

THE METRO CEBU ENVIRONMENTAL IMPROVEMENT PROJECT

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I. METRO CEBU PERSPECTIVES

General Information

The island Province of Cebu is located in Central Philippines, about 600 km south of Manila, the country's capital. Metropolitan Cebu, where economic activity is concentrated, is a coastal urban sprawl comprising four (4) cities of Cebu, Mandaue, Lapu-lapu and Talisay; and six (6) municipalities of Compostela, Lilo-an, Consolacion, Cordova, Minglanilla and Naga. It has an approximate total land area of 74,209 hectares (Metro Cebu Ecological Profile, Filteknik Inc.). Metro Cebu's population was estimated at 1.3 million in 1990 and projected to reach 2.3 million by year 2010 (PCEEM Project Report, June 1998). It hosts at least 70% of the approximately 1000 industries in Region 7.

Records from the Land Transportation Office-Region 7 showed that in 1994 there was a total of 124,561 registered motor vehicles. During the 5-year period from 1990-1994, an average annual increase of 11.5 % was also noted. Motor vehicles have been identified as a major source of air pollution in the country.

As of 1998 Metro Cebu's water demand is estimated at 234,000 cum. per day, rapidly increasing to 375,000 cum. per day by year 2010. Main source of water supply for domestic and industrial use is groundwater, deriving mainly from the coastal limestone aquifer and alluvial water-bearing formation in the river deltas of five rivers, namely: Kotkot River, Cansaga River, **Butuanon River**, Mananga River and Pangdan River.

Air Quality

Rapid urbanization and industrialization in the metropolis showed its serious toll to the environment. Ambient air quality monitoring conducted for the past six (6) years showed poor air quality (see figs.1, 2 & 3). The monitoring results indicate that present policies, programs, and/or practices are not enough to address air pollution.

Figure 1.

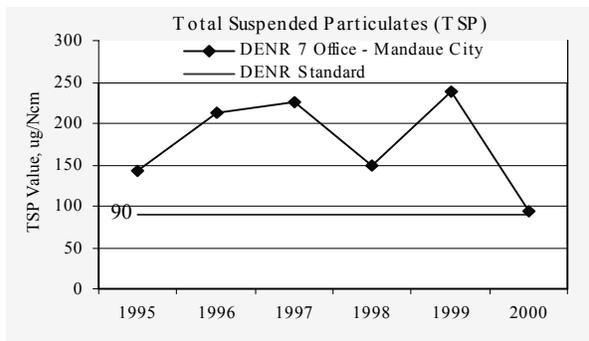


Figure 2.

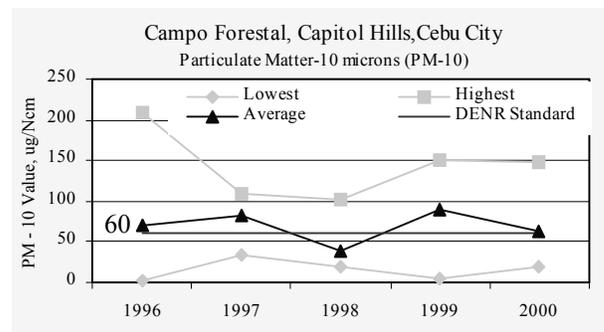
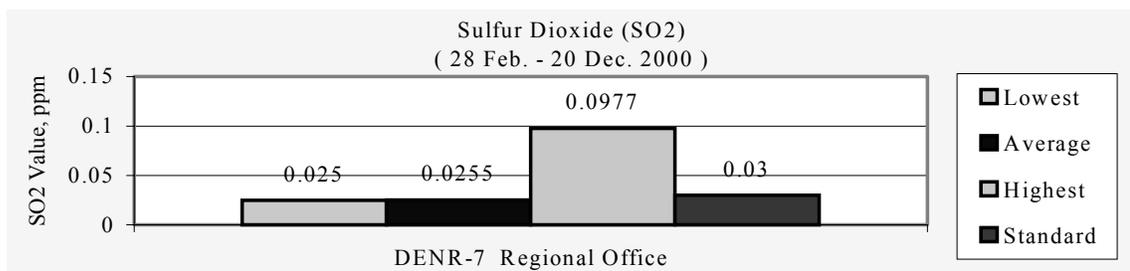


Figure 3.



Water Quality

Monitoring of water bodies in Metro Cebu started in 1990. Since then, ten (10) rivers and four (4) coastal areas have been monitored. Typically, rivers traversing the urban center, i.e. Cebu City and Mandaue City, have poor water quality. Annual average biological oxygen demand (BOD) values ranges from **13 mg/li to 81mg/li** as compared even to the **least stringent Philippine standard of 15 mg/li** for class “D” freshwater body. For rivers located in the different, comparatively low population density municipalities of Metro Cebu, water quality is still **satisfactory** (see table 1 & 2).

Table 1.
1990 - 2000 Water Quality Monitoring for Selected Rivers in Metro Cebu

	Name of River	Location (Municipality or City)	Year Officially Classified	Official Classification	Year monitored	Parameters Average	
						BOD (mg/li)	DO (mg/li)
1	Butuanon River	Mandaue City	2000	D	1992	34.82	8.2
					1995	64.28	5.6
					1996	13.25	5.26
					1997	39.91	4.65
					1998	81.69	1.72
					2001 (1 st half)	72.48	1.86
2	Guadalupe River	Cebu City	1999	A- Upstream of Sandayong Bridge C- Downstream of Sandayong Bridge	1999	46.14	0.99
					2000	66.19	1.0
3	Cansaga River	Consolacion			1999	14.23	4.5
					2000	13.75	4.25
4	Cotcot River	Liloan-Compostela	1997	A- Whole Stretch	1989-90	2.8	6.6
					1997	0.9	8.8
5	Mananga River	Talisay	1997	A- Whole Stretch	1997	0.73	7.3
					2000	1.18	7.56

Table 2. Water Quality Criteria for Fresh Waters

Parameter	Water Body Classification				
	AA	A	B	C	D
Biochemical Oxygen Demand (BOD ₅), mg/li	1	5	5	7(10)	10(15)
Dissolved Oxygen (DO), mg/li	5	5	5	5	3

Solid Wastes

Only 60 % of garbage or solid wastes generated in Metro Cebu is collected and brought to open dumpsites. The rest have been burned or buried by households or end up into canals/rivers and eventually to the sea. Part of the collected garbage such as plastics, metals, paper/paperboards, and glass/cullets are recovered by scavengers for recycling in various local plants.

In the mid-90s, Cebu City constructed the first Integrated Sanitary Landfill Facilities but operations have been mired by an array of technical, financial and administrative problems resulting to “open dumping in a sanitary landfill.”

Current Government Policies and Programs

The Philippines has promulgated quite a number of Environmental Laws, to name some as follow:

1. Presidential Decree No. 984 – Pollution Control Decree of 1976
2. Presidential Decree No. 1586 – establishing the Philippine Environmental Impact Statement System(1978)
3. Republic Act No. 6969 – Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990
4. Republic Act No. 8749 – Clean Air Act of 1999
5. Republic Act No. 9003 – Ecological Waste Management Act of 2000

To compliment said laws the government also implemented some programs/projects, currently notable of which are as follow:

1. **Industrial Initiative for Sustainable Environment (IISE)**- intended to promote self-regulation in industries by establishing Environmental Management System (EMS) or sought for ISO 14000 certification.
2. **The Philippine Environmental Partnership Program (PEPP)**- intended to promote partnership among government, industry, NGOs, and funding institutions.
3. **The Cebu Central Treatment Facility, Inc.** – a common treatment facility for wastewater from metal surface finishing industries like electroplating plants. It is a private company established in 1998 with most clients as its own stockholders, promoting patronage and sustainability.

II. THE PROJECT

Background

Kitakyushu City had initiated establishing cooperation with Metro Cebu since 1996, dispatching experts and conducting seminars and conferences in Cebu City and Kitakyushu City (*Environmental Cooperation in Kitakyushu; Reiji Hitsumoto; JICA Training Course; June, 2001*). These initial activities have significantly established the valuable link between the two cities with the collaboration of local and national governments and partner institutions in Kitakyushu, such as JICA, KITA, World Bank and JBIC and counterparts in Metro Cebu. Said activities also provided vast information on prevailing environmental issues which led to conceptualizing **the Metro Cebu Environmental Improvement Project**.

Objectives

Project implementation is guided by the following general objectives:

1. As pilot project of Kitakyushu Initiative for a Clean Environment, whereby experiences and know-how of Kitakyushu would be shared.
2. To formulate a local Environmental Improvement Master Plan.
3. To encourage citizens' participation in environmental protection.
4. For Kitakyushu to support solving the environmental problems of Metro Cebu thus contributing to global environmental conservation.
5. Through inter-city cooperation, the City of Kitakyushu would realize "transparent ODA", which vitalize all stakeholders, for citizens in both countries.

The Process

The series of seminars and conferences conducted since 1996 through this year in Cebu City and Kitakyushu City drew participation from local and national officials, industries, research institution, NGOs and other citizens' groups from both cities.

Recommendations were then evaluated and taken into consideration to address various environmental issues and problems like, the need for more citizens' awareness and participation, promotion of environment-friendly technologies, funding requirements, capability building of key stakeholders, stronger institutional linkages and policy concerns. Based on these recommendations some projects have already started while others are on the planning stage.

On-going Activities

1. Introduction of Cleaner Production (CP) Techniques

CP is the latest trend in environmental management in industries. It is primarily intended to minimize waste and save valuable resources such as process raw materials, energy and water.

- **Objectives:**
 - a) Encourage both company owners/CEOs and other key employees to practice CP techniques.
 - b) Establish a model local industry to practice CP techniques.
 - c) Develop a CP Manual.

- **Activities:**
 - a) Early this year a technical staff from a volunteer local ceramic industry received training in a similar industry in Kitakyushu City. Said training would facilitate development and implementation of CP techniques in his company, which will serve as model for local industries.
 - b) Preparation of CP Manual is still on consultation stage.
 - c) Seminar for company owners, CEOs and Pollution Control Officers is under planning stage.

- **Sharing of Experience**

Achievements of said local volunteer company would be fully documented and shared to other industries. Variety of industry types does not significantly matter for the concept is generally applicable. Of course there may be some constraints like funding, but industries can choose among the no-cost, low-cost and high-cost options that is achievable in the short, medium or long terms. One key element here is to overcome the common attitude of “**to see is to believe**”.

2. The Metro Cebu Environmental Improvement Master Plan

Framework Plan

With the remarkable assistance of workaholic staffs from Kitakyushu City’s Office for International Environmental Cooperation, the **Framework of the Metro Cebu Environmental Improvement Master Plan** is currently being developed by me within my 5-months stay in Kitakyushu City that will culminate by the middle of next month. It is essentially influenced by Kitakyushu’s environmental history, legacy, present practices, policies and programs. This **Framework Plan** outlines among others, the local environment vision and strategic policies and projects to address various environmental issues and problems.

The policies cover the following primary concerns:

- a) Air Quality Management
- b) Water Quality Management
- c) Solid Waste Management
- d) Urban Greening and Upland Reforestation
- e) Human Resource Development
- f) Citizens’ Awareness and Participation

The Framework plan likewise outlines other specific projects as follow:

- a) Environmental Improvement of Butuanon River(Mandaue City) and Guadalupe River (Cebu City)
- b) Prevention of Air Pollution from Motor Vehicles and Factories
- c) Environmental Monitoring
- d) Ecological Waste Management
- e) Citizens’ Cooperation Exchanges
- f) Establishment of Environment Information and Training Center
- g) Establishment of Eco-industrial Park

Final Master Plan

A **Final Master Plan** will evolve from the Framework Plan. The Framework Plan will be subjected to rigorous review and evaluation of select sectoral representatives of Metro Cebu’s community: government officials, industries, local water authority, research institutions, NGOs, transport groups and other key stakeholders. The **Final Master Plan** will be a comprehensive one comprising strategic projects and programs with benefits achievable in the short, medium and long terms.

Of course there are major constraints in the implementation of projects or activities under the Master Plan, like stable and reliable **source of funds**. However, with the guidance and inspiration of Kitakyushu’s environmental legacy it is believed that success is not far away.

3. Activities for 2002

Based on the coordination conference held in Cebu City last September 2001 between Kitakyushu representatives and counterparts in Metro Cebu, a 10- day extensive seminar- workshop will be conducted in Cebu City on January 2002. Topics include Environmental Business, Environmental Monitoring, Water Laboratory Management and Mobile Air Pollution Source Monitoring.

III. CONCLUSION

Amidst the economic slowdown experienced locally and other countries as well, it is strongly believed that Project objectives are readily attainable. The challenges maybe tremendous, but **strong partnership is the key to success** as exemplified by Kitakyushu's experience in successfully changing its image from a "City of Gray" to a "City Of Green"

Today adds another chapter in the fight to protect and preserve our beloved and only earth. Let us continue the fight...let us strengthen the partnership. There is no way turning back for there is so much at stake!

And lastly, I will take this opportunity to thank the Japanese government in general and the Kitakyushu government in particular, for considering Metro Cebu in the international partnership program. For ESCAP Officials, IGES and organizers, I THANK YOU!