a transparent partner, opening a wide range of opportunities.

## WASTEWATER MANAGEMENT IN PHILIPPINE ECONOMIC ZONES

*EID Wastewater Guideline optimizes operating procedures of Sewerage Treatment Plant and encourages responsible use of water and ensures compliance with existing rules and regulations*

Water is one of the resources extensively used by the industrial sector. In terms of quantity, large volumes of water are often required as a main or direct raw material in manufacturing including washing, cooling, steam generation, and so on. In terms of quality, the industrial sector generates wastewater that when discharged directly to receiving bodies of water, whether intentional or not, may alter its water quality making it unfit for its intended use.

Over the years, the importance of water conservation and protection through the management of wastewater has been realized by various sectors including the government and the industry. In the Philippines, a range of rules and regulations were enacted to address water pollution. The most comprehensive of which is The Philippine Clean Water Act of 2004 (Republic Act No. 9275).

In Philippine economic zones, the management of wastewater varies from one zone to another. There are zones equipped with centralized wastewater treatment facilities that could accommodate the volume generated per day by each locator enterprise. There are zones that have no facility to treat industrial wastewater and sewage, thus, each locator enterprise must appropriately treat their own wastewater.



Figure 10 Wastewater treatment facility

To strengthen wastewater management in Philippine economic zones, PEZA-GTZ Eco-Industrial Development project adopted two strategies. The first one is focused on encouraging the use of appropriate technology to ensure compliance of wastewater to effluent standards. The second one is focused on the development of consistent policy on wastewater management to encourage responsible use of water and compliance to regulations in all economic zones.

The first strategy was implemented intensively in the pilot zone, Mactan Economic Zone 1 (MEZ 1), through the maximization of performance of its existing Sewerage Treatment Plant (STP). Audits were done to check its performance efficiency and economy. Based on the results, operating procedures were improved which resulted in optimized performance of STP. Currently, these operating procedures are replicated in the other economic zones.

The second strategy focused on the development of a consistent policy on wastewater management that is consistent with RA 9275. Thus, PEZA Wastewater Management Guideline was conceptualized and developed for industrial park developers and locators. Adopting a pro-active approach, the draft was presented to stakeholders, including representatives from regulatory agencies, through roundtable discussions and participatory consultations which were done on different occasions.

## WASTE MANAGEMENT IN PHILIPPINE ECONOMIC ZONES

Operation of economic zones, especially in manufacturing world-class products generates diverse waste. Managing such waste streams is never an easy task.

PEZA has instituted policies, in consistency with the laws, rules and regulations being implemented by the Department of Environment and Natural Resources (DENR) to control various types of wastes. There are policies for movement and disposal of hazardous wastes and residual wastes, and selling of scraps.

Though policies have been established, difficulties in waste management still persist. One of the major challenges is where the waste should be brought to because of the limited acceptable disposal facilities available and their proximity to the ecozones.

As part of the EID initiatives, the Integrated Waste Management System (IWMS) for the pilot zone (MEZ 1) has been commenced. IWMS promotes prevention and recycling, addresses different waste streams, strengthens capacities of private service providers, involves informal groups and neighboring communities, for a socially balanced and market orientated overall solution.

New schemes are being piloted both involving informal waste sector:

- Composting of organic wastes (mainly from canteen kitchen, contributing about 75%) as part of a comprehensive community project including tree nursery and sustainable reforestation;
- Producing alternative fuels and raw materials (AFR) for the cement industry in cooperation with the GTZ Public Private Partnership (PPP)-Strategic Alliance with Hocim
- Used oil is now being sold, tires go to service centers and cement industries;

All activities are conceptualized, aligned and implemented in cooperation with main stakeholders, namely locators, service providers, communities and other partners for sustainability.

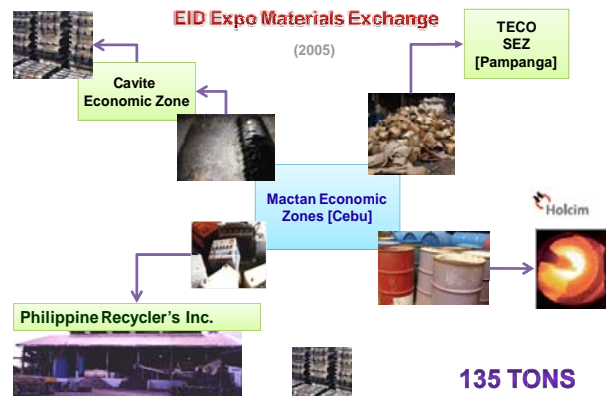


Figure 12 EID Material Exchange Expo

IWMS not only applies technological solutions but it is a management approach that establishes linkages with different stakeholders to reduce the amount of waste being sent to the disposal facilities.

Figure 11 Vermi-compositing Composting Project

## STRENGTHENING OF INTERNAL CAPABILITY IN ENERGY MANAGEMENT

Efficient use of energy through proper management increases company productivity and reduces negative environmental impacts. Hindrance to good energy management in companies are the lack of knowledgeable/competent personnel, misconceptions on the cost and efforts involved, lack of strong personnel motivation to introduce improvements and the lack of strong communication link between technical personnel and top decision-makers.

EID's integrated management approach focuses on both company system and technical improvements while considering the zone's demand and supply conditions. Furthermore, opportunities for energy exchange within and amongst companies are explored as well as the potentials of renewable energy use.

Activities include

- Focused Group Discussions
- Sharing of best practices
- Technical Trainings
- Walk- Through and Detailed Audits
- Coaching
- Monitoring and Targeting as well as Benchmarking
- Service-oriented management concept for the zone
- Identifying and exploiting synergies among key players such as locators, academe, government agencies, and service providers



Figure 13 Halsangz Plating Energy Management

Benefits include reduction in energy cost and in negative environmental impacts. Moreover, personnel's knowledge, skills and concern for energy conservation are enhanced through the trainings and positive experiences from implemented projects.

A company serious in increasing its profitability can find a lot of saving opportunities in its energy management system. For support, it can find many of the required resources locally within easy reach. Many good trainers, energy auditors and new technologies may be sourced from more advanced companies within the zone, local government agencies or from the academe. All it takes is a strong committed partner like the economic zone authority to initiate identification of these resources and to facilitate the process of sharing.



Figure 14 Energy Management Conference "Pursuit of Excellence" Awardees

An outcome of EID energy management approach is a culture of learning and sharing where companies and the environment benefits.

An Energy Management Workbook was compiled comprising the numerous Energy Management tools developed and tested during the pilot phase, giving comprehensive guidance on how to approach and initiate energy management in industrial estates and/or enterprises.

## STREAMLINING A ROAD MAP TO CORPORATE SOCIAL RESPONSIBILITY

The introduction of PEZA-GTZ EID management approach in the Philippine , piloted in MEZ I+II magnifies PEZA’s commitment to spearhead socially responsible and environmentally friendly development in national eco-zones to a level which places a premium on sustainability, entrepreneurship and environmental social consciousness.

### Realizing the importance of strategic community cooperation

To strengthen community- ecozone partnership, EID partners with communal groups such as cooperatives and urban poor associations, informal sector, eco-zone locators, industrial associations and LGUs and other government agencies. Moreover, the annual PEZA Community Awards encourages locators to pursue community projects in the areas of education, environment, health, human services and advocacy.

### Embedding CSR in a Local Development Plan

PEZA-GTZ EID conducted a social baseline study in MEZ and the zones’ neighbor communities to concretely identify present challenges, potentials and requirements in both barangays and among locators. Areas and ways to enhance corporate-community partnership through future CSR activities were pointed, verified and approved.

### Project Development and Implementation

EID applies a two-fold approach to CSR project development: awareness raising and small business development support. An EID business planning workshop for barangays e.g. produced project sketches for current and planned CSR initiatives addressing community challenges and locators’ requirements:

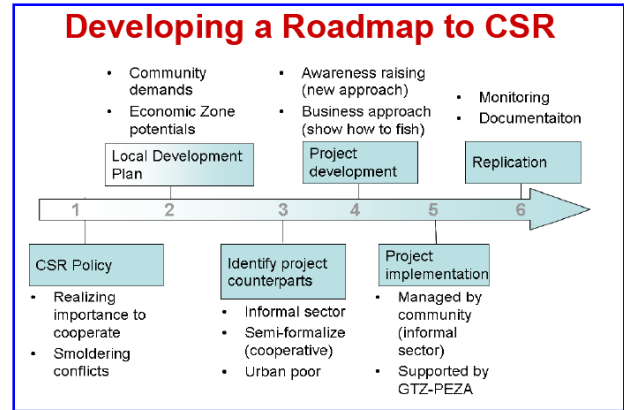


Figure 15 Roadmap to CSR

- Health Plus Outlet for generic medicines, targeting community and MEZ market (in cooperation with GTZ Health and GTZ Private Sector Promotion programmes)
- Vermi-composting facility and tree nursery in the zone (in cooperation with GTZ Solid Waste Management Project)
- Public Sanitation facilities in the barangays (in cooperation with GTZ Water & Sanitation Program)
- Child Care Center for MEZ employees

To create community ownership of the projects, CSR initiatives planned and initiated thru the help of EID are managed by the identified community groups or the informal sector. PEZA-GTZ supports the group in its endeavors through project-specific capacity building activities and facilitating regular multi-stakeholder dialogue between the various partners.

### Replication in other eco zones

The impact of MEZ’ CSR projects is being cascaded to other economic zones. The success of the Ibo HPO with a 30% decrease in average monthly household spending on drugs, already inspired other Public Economic Zones (PEZ) to follow the MEZ example.

## REPLICATION APPROACH FOR PUBLIC AND PRIVATE ZONES

*Promotion for application of private zones, outlining requirements, general approach for replication, roles of ESG, environmental units, private developer and companies;*

Comprehensive implementation of EID-measures was initially concentrated on the two pilot zones MEZ 1 and MEZ 2; however, the EID-project is geared to be replicated in all Philippine Economic Zones.

For introducing interested developers and other stakeholders to PEZA's EID Approach the project will provide an EID Promotion Kit which can be used not only by ESG and FISD staff but also by stakeholders willing to promote the idea of eco-industrial development in their field of activities.

The EID Toolbox is applicable not only in industrial ecozones, but also matches the requirements of the other types of ecozones in the Philippines.

EID initiatives are being rolled out to the other three public zones – first steps have already been taken in Cavite Economic Zone. Private Zones are encouraged to join in the initiative.

For the purpose of replication, PEZA and GTZ developed the Baseline Analysis Tool for identification and planning of the most appropriate EID strategy in the zones. The following figure illustrates the working steps of this tool.

Data collection focuses on

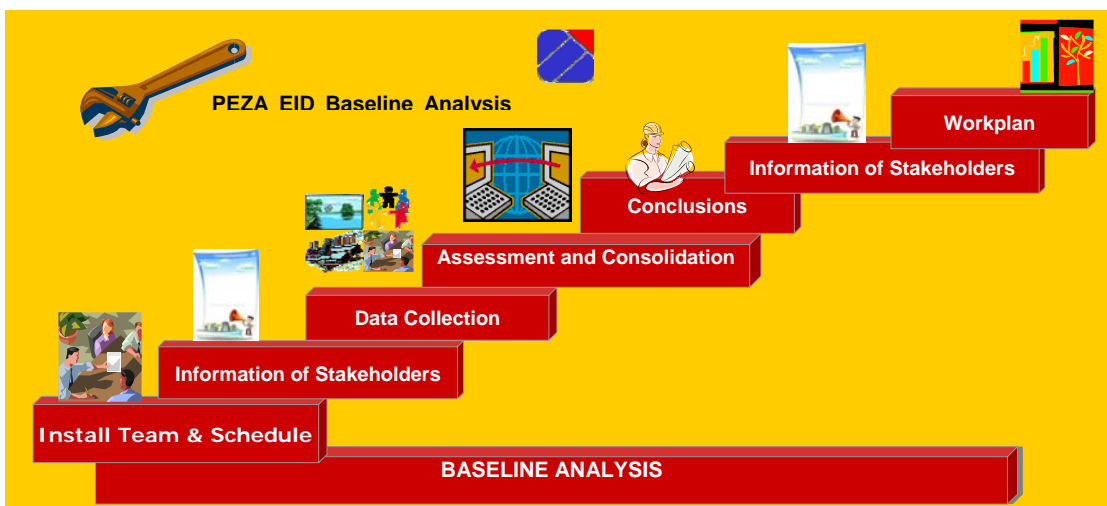
- Existing infrastructures in the economic zone (wastewater treatment etc.)
- Available capacities at local level
- Community relationships, and
- At company level on the self-monitoring reports;
- If necessary interviews with selected stakeholders will be executed.

Data assessment and consolidation is based on the PEZA EID-Information Management System using mainly information from the self-monitoring reports of the companies.

A core issue of the tool is the participation of stakeholders (developers, locators, responsible authorities) which will be ensured by two major events at the beginning and the end of the analysis and a continuous information exchange between the parties.

PEZA is aware that the replication of the EID-Approach requires comprehensive capacity development of the involved staff. Hence all EID-Tools, including the Promotion Kit and the Baseline Analysis Tool, are delivered as a package together with introductory training for the staff implementing the EID activities.

Figure 16 EID Baselin Analysis Steps



## PARTNERS & THEIR ROLES

### PEZA

#### **Philippine Economic Zone Authority**

As an important national development strategy, the government promotes the establishment of world class, environment friendly economic zones (ecozones) all over the country to respond to demands for ready-to-occupy locations for foreign investments.

At the helm of this strategy is the Philippine Economic Zone Authority (PEZA), a government corporation established through legislative enactment known as “The Special Economic Zone Act of 1995.”

PEZA is 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.

PEZA offers ready-to-occupy locations to foreign investors who are export producers or IT service exporters in world class and environment friendly Economic Zones and I.T. Parks / Buildings.

### GTZ

#### **Gesellschaft für Technische Zusammenarbeit – German Technical Cooperation**

GTZ, the German Government’s international development enterprise, has cooperated with the Philippine partners for more than 33 years. We strengthen the capacity of people and institutions to improve the lives of Filipinos in this generation and generations to come.

Together we work to balance economic, social and ecological interests through multi-stakeholder dialogue, participation and collaboration in the

sectors: Environment, Sustainable Economic Development, Health, Decentralization and Crises Prevention & Conflict Transformation.

GTZ is part of the German Development Cooperation.

### DENR-EMB

#### **Department of Environment and Natural Resources – Environment Management Bureau**

EMB is a line bureau of the DENR, who is mainly responsible for the implementation and enforcement of environmental legislation:

- Air, water, toxic and hazardous chemical management;
- Environmental Impact Statement System; and
- Environmental Compliance Monitoring.

### MEPZCEM / FAMEA

#### **Mactan Export Processing Zone Chamber of Exporters and Manufacturers / Facilities, Maintenance and Environment Association (MEPZCEM/FAMEA)**

MEPZCEM is the association of Mactan Economic Zone locators and select companies in neighboring economic zones. Established in 1984, it boasts of 130 members. Company representatives include CEO or other member of top management.

Currently, it has 7 support groups, one of which is FAMEA, representing its various interests.

MEPZCEM’s role in EID management approach in economic zones is setting the EID thrusts together with zone administration, and the provision of required resources to realize them. As such its tasks include the review and approval of EID programs and budgets.

FAMEA, established in 2001, serves as overseer of MEPZCEM’s interests in the areas of utilities,

maintenance and environment. Its members are officers-in-charge of these departments.

It plays important roles in EID management approach as it serves as MEPZCEM's source of information and advice. Moreover, it is MEPZCEM's implementing arm of approved EID programs.

For the zone locators, FAMEA serves as information source on new developments, changes in laws, policies, and guidelines. It is the initiator of capability building trainings to maximize opportunities in EID; and is the center for advocacy of policies affecting the locators.

Its tasks include organization of fora, trainings and best practices sharing rallies, preparation of position papers on new policies, and provision of services like in-house trainings and energy audits.

#### PCAPI

##### **Pollution Control Association of the Philippines Region 7 (PCAPI7)**

PCAPI7 is the association of pollution control officers (PCOs) or environmental officers of companies located in the Central Visayas region, including economic zones companies. Organized by the government's Department of Environment and Natural Resources (DENR) to facilitate information dissemination and compliance of environmental laws, it was registered with the Securities and Exchange Commission in July 1980.

Its role is very much like that of FAMEA's but it serves a wider area as its mandate covers the entire Central Visayas region. Its tasks include organizing fora to discuss new or revisions in environmental laws, policies, guidelines, and DENR developments; conduct of capability building trainings; implementing environmental improvement projects in partnership with international and local organizations; and preparing position papers on issues affecting the industry from which majority of its over 300 members belong. It also has a few

members from the academe and local government units.

Like FAMEA, PCAPI7 provides trainings and additional support for the implementation of EID programs in the zones, with guidance from DENR.

#### DOE-PELMATP

##### **Department of Energy (DOE) / Philippine Efficient Lighting Market Transformation Project (PELMATP)**

DOE is the government's arm in the promotion of energy efficiency and renewable energy in the country. One important target sector is industry.

On the other hand, PELMATP is a UNDP (United Nations Development Programme) funded project of the DOE that aims to promote efficient lighting across the country.

Both DOE and PELMATP are potential service providers to support company requirements for energy management trainings and energy audits.

DOE undertakes regular energy consumption monitoring that generates important data for the zone's EID energy programs. Moreover, DOE's annual Don Emilio Energy Award for companies provides strong motivation for the pursuit of excellence in this field.

#### DOST

##### **Department of Science and Technology (DOST)**

DOST is the government agency whose mandate is the development of science and technology in the country and their utilization for the country's growth.

Like DOE, it assists companies in their trainings and company audit needs plus it is a source of new technologies to enhance company productivity and address quality and environmental issues.

DOST has developed a pool of local experts in the field of Cleaner Production and Energy Management



coming from the industry and academe to cater to the needs of small and medium enterprises. It has also recently acquired energy audit instruments to improve training and audit services.

## BARANGAYS (NEIGHBORING COMMUNITIES)

### Barangays Ibo and Basak, Lapu Lapu

Ibo and Basak are the two barangays identified as target communities for the CSR initiatives spearheaded by PEZA and initiated thru the EID project. Both Ibo and Basak, with 12,000 and 25,000 inhabitants, respectively, face pressing social issues such as poor sanitary conditions, insufficient health care provisions and environmental pollution. EID supports communal groups such as the Ibo Manufacturing Multipurpose Cooperative or Basak Urban Poor group in their ambitions to set up small businesses that generate income for the residents and address the prevailing community challenges.

## MEZ 1 AND MEZ 2 (PILOT ZONES)

### Mactan Economic Zones



Figure 17 Mactan Ecozone

### MEZ 1 – Public Economic Zone

Presidential Proclamation No. 1811 in January 15, 1979 declared the 120 hectare area at the northern tip of Mactan Island as the Mactan Economic Zone 1 (MEZ1). In 1995, the area was further expanded by 30 hectares, increasing the total area to 150 hectares.

It is one of the four government-owned economic zones (ecozones) in the country, where, through PEZA, incentive packages as well as basic requirements (i.e. utilities, communication, and manpower pool) are being offered to the investors. For many years, the ecozones serve as gauge on how effective the government is in its thrust in pushing the economy forward through foreign investments.

MEZ 1 is now a home for 105 locators producing various products from electronics to fashion accessories and garments.

### MEZ 2 - Special Economic Zone

Unlike MEZ 1, Mactan Economic Zone 2 (MEZ2) is one of the Special Economic Zones (SEZ), which are privately-owned ecozones. The operations of these ecozones are also handled by private developers with the facilitation of PEZA.

MEZ2 was established in 1995 covering a 63 hectare area. Currently, MEZ2 has 49 locator enterprises and its area is already about 90 % utilized.

### Role of MEZ1 and MEZ2 in EID Implementation

MEZ1 and MEZ2 play a vital role for the EID implementation as pilot ecozones for the project. Most of the EID activities for creating synergies and partnership, and contributing directly to social progress of the near-by communities were implemented in these ecozones. They also served as focal points and information centers for EID programs

## Dreams Happen

by Medge Garvida

Mary Jane Cahilog has dreamt of three things most of her life: helping her neighbors to find livelihood, become healthy, and live in a clean and green environment. Being the wife of the Ibo village captain, she witnesses first hand how poverty and lack of sanitation facilities worsen the health condition of the 12,000 village residents.

Mary Jane knows that being close to Mactan Economic Zone 1 - a large area where manufacturers, exporters and other investors are given world-class facilities and tax incentive—should be a good opportunity to make her dreams happen. Unfortunately, she used to see the economic zone more as a threat to Ibo folks being displaced from their homes and as a major cause of environmental pollution.

Mary Jane never thought that the Philippine Economic Zone Authority (PEZA) itself could be a partner in making her dreams happen. Her perception changed drastically after the GTZ -Eco-Industrial Development in partnership with PEZA (GTZ-EID PEZA) team approached her and the Ibo officials to discuss a possible partnership to address issues of livelihood, health, sanitation and environmental protection.

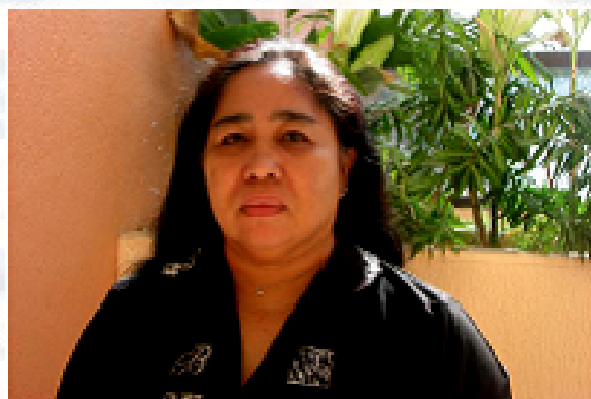
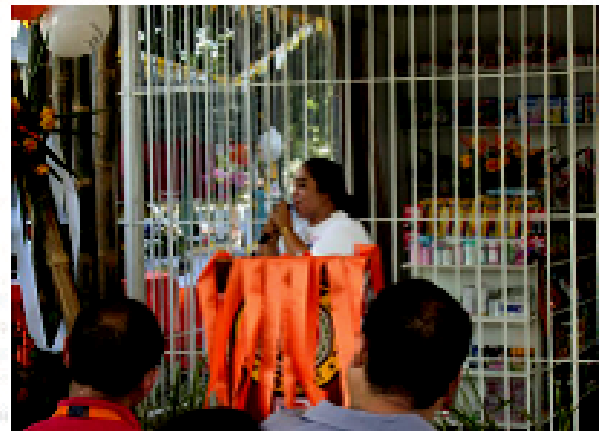


Figure 18 Mary Jane Cahilog, President, Ibo Mfg Multipurpose Coop.



This partnership resulted in identifying several projects like establishment of Health Plus Outlet (HPO), Communal Sanitation Facilities (c(S)r), Seed Nursery and Vermi Composting.

Mary Jane was almost in tears during the opening of IBO HPO last March 18, 2008 when she proudly announced that affordable and quality generic medicines, family planning commodities and health education are now available for all residents of Barangay Ibo and employees of MEZI.

She and other housewives started the Ibo Manufacturing Multi-purpose Cooperative to help their husbands earn a little more and help their community. They attended GTZ trainings to learn about writing a business plan, market analysis and marketing. The IMMC membership tripled in just six months.

Her excitement was contagious as she encouraged everyone to work harder for the projects that will make their common dreams come true.

## Industry helps to protect Mactan's marine resources

by Ester Ivy Tariman

**C**an an island with rich marine resources still host an industrial zone? This was the burning question in Mactan, an island in Central Philippines, which boasts of a booming tourism industry built around its fine beaches at the same time hosting two major economic zones—Mactan Economic Zone 1 (MEZ1) and MEZ 2.

*"Yes, it can," says Engineer Raff Ortega of the Mactan Economic Zone 1. "For as long as the right pollution control devices are in place, industry can operate without harm to the environment."*

Recognizing the threat of industrialization to the environment, the Philippine Economic Zone Authority constructed a plant to treat wastewater before it is discharged to Mactan Bay. Once operating, the sewage treatment plant was audited to determine its capacity, how to improve operations, and ways to get more companies to utilize the plant.

GTZ was tapped to assist in the audit. Through its Eco-Industrial Development project, GTZ determined that the sewage treatment plant had sufficient capacity to treat wastewater from the zone, that its discharge water was well within government standards, and that plant efficiency could be further improved to reduce operating costs.

For example, it was found that the dissolved oxygen in the wastewater was higher than mandated, meaning that the aerators of the treatment plant could be turned off at regular interval without affecting water quality. This resulted in a savings of 22.5 percent in energy costs.



Figure 3 PEZA GTZ EID SD Concept

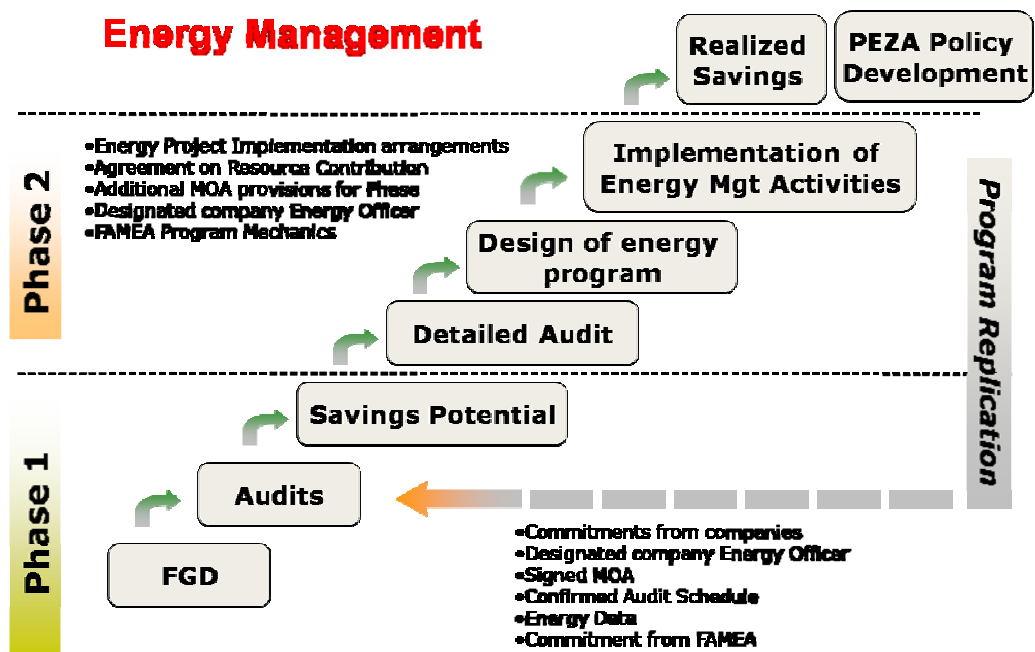


Figure 19 Energy Management Steps

## SPECIAL THANKS

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