



**National Consultation Workshop on Kitakyushu Initiative
Demonstration Project
“Solid Waste Management as a Social Enterprise”**

WORKSHOP REPORT

**10-11 April 2008
Bago City, Philippines**

**United Nations Economic and Social Commission for Asia and the
Pacific (UNESCAP)
Institute for Global Environmental Strategies (IGES)
City Government of Bago, Philippines**



CONCEPT NOTE

Kitakyushu Initiative for a Clean Environment Demonstration Project –Bago City Philippines National Consultation Workshop

10-11 April 2008
Bago City, Philippines

- Thematic areas:** (a) Urban waste/environmental management
(b) Small enterprise development/Eco-scheme/ Waste banking
(c) Policies practices for replication.
- Objective:** To present the ongoing and planned activities related to urban waste management implemented by Bago City and formulate strategies for better implementation and further replication of those activities by other cities/local governments in Philippines.
- Target groups:** Local governments, municipalities or communities of the Philippines (mayors, planning officials, etc) involved in the area of urban environmental management.

Background

United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) has been implementing the Kitakyushu Initiative for a Clean Environment (KI), adopted at the Fourth Ministerial Conference on Environment and Development in Asia and the Pacific (MCED 2000) held in Kitakyushu, Japan in September 2000.

The Kitakyushu Initiative for a Clean Environment (KI) is a mechanism for implementation of the priority areas of the Regional Action Programme for Environmentally Sound and Sustainable Development in Asia and the Pacific with specific focus on environmental quality and human health in urban areas. The Initiative involves a three pronged approach of: a) implementing pilot activities that will identify and review different approaches to urban environmental management in selected cities in the region; b) undertaking of study tours and other capacity building events aimed at encouraging the transfer of successful practices and promoting intercity environmental cooperation in country-specific contexts; and c) establishing network for information dissemination and exchange.

Bago City Development Project

Bago City was used to be adjudged as one of the dirtiest in the region, with high incidence of poverty, malnutrition and health problem due to its failure in solid waste management. To address those problems, KABAHAHIN KA Programme, a comprehensive approach in solid waste management based on community participation was implemented and has successfully resulted to reduce the waste generation (by weight) of the City by 50%. However, there are still remaining challenges as the current composting methodology and recycling system was found to be costly, inefficient and financially unsustainable. In to order to improve the solid management system, the City proposed to implement the "Solid Waste Management as a Social Enterprise: A Community-based 3R Approaches in Bago City", by applying a market mechanism as

well as introducing a better composting methodology together with more active participation and support by the people. This project basically aims to support the development of “mini-enterprises” for waste composting and recycling that will provide business and market opportunities for the stakeholders involved and to explore other activities related to waste reduction and management. The project also seeks to strengthen environmental awareness and cooperation among the members of communities, students, local government, private entities, NGOs and other stakeholders in the City. By doing so, it is expected to demonstrate multiple environmental and socio-economic benefits by enhancing the successful outcomes of the ongoing KABAHIN KA programme.

This project is fully supported by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and the Asia Pacific Forum for Environment and Development (APFED) as one of the model cases of an actual replication of good practices facilitated by the Kitakyushu Initiative Network. The City Government of Bago, in collaboration with UNESCAP, APFED and other advanced member cities of Kitakyushu Initiative Network, intends to demonstrate the early stages in the implementation of the project, the significance of a collective action and application of appropriate approaches and technologies that could be transferred to and adopted by local governments in developing countries with minimum support from international organizations and donor agencies. The best practices that will be demonstrated by the Project have gained success and popular acceptance in the City of Surabaya in Indonesia for Takakura Method of Composting, the City of Nonthaburi, Thailand for the Waste Bank, the Miyashiro Board of Education for Environment Education, among others.

Objectives of the National Consultative Workshop

To formulate strategies for a better implementation by Bago City of the replicated urban waste management best practices considering the comments and suggestions of and possible further replication by other cities/local governments in the Philippines. Specifically it aims at:

- a. Presenting the preliminary activities and action plans of Community-based 3R Approaches Project in Bago City.
- b. Gathering comments and suggestions from original cases from which this project is replicated from and other existing good practices in community-based solid waste management in the Philippines.
- c. Identifying critical components and formulation of strategies for replication by other local governments in the Philippines.

Participation/Target groups

In addition to KI's staff from UNESCAP and from the Institute for Global Environmental Strategies (IGES), which is hosting the KI Network Secretariat, participants should include:

- Bago City officials, in charge of the KI Bago City Demonstration Project
- Other KI member cities from the Philippines (Cebu, Puerto Princesa, San Fernando, La Union)
- KI member cities from other countries, from which successful waste management measures were learned and which could provide useful advices.

Target groups include: Local governments, municipalities or communities of the Philippines (mayors or top representatives, planning officials, etc.) involved in urban environmental management.

Programme

The 2-days workshop will be organized in the following way:

The first morning will be dedicated to the presentation of the national policy direction of the National Government, the original cases of best practices from which Bago project was replicated from. In the afternoon, the presentation of the Bago City Demonstration project – rationale for the choice of the city, explanation of the project - by the City officials, followed by a field visit on the site in Bago City. The second day will be for the presentation by other Cities in the Philippines with successful good practices on solid waste management, followed by interactive discussions about how Bago City's experience could be improved and possibly replicated in other cities in the Philippines.

For more information, contact:

Ms. Sophie Bonjour
Environment and Sustainable Development Division
United Nations Economic and Social Commission for Asia and the Pacific
Phone: +66 (0)2 288 1770
Email: <escap-esdd-evs@un.org>; <bonjour@un.org>
Visit <<http://www.unescap.org/esd/environment/kitakyushu/>> for further information.

UNITED NATIONS ECONOMIC AND SOCIAL COMMISSION FOR
ASIA AND THE PACIFIC

In cooperation with the Local Government of Bago City, Negros Occidental and the
Institute for Global Environmental Strategies (IGES)

Kitakyushu Initiative for a Clean Environment:

National Consultative Workshop on Kitakyushu Initiative Demonstration Project in Bago City,
Philippines - "Solid Waste Management as a Social Enterprise"

10-11 April 2008

Buenos Aires Mountain Resort and Rafael Salas Park and Nature Center

Bago City, Philippines

PROGRAMME

Thursday 10 April 2008

Session 1: Opening Session

9:00 - 9:30	Registration
9:30 - 9:40	Welcome Remarks <ul style="list-style-type: none">- Honourable Ramon D. Torres, City Mayor, Bago City, Philippines
9:40 - 10:10	Introductory Presentation: <ul style="list-style-type: none">- <i>Mr. Masakazu Ichimura, Chief, Environment Section, Environment and Sustainable Development Division United Nations Economic and Social Commission for Asia and the Pacific (ESDD/UNESCAP)</i>- <i>Ms. Peachie Ann Aquino, Kitakyushu Initiative Network Secretariat, Institute for Global Environmental Strategies (IGES)</i>
10:10 - 10:20	Coffee break
10:20 - 10:35	Solid Waste Management: the Philippine Perspective Presentation of National Solid Waste Management Commission <i>Ms. Emelita Aguinaldo, Deputy Executive Director, National Solid Waste Management Commission (NSWMC)</i>
10:35 - 10:50	Solid Waste Management: the Indonesian Perspective <i>Ms. Theresia Widyawati, Surabaya Women's Welfare Organization, Surabaya, Indonesia</i>
10:50 - 11:10	Discussion (Q&A)
12:00 - 13:00	LUNCH
Session 2: Solid Waste Management as a Social Enterprise: A Kitakyushu Initiative Demonstration Project	
13:00 - 13:30	Presentation of Bago City demonstration project, <i>Honourable Mayor Ramon D. Torres, Bago City</i>
13:30 - 14:00	Discussion (Q&A)
14:00 - 17:00	Site Visit Barangay Sag-asa Barangay Lag-asan Bago City's Eco-Center
19:00 - 21:00	Dinner Reception

Friday 11 April 2008

Session 3: Showcase of Good Solid Waste Management Practices in the Philippines

- 9:00 - 09:05 Welcome Remarks - *Vice Mayor Nicholas M. Yulo, Vice-Mayor, Bago City*
- 09:05 - 09:20 Solid Waste Management Practices in Philippine Cities, *Mr. Andres Drexel y Bersalona Roque II, Environmental Officer, League of Philippine Cities*
- 09:20- 09:35 Solid Waste Management Practices in San Fernando City, *Honourable Mayor Pablo C. Ortega, San Fernando City*
- 09:35- 09:50 Solid Waste Management Practices in Makati City, *Ms. Kathleen Almonte, Department of Environmental Services, Makati City*
- 09:50 - 10:05 Solid Waste Management in Tacurong City, *Engr. Alfredo Ranido Jr, City Environment and Natural Resources Office, Tacurong City*

10:05- 10: 20 - Discussion (Q&A)

10:20 - 10:35 Coffee break

Session 4: Discussion of strategies for the improvement of Bago City Demonstration Project

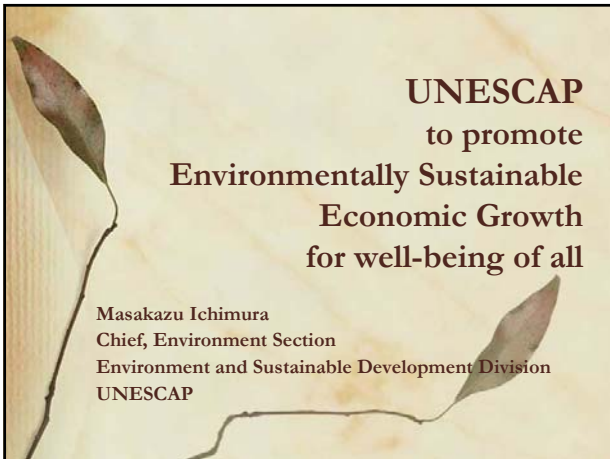
- 10:35-12:00 Presentation of comments and suggestions for improvement
Surabaya City
National Solid Waste Management Commission
League of Cities of the Philippines
San Fernando City
Puerto Princesa City
Cebu City
Makati City
Tacurong City

Chairperson: Mr. Masakazu Ichimura

12:00 - 13:00 LUNCH

Session 5: Conclusion

- 13:00 - 13:20 Summary of comments, suggestions and areas for follow-up
- 13:00 - 13:30 Concluding Comments -UNESCAP
- 13:30 - 13:40 Closing Remarks - *Honourable Bernadette Somcio, Coucilor, Bago City Government*
- 14:00 - 17:00 Tour of Bago/Bacolod
- 19:00 - 21:00 SEND OFF DINNER



UNESCAP
to promote
**Environmentally Sustainable
Economic Growth**
for well-being of all

Masakazu Ichimura
Chief, Environment Section
Environment and Sustainable Development Division
UNESCAP



**Kitakyushu Initiative
Philippines National Workshop
WELCOME!**

- **KI Network Cities from Philippines**
 - Puerto Princesa, Cebu, San Fernando
- **New Members to KI**
 - Tacurong, Makati, Cities from Negros Occidental
- **City Association**
 - Philippines League of Cities
- **National Government**
 - DENR/EMB National Solid Waste Management Commission
- **Cities from the AP Region**
 - Surabaya
- **Thanks to Host City of Bago**



ESCAP's Principal Function

- **Supply Innovative Policy Ideas**
 - Multi-disciplinary
 - Analyzed, Proved and Demonstrated
 - Advocated, Disseminated through Targeted Capacity Building (Leadership Training, Policymakers Seminar, etc.)
- **Provide Forum of Dialogue**
 - Inter-governmental, Multi-ministry
 - Multi-stakeholder



**ESDD Overarching Focus
- Green Growth**

- **Green Growth** - Environmentally Sustainable Economic Growth for the well being of all
- Unique in Addressing "Ecological Quality of Growth"
- Advocates Economic Growth based on the **"Ecological Efficiency" paradigm**
>>> Maximizing Economic Output while Minimizing Ecological Burden



Green Growth – Background

- SOE Assessment on AP Region's Development
 - Development = Growth stays as primary concern for AP to overcome persistent poverty challenge
 - Current development pattern is no longer sustainable vis-à-vis consideration of environmental carrying capacity
 - Efforts needed to achieve development paradigm shift (Environmentally Sustainable Economic Growth = Green Growth)
- Adopted as a regional strategy for achieving sustainable development by ESCAP Ministerial Conference in 2005 (MCED5)



Green Growth – a Key Approach

- Promote Scio-Economic Policy / Programme Options to support right choice of growth patter of the countries
- Two Series of Action for promoting Green Growth
 - Intervention at Policy Level
 - Green tax and budget reform;
 - Development of sustainable infrastructure;
 - Promotion of sustainable consumption and production;
 - Greening of markets and business, and
 - Development of Ecological Efficiency Indicators
 - Promotion of Local Initiatives thru **Kitakyushu Initiative**

KI Background

- ESCAP's key instrument addressing local initiative / urban environment
- Adopted by MCED 2000 held in Kitakyushu based on the regional review of SOE
- Primary funding by Japan, with in-kind supports from relevant institutions / programmes
- Network secretariat by IGES
- Practical approach commended by MCED2005 (Seoul) and endorsed for extension up to 2010

KI – Main Features

- Attempts to draw lessons from the practices and experiences of Kitakyushu and other cities and put them together into a menu of effective action for the cities in the region.
- Mandate to achieve measurable progress in improvement of the urban environment in Asia and the Pacific
- Promotes local initiatives targeting control of air and water pollution, minimization of all kinds of wastes, taking selected technical, institutional, regulatory and participatory measures
- Mutual assistance facilitated through Network of more than 60 cities

KI New Focus for Second Cycle 2005-2010

- **Environmental and Socio-Economic Co-Benefits**
 - New Focus in line with Green Growth approach adopted by MCED5
 - Highlighting win-win synergy between environmental and other challenges faced by local governments in AP region
 - Enhancing political priority + financial feasibility of urban environment actions

Highlight on Co-benefits (1)

- **AP Developing Country Cities are faced by lack of ...**
 - Local Capacity (technical / institutional)
 - Legal / regulatory instruments (particularly at national level)
 - Financial resources
 - Awareness and support
- **Background problems**
 - Competing policy priority amongst mounting multiple challenges (poverty, slums, housing, infrastructure, health, social welfare, economic livelihood) > More competition than synergy
 - Perception – Environmental protection measures are financial burden (Prevailing both in city managers, donors and investors)
 - Environmental Protection bureaus relatively weak

Highlight on Co-benefits (2)

- **Environmental Protection Measures mostly have the socio-economic co-benefits**
- **Such co-benefit, if explicitly demonstrated, will contribute to**
 - Enhancing the priority in local policy making
 - Creating more synergy amongst different department
 - Attract more financial opportunities (grants) from broad range of sources
 - Strengthen public support with enhanced awareness
- **Demonstration of economic return will help**
 - Revolving investment for project expansion / replication
 - Attract more financial opportunities (loans and investments)
 - Engage expertise commercially available

Exemplar Cases of Co-benefits (1)

- **Municipal Solid Waste Management can simultaneously address:**
 - Environmental benefits:
 - Improvement in MSW Management
 - > Health and Hygienic implications
 - Prevention of Water/ Groundwater Pollution
 - Reduction of GHG gas emission
 - Socio-economic co-benefits:
 - Engagement of Informal Sector
 - Generating incomes for the poor and marginalized
 - New business opportunities
 - Partnership amongst NGO, Private Sector and City Hall
 - Urban Governance / Transparency
 - Social equity, Gender and Youth Perspectives
 - Education
 - New Finance through CDM project

Exemplar Cases of Co-benefits (2)

- **Promoting Public Transportation / Demand Side Management for Urban Transport:**
 - Environmental benefits:
 - Improvement in local air quality
 - Reduction of GHG gas emission
 - Socio-economic co-benefits:
 - Direct return from energy saving
 - Avoiding the cost of traffic jam
 - Stimulate economic livelihood / competitiveness
 - Equitable mobility and safety
 - New business opportunities
 - New Finance through Urban Transport CDM project

Bago Pilot Project

- Proposed on basis of learning from other network cities
 - Kitakyushu, Surabaya, Nonthaburi, Atsugi....
- KI/ESCAP support for piloting different Policy Measures for promoting **Environmental and Socio-economic Co-benefits** approach
- Particular focus on Solid Waste Management
 - Application of Economic Mechanisms / Incentives
 - Waste Bank
 - Micro-enterprises
 - Eco-money scheme
 - etc.....
- To be continued with support from APFED Showcase Programme
- Technical cooperation with IGES / City of Kitakyushu/ KITA /J-PEC

This National Workshop

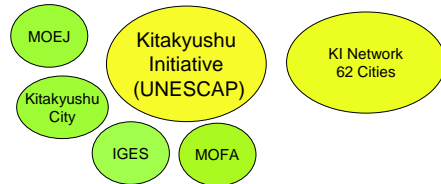
- To share ideas of Bago Pilot Project / policy measures tested.
- To exchange relevant experiences / inputs from other cities for possible improvement of Project implementation
- To enhance opportunities for replications of the policy measures in other cities
- To identify requirements of national policy supports
- To catalyzes further networking / inter-city collaboration in Philippines

National Consultative Workshop on Kitakyushu Initiative
 Demonstration Project in Bago City, Philippines

Kitakyushu Initiative Network Secretariat: Facilitation of Inter-city Cooperation and Replication of Good Practices

Peachie Ann Aquino
 Institute for Global Environmental Strategies (IGES)

What is Kitakyushu Initiative?



- It aims to strengthen local initiatives and promote inter-city cooperation, to achieve tangible improvements in the urban environment.

Role of IGES in Kitakyushu Initiative

- Institute for Global Environmental Strategies (IGES) - research institute in Japan
- IGES-Kitakyushu provides the professional and financial support and functions as Secretariat for the Kitakyushu Initiative Network under the supervision of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and the Government of Japan



Why Kitakyushu Initiative?

- Located in Kyushu island- the southernmost island of Japan
- Area: 485.25 km²
- Population: 1M
- Industrial city



Why Kitakyushu Initiative?

1960's



- Countermeasures:
- Local regulations
 - Institutional capacity
 - Fuel quality improvement and substitution

- Technical guidance and technology enhancement
- Subsidy measures
- Enforcement
- Public awareness

1990's



Kitakyushu Initiative for a Clean Environment



Awarded as the "World Capital for Sustainable Development" (2006 and 2007)



- "The Kitakyushu Initiative attempts to draw lessons from the practices and experiences of Kitakyushu City and other cities and put them together into a menu of effective action that could be great use for other cities in the region"

IGES: Secretariat of the KI Network

- Administrative/ Clerical
- Professional/ Expertise
 - Collection and Analysis of Successful Policies & Practices
 - 45 Cases of Successful and Transferable Practices on Air Quality Management (AQM), Solid Waste Management (SWM), Wastewater and Sanitation and other urban environmental issues
 - Replication of good practices
 - 12 Demonstration Projects
 - -Study Tour
 - Development of collaborative mechanisms through:
 - Network meetings
 - Thematic seminars and workshops

KI Database:



45 Case Studies

KI Demonstration Project and Study Tour:



Promoting waste segregation and recycling practices in Nonthaburi, Thailand

Courtesy: Nonthaburi Municipality

KI Study Tour:

Surabaya, Indonesia (February 2007)
Environmental, social and economic benefits of household composting: Supporting the development of "mini-enterprises"



Feature: Surabaya Case is featured by household level composting using a simple equipment so called Takaruka Method

Participants: Sylhet (Bangladesh), Siem Reap (Cambodia), Weihai (China), Denpasar (Indonesia), Semarang (Indonesia), Surabaya (Indonesia), Kitakyushu (Japan), Bago (Philippines), Bangkok (Thailand) and others

Kitakyushu Initiative Network Meeting:

- A forum to strengthen inter-city cooperation.
- The Network meetings organized to review and formulate activities of the Network.
- 4 Network meetings since 2001

City	Country	Commitment
Bago	Philippines	To reduce waste generation by 40% To raise level of stakeholder awareness and support
Cebu		To reduce waste generation by 50%
		To comply with national standard for water quality
		To achieve ambient air quality below the National Ambient Air Quality Guidelines values
Puerto Princesa		To achieve 40% waste diversion ratio
San Fernando		To increase waste diversion ratio to 30%
Bangkok	Thailand	To reduce waste generation by 30%
Nonthaburi		To reduce waste generation by 30%
		To promote household waste segregation
Siem	Cambodia	To reduce waste generation by 30-35%
Surabaya	Indonesia	To reduce waste generation by 40%
Kohima	Nagaland	To include PPP for waste collection and transportation of solid waste
Weihai	China	To reduce SO2 emission by 5%
Shaan	China	To reduce mobile operation per capita by 5%
Kitakyushu	Japan	To reduce household waste generation by 20%

Environmental commitments of 12 Cities by 2010

QuickTime™ and a TIFF (LZW) decompressor are needed to see this picture.

KI Network Cities in Philippines



- Cebu City
 - Community-based Sewage Plant Facility (Jokaso)
 - Improve the water quality of Guadalupe River by treating household wastewater.



- Puerto Princesa City
 - Assessment of Vehicular Reduction Strategy for Air Pollution Prevention and Climate Change Mitigation 2003
 - Baseline study for the Clean Air Program

KI Network Cities in Philippines



- **San Fernando**
 - Ocular visit to Barangay Lingsat, sanitary landfill and communities for the Eco-San project

- **Bago**

- KI Demonstration Project: Solid Waste Management as a Social-enterprise
- Based from successful practices from Nonhaburi, Thailand and Surabaya, Indonesia
- Professional support from IGES
- Recipient of the APFED-showcase programme

Thank you!

Email: kitakyushu_initiative@iges.or.jp
Website: www.iges.or.jp/kitakyushu

ECOLOGICAL SOLID WASTE MANAGEMENT

Presented by:
Emelita C. Aguinaldo
 Deputy Executive Director
 National Solid Waste Management
 Commission-Secretariat




Ecological Solid Waste Management Act of 2000

- Mandatory segregation at source (Section 21 RA 9003)
- Mandatory segregated collection; (Section 1 Rule X, IRR)
- Mandatory waste diversion goal of at least 25%; (section 20 RA9003)
- Establishment of Materials Recovery Facilities; (section 32 RA 9003)



Segregation at Source

- most indispensable element of any effective ESWM Program
- Municipal Solid Wastes (MSW) must be segregated at source and placed in at least 3 separate containers, (a) Compostables, (b) Recyclables, and (c) Residuals




SEGREGATED COLLECTION

- supports the most indispensable element of any effective ESWM Program...
- Backbone of an effective ESWM Program
- No segregation, No Collection Policy;
- Use indigenous collection vehicle



Materials Recovery Facilities

- Established in every barangay;
- receives biodegradable wastes for composting and non-biodegradable wastes for recycling.



Region	MRF
1	105
2	37
3	47
4a	150
4b	20
5	77
6	154
7	66
8	158
9	46
10	93
11	426
12	25
13	49
CAR	54
NCR	416
TOTAL	1923



Multi-Purpose Environment Cooperatives or Associations

To encourage recycling, the establishment of coops shall be encouraged and promoted by LGUs

Mandatory Solid Waste Diversion

- ✓ All LGUs shall divert at least 25% of all solid wastes from waste disposal facilities through reuse, recycling, composting, and other resource recovery activities within 5 years after the effectivity of the Act
- ✓ The waste diversion goals shall be increased every 3 years thereafter

MALANDAY ELEMENTARY SCHOOL, MARIKINA CITY Eco Savers Program



Happy pupils recycling



Eco Bus

Nationwide Search for Model Barangay for Eco-waste Management System

2003-2004 winners

2006-2007

Programs

2. RECYCLABLES COLLECTION EVENTS



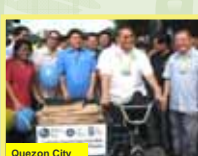
Davao City



Cebu City



La Trinidad, Benguet



Quezon City

DAVAO CITY

LA TRINIDAD

CEBU CITY

QUEZON CITY

3. Waste Markets



Waste Markets



Waste Markets



Waste Markets



Consolidated Collection Results

Type of Recyclable materials	Total Volume Collected	Total Monetary Value	Environmental Benefits	
Paper (kilos)	17,990.10	51,538.70	No. of trees saved (7 year old)	306
Car/lead acid battery (pieces)	152	17,789.25	Lead Recovered (kls.)	2,166
			Sulfuric Acid Treated (li)	324.90
Electronics/ Electrical (pieces)	2,392.09	31,211.75	Precious Metal Recovered (gms.)	358.88
			Base Metals Recovered (kls.)	2,871
			Toxic Substances Treated (kls.)	478.50

Consolidated Collection Results

Type of Recyclable materials	Total Volume Collected	Total Monetary Value	Environmental Benefits	
Aluminum cans (kilos)	316.40	9,273.04	Aluminum Recycled (kls.)	316.40
PET plastics (kilos)	1,625.40	22,598.42	PET Plastics Recycled (kls.)	1,609.15

TECHNOLOGIES PROCESSING BIODEGRADABLE WASTE

FABRICATED BIOREACTOR FOR RAPID COMPOSTING


General Specifications

- Horizontal rotating drum reactor
- Aerated System
- Approximately 1 ton/day capacity
- Electrically-driven
- No external heat source
- Semi-continuous operation
- Forced-air circulation
- Manual or automatic process control
- Modular Type
- Small scale applications







Three types of portable Biogas Digesters

- TYPE: **PORTA BIO-DIGESTER III**
- MATERIALS: Metal Digester with floating gas holder
- CAPACITY: 0.55 m³ (550 liters)
- START-UP OPERATION/LOADING RATE:
 - 185 L inoculum/ 2kg kitchen waste
 - 16kg animal manure/ 4kg animal manure
 - 32 L water/12 L water
- DAILY BIOGAS PRODUCTION: 500-550 (liter)
- ESTIMATED COST: **PHP 25,000.00**



Value equivalent of Biogas with other energy sources

- 1 kilogram **LPG** = 0.45 cubic meter biogas
- 1 liter **gasoline** = 0.54 cubic meter biogas
- 1 liter **diesel fuel** = 0.52 cubic meter biogas
- 1 kilowatt hr. **electricity** = 1.0 cubic meter biogas

TECHNOLOGIES THAT PROCESS RECYCLABLE WASTE

Recycling Practices: Tetra Pak Containers



Schools

- Tetra Pak & TNPC partnered with schools to collect Tetra Pak containers.



Trans-National Paper Corp.

- TNPC processes these Tetra Pak containers and turns them into Composite Boards.
- These boards are water & fire resistant and fire retardant.



Composite Boards

- Composite Boards are used for the following:
 - pallets
 - cement formers
 - furniture backings
 - flash doors
 - roofs

TECHNOLOGIES THAT PROCESS RECYCLABLE WASTE

Recycling Practices: Tires

TIRES



LOCATION OF RECYCLING COMPANIES

PHILIPPINES

LUZON

VISAYAS

MINDANAO

- Accorn Reclaim Rubber Corp. (Sta. Maria, Bulacan)
- Hi-Mileage Retreaders, Inc. (Manila)
- Linis Ganda (Quezon City)
- Metro Manila Retreaders, Inc. (Pasig)
- Metro Recapping, Inc. (Marikina)
- Vacphil Rubber Corp. (Las Piñas)

TECHNOLOGIES THAT PROCESS RECYCLABLE WASTE

PACKAGING LAMINATES

Process Flow

1. Grinding/Crushing




TECHNOLOGIES THAT PROCESS RECYCLABLE WASTE

2. Batching
3. Molding/Forming

PACKAGING LAMINATES

TECHNOLOGIES THAT PROCESS RECYCLABLE WASTE

REPAIR/
REFURBISHING

- Another method which is neither reuse nor recycling.
- Fewer materials and lesser energy are required to manufacture either new or recycled products.

MANDATORY REQUIREMENTS

(Section 37 of RA 9003 Closure/rehabilitation/conversion of open dumpsites into controlled disposal facilities)

Implementation Issues and Challenges

- Relatively low compliance of LGUs factors:
 - low priority
 - insufficient funds
 - information gap

Implementation Issues and Challenges

- Insufficient domestic supply (quality/quantity) of the recycling resources factors:
 - difficulty in collecting high quality materials due to mixed waste
 - outflow of domestic recyclable materials to other countries
 - information gap

Implementation Issues and Challenges

- Difficulty in the development of the Recycling Industry factors:
 - Lack of efficient collection/transportation system
 - High domestic transportation cost
 - High cost of electricity in comparison with surrounding countries.

**COMMUNITY-BASED SOLID WASTE MANAGEMENT :
TAKAKURA HOUSEHOLD
COMPOSTING PRACTICE**



Presented by
Widyawati
Surabaya Women's Welfare Organization
Surabaya, Indonesia

Philippines National Consultation Workshop on Kitakyushu Initiative
Demonstration Project
10-11 April 2008, Bago City, Philippines

Contents of Presentation

- ✿ Background of Surabaya City, Indonesia
- ✿ Background information on Solid Waste Management practices in Surabaya
- ✿ Partnerships
- ✿ Implementation
- ✿ Environmental & Socio-economic Benefits
- ✿ Follow-up actions



One hour flight from Jakarta, two hours from Singapore, 4 hours from Hongkong.
Surabaya is gateway to East Java and East Indonesia
Center of service, trade, and industry

Figures of Surabaya Before Solid Waste Management Program

Population:

- Daytime 4 million
- Night time 3 million

Solid Waste Generation in 2004 :

- Final Disposal Site ± 1819 ton / day
- Burned by mini incinerators ± 120 ton / day
- Independent waste management ± 29,4 ton / day
- Disposed everywhere ± 108,6 ton / day



In implementation strategies for reducing the waste

The strategy was simple, providing them the technology and how to use it

The important actors are:

1. the Kitakyushu City (research assistance)
2. The Woman Well fare
3. The local NGO's
4. The environmental cadres
5. The media (Jawa Pos) and Unilever Care foundation



International Partnerships

Surabaya - Kitakyushu

- Study of solid waste characteristics (2002)
- Research of composting methods; result: Takakura Home Method (2003)
- Implementation of Takakura Home Method for households and community (2004)
- Research on solid waste from public market (2005)
- Development of waste bank for solid waste from public market (2006)

10 Woman Welfare main Program

1. Perception and Application of Pancasila
2. Cooperating
3. Foodstuff
4. Clothing
5. Housing and Arrangement quality household
6. Education and Skill
7. Health
8. Developing of cooperation
9. Environment Conservation
10. Planning healthy



Implementation

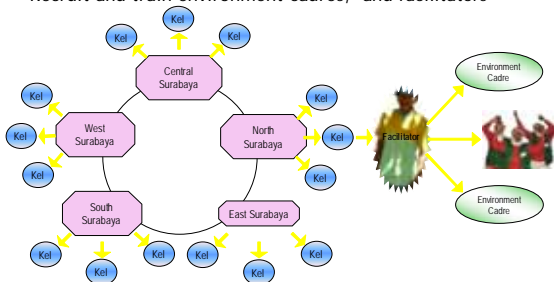


- Woman well fare with the socialization
- Takakura home method become the main issue that spread among the people to help reduce the household waste

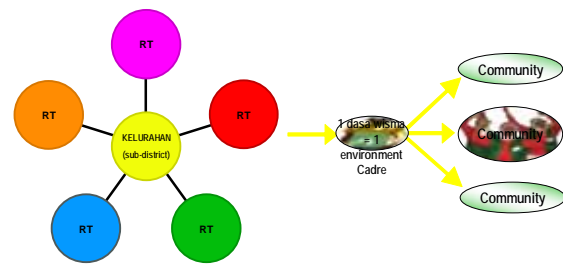


Zero waste strategy

- Reduce waste at source
- Recruit and train environment cadres, and facilitators



Cadre system



Ministry of Environment inaugurated additional 10,000 cadres on December 2007

IMPLEMENTATION

REDUCE WASTE AT SOURCE



- Socialization 3 R Program (*Reduce, Reuse, and Recycle*)
- Sanitation Regulation
- Cleanliness Competition

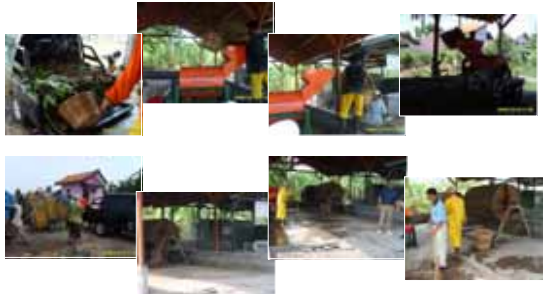


Decreased of Waste After SWM

	2004	December 2007
Final Disposal Site	± 1819 Ton/day	± 1480 Ton/day
Burned by mini incinerator	± 120 Ton/day	± 120 Ton/day
Solid Waste Management	± 29,4 Ton/day	± 532 Ton/day
Disposed everywhere	± 108,6 Ton/day	± 45 Ton/day



Composting Center Tenggilis



Takakura Method



Individual Composter



Social & Economic Benefits



"Home of Historical and Natural Treasures"

Location

Demography

- ❑ Population (2000): 141,721
- ❑ 2008 Projection is 159,397
- ❑ 6.63% of the Province's population

Region	Growth Rate
Negros Occ.	1.68
Bago City	1.48
Philippines	2.36

Demography

Year	Rural Barangays	Urban Barangays
1995	0.59	2.12
2000	0.59	2.12

- ❑ Rapid growth of urban centers
 - employment
 - basic services
 - transportation

Land Area

- ❑ 389 sq. Kms. land area
- ❑ 5% of Negros Occidental's land area
- ❑ 10% of component cities combined area

Income

- ❑ City Income for year 2008
 - ❑ 2008 Estimated Income - P 357,884,402.74
 - ❑ IRA - 272,365,735.00
 - ❑ 20% Development Fund - 54,473,147.00

Economy

- food growth center
- growth center for diversification
- ecology and tourism development zone




Economy

- food growth center
- growth center for diversification
- ecology and tourism development zone




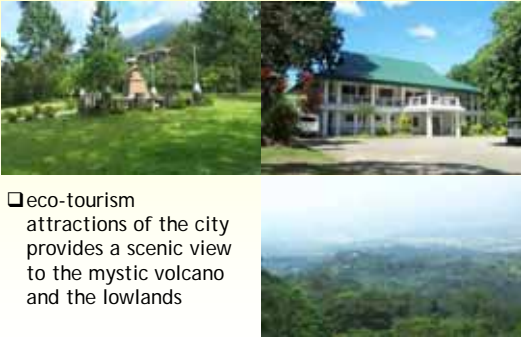

Economy

- food growth center
- growth center for diversification
- ecology and tourism development zone




Economy

- eco-tourism attractions of the city provides a scenic view to the mystic volcano and the lowlands

Economy

- production and trading center
- convergence points for goods and services
- economic growth center
- nucleus of processing




Economy

- production and trading center
- convergence points for goods and services
- economic growth center
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Economy







- production and trading center
- convergence points for goods and services
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Economy




- production and trading center
- convergence points for goods and services
- economic growth center
- nucleus of processing

Economy

- light to Heavy industrial and agri-industrial plants continue to sprout in the City

Waste Generation

- Theoretically, in a ratio of .3 kg/person, the City is generating 47.819 tons of garbage daily
- Actual survey of collected garbage in ten barangays covered by collection system revealed that the City is dealing with 20.656 tons of garbage daily



Waste Generation


□ Waste Analysis Characterization Survey

Type of Wastes Survey Results (Total per Day)	Weight (Kg)	Weight Percent (%)
Plastic Bottles	56	0.3%
Glass Bottles	432	2.1%
Metal Cans	89.0	2.7%
Paper Products	759.6	0.5%
Plastics	2,650	12.8%
Biodegradables	10,816	52.4%
Residual Waste	5,308	25.66%
Total per day	20,656	100.00%

SWM Interventions

□ Inventory of Equipment


- 8 hectare Final Disposal Site
- City Eco Center
- Barangay Material Recovery Facilities
- Four (4) mechanical bio-shredders
- One (1) Plastic Shredder
- Six (6) garbage collection vehicles playing the SWM jingle
- One (1) Rotary Composter
- One (1) Plastic Recycling Oven
- African night crawlers



SWM Interventions

□ Inventory of Equipment


- 8 hectare Final Disposal Site
- City Eco Center
- Barangay Material Recovery Facilities
- Four (4) mechanical bio-shredders
- One (1) Plastic Shredder
- Six (6) garbage collection vehicles playing the SWM jingle
- One (1) Rotary Composter
- One (1) Plastic Recycling Oven
- African night crawlers



SWM Interventions

□ Inventory of Equipment


- 8 hectare Final Disposal Site
- City Eco Center
- Barangay Material Recovery Facilities
- Four (4) mechanical bio-shredders
- One (1) Plastic Shredder
- Six (6) garbage collection vehicles playing the SWM jingle
- One (1) Rotary Composter
- One (1) Plastic Recycling Oven
- African night crawlers



SWM Interventions

□ Inventory of Equipment


- 8 hectare Final Disposal Site
- City Eco Center
- Barangay Material Recovery Facilities
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SWM Interventions

□ Inventory of Equipment


- 8 hectare Final Disposal Site
- City Eco Center
- Barangay Material Recovery Facilities
- Four (4) mechanical bio-shredders
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- One (1) Rotary Composter
- One (1) Plastic Recycling Oven
- African night crawlers



SWM Interventions

□ Inventory of Equipment


- 8 hectare Final Disposal Site
- City Eco Center
- Barangay Material Recovery Facilities
- Four (4) mechanical bio-shredders
- One (1) Plastic Shredder
- Six (6) garbage collection vehicles playing the SWM jingle
- One (1) Rotary Composter
- One (1) Plastic Recycling Oven
- African night crawlers



SWM Interventions

□ Inventory of Equipment


- 8 hectare Final Disposal Site
- City Eco Center
- Barangay Material Recovery Facilities
- Four (4) mechanical bio-shredders
- One (1) Plastic Shredder
- Six (6) garbage collection vehicles playing the SWM jingle
- One (1) Rotary Composter
- One (1) Plastic Recycling Oven
- African night crawlers



SWM Interventions

□ Inventory of Equipment


- 8 hectare Final Disposal Site
- City Eco Center
- Barangay Material Recovery Facilities
- Four (4) mechanical bio-shredders
- One (1) Plastic Shredder
- Six (6) garbage collection vehicles playing the SWM jingle
- One (1) Rotary Composter
- One (1) Plastic Recycling Oven
- African night crawlers



SWM Interventions

□ Inventory of Equipment

- 8 hectare Final Disposal Site
- City Eco Center
- Barangay Material Recovery Facilities
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- Six (6) garbage collection vehicles playing the SWM jingle
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- One (1) Plastic Recycling Oven
- African night crawlers



SWM Initiatives

□ Implementation of the KABAHIN KA Program


- Conduct of IEC
- Support to program stakeholders
- Passage of ISWM Ordinance (C. O. 18, series of 2005)
- Organization of Environment Enforcers
- Establishment of Engineering structures
- Conduct of Incentive and Award System Activities
- Data banking of activities




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 - Conduct of IEC
 - Support to program stakeholders
 - Passage of ISWM Ordinance (C. O. 18, series of 2005)
 - Organization of Environment Enforcers
 - Establishment of Engineering structures
 - Conduct of Incentive and Award System Activities
 - Data banking of activities




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 - Organization of Environment Enforcers
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SWM Initiatives

- Linkages and Networking
 - Organization of Environment Partners
 - Encourage participation and support of NGAs and civil society
 - Active involvement to LGU leagues, boards and like organizations
 - Membership with international organizations



KIN Membership

- Participation on KIN Activities
 - Study Tours



A showcase of community support and initiatives on local solid waste management program in Nonthaburi, Thailand

KIN Membership

- Participation on KIN Activities
 - Study Tours



A showcase of mini enterprises in the Takakura Method of Household Composting in Surabaya, Indonesia

KIN Membership

□ Participation on KIN Activities

□ Conferences



Presentation of the the KABAHHN KA Program and the importance of a nationally legislated policy in program implementation at UN University, Tokyo Japan

KIN Membership

□ Participation on KIN Activities

□ Conferences



Presentation of the the KABAHHN KA Program and the proposed KI Demo Project in the KIN 4th Ministerial Meeting in Kitakyushu, Japan

KIN Membership

□ Submission of Proposal for KI Demo Project

Proposals were submitted to:

- United Nations Economic and Social Commission for Asia and the Pacific
- Asia Pacific Forum for Environment and Development

Resulting to the following FUND counterparting:

□ UNESCAP	10,000.00 USD
□ APFED	30,000.00 USD
□ City of Bago	20,000.00 USD
TOTAL PROJECT FUNDING	60,000.00 USD

KI Demo Project

□ Project Title

Solid Waste Management as a Social Enterprise

PROPOSED KI PROJECT	ROLE OF KI PROJECTS
1. Social Enterprises for Composts Processors	Ensuring the viability of mini-enterprises for composts processors adopting the Takakura Method of Household Composting.

KI Demo Project

□ Project Title

Solid Waste Management as a Social Enterprise

PROPOSED KI PROJECT	ROLE OF KI PROJECTS
2. Social Capital Enhancement	Forging of a strong government-community partnerships in the implementation of Social Enterprises for Composts Processors.

KI Demo Project

□ Project Title

Solid Waste Management as a Social Enterprise

PROPOSED KI PROJECT	ROLE OF KI PROJECTS
3. Environmental Education Program in Public Schools	Strengthen and institutionalize environmental education in Lag-asan Elementary School and Ramon Torres National High School using the awareness campaign implemented by Nonthaburi and Surabaya, and implement the KIDS ISO 14000 Environmental Education Program of Miyashiro Board of Education.

KI Demo Project

□Project Title
Solid Waste Management as a Social Enterprise

PROPOSED KI PROJECT	ROLE OF KI PROJECT
4. Eco Banking Project	Ensure the effective implementation of the Eco-money schemes to develop mini enterprises in recycling considering the experiences of Nonthaburi Waste Bank and Atsugi Nakachou Shopping District.

KI Demo Project

□Project Title
Solid Waste Management as a Social Enterprise

PROPOSED KI PROJECTS	ROLE OF KI PROJECTS
5. 3R Toolkit	Provide a detail instruction manual on 3R approaches with focus on the Philippines, integrating best practices of KIN.
6. Wastes Managers' Forum	Strengthen linkage with member-cities, sponsoring and cooperating agencies of the KIN, for the possible replication of the good wastes management practices.

KI Demo Project

□Project Title
Solid Waste Management as a Social Enterprise

PROJECT PARTNERS	ROLE OF PARTNERS
1. International Partners such as KIN, IGES, UNESCAP, APFED	Provide funds, dispatch experts conduct monitoring and evaluation through site visits
2. CITY GOVERNMENT OF BAGO thru CSWMB	<ul style="list-style-type: none"> Facilitate and coordinate fund release, conduct of trainings and seminars, require submission of reports by NGO, and evaluation report by barangay council Supervise and document the implementation of the project Provide technical support to the project implementation

KI Demo Project

□Project Title
Solid Waste Management as a Social Enterprise

PROJECT PARTNERS	ROLE OF PARTNERS
3. Barangay Council of Brgy. Lag-asan	<ul style="list-style-type: none"> Implements and document the project implementation in coordination with the Barangay and City Submit periodic financial and management reports Facilitates and assists activities of the participating community and households Monitor and evaluate the implementation of the community and the school of the project Submit recommendation to the City Mayor on actions to be undertaken relative to the project implementation

KI Demo Project

□Project Title
Solid Waste Management as a Social Enterprise

PROJECT PARTNERS	ROLE OF PARTNERS
4. Pilot Community	Actively participate and encourage participation by households thru IEC in coordination with the barangay
5. Lag-asan Elementary School SSG	<ul style="list-style-type: none"> Implements and document the project implementation in coordination with the Baarangay and City Submit periodic financial and management reports Actively participate and encourage participation by students thru IEC

KI Demo Project

□Project Title
Solid Waste Management as a Social Enterprise

PROJECT PARTNERS	ROLE OF PARTNERS
6. Green Society	Volunteers in the community mobilization, clean up, monitoring and IEC of the project



What have we done...

Activity 1: Development of mini-enterprises utilising Takakura Method of composting

Presented the project in Brgy. Council meeting

Community /Organization meeting with brgy officials

Capability building and deployment of BCC Green Society Members

Community Meetings/Orientation with Households

Repair/Improvement of Barangay MRF and community mobilization

Initial distribution of Takakura Baskets

Initial monitoring and evaluation



What have we done...

Activity 1: Development of mini-enterprises utilising Takakura Method of composting

Present project in Brgy. Council meeting

Community /Organization meeting with brgy officials

Capability building and deployment of BCC Green Society Members

Community Meetings/Orientation with Households

Repair/Improvement of Barangay MRF and community mobilization

Preparation and processing of PRs

Initial distribution of Takakura Baskets

Initial monitoring and evaluation



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Community Meetings/Orientation with Households

Repair/Improvement of Barangay MRF and community mobilization

Preparation and processing of PRs

Initial distribution of Takakura Baskets

Initial monitoring and evaluation



What we need to do...

Activity 1: Development of mini-enterprises utilising Takakura Method of composting

Invite experts/resource person for training on Takakura Method

Coming up of schedules for and manner of collection of both recyclable savings for Eco-Waste Bank and the Takakura Output from households

Continuous distribution of Takakura Baskets

Monitoring and evaluation

Start of replication activities with other barangays


What have we done...

Activity 2: Introduction of eco-money schemes to develop mini-enterprises for recycling

Meeting with Student Government, school administration, PTCA of Lagasan E/S

Meeting with and orientation of barangay officials on Waste banking scheme

Preparation of Passbook and Record System



What have we done...

Activity 2: Introduction of eco-money schemes to develop mini-enterprises for recycling

Meeting with Student Government, school administration, PTCA of Lagasan E/S

Meeting with and orientation of barangay officials on Waste banking scheme

Preparation of Passbook and Record System

MY PASSBOOK

Junjun Lila

Name
4-1

Grade & Section
Lagasan Elementary School

School
Ms. Maganda dela Cruz

Adviser

What we need to do...

Activity 2:
Introduction of eco-money schemes to develop mini-enterprises for recycling

Seminar on Waste Banking Scheme in schools and the barangay

Release of seed Money to Project partners

Strengthen and coordinate activities of accredited junkers

What have we done...


Activity 3: Environmental education in the community and schools

Preparation of the presentation materials for briefing with PTCA and DepEd

Meeting with DepEd and PTCA Officials

Gathering of materials to be used in the formulation of the Teaching Manual

Formulation of the teaching Manual and Student's Workbook



What we need to do...

Activity 3:
Environmental education in the community and schools

Site visit to other places implementing similar project for additional inputs and possible replication

Collation of Workshop result and preparation of teaching manuals for editing and final print out

Drafting of other promotional materials such as posters/streamers/leaflets

Presentation of final draft of teaching manual and promotional materials for approval by DepEd and City Officials

Publication of Manuals and other IEC materials

Distribution of Manuals

What have we done...

Activity 4:
Development of guidebook on community-based 3R approaches with a focus on the Philippines

Preparation and processing of PR for the purchase of Documentation Equipment

Process Documentation of Activities

What we need to do...

Activity 4:
Development of guidebook on community-based 3R approaches with a focus on the Philippines

Preparation of Manuals

Presentation of Draft Manual to project implementers, City Officials, KIN, UNESCAP for critiquing

Finalization of the guidebook for printing

Publication of the Guidebook

What have we done...

Activity 5:
Follow-up activity: Organisation of a national/international workshop in Bago

Identification of participants in coordination with KIN and ESCAP to April national workshop

Coordination with KIN and ESCAP on the topics and schedule of the workshop

Identification of venue and date of workshop and booking with the hotel

Sending of invitations to participants

Preparation of Workshop Materials

Welcome and accommodation of participants



What we need to do...

Activity 5:

Follow-up activity: Organisation of a national/international workshop in Bago

Identification of participants in coordination with KIN, ESCAP and APFED to proposed 2009 international workshop

Coordination with KIN and ESCAP on the topics and schedule of the workshop

Identification of venue and date of workshop and booking with the hotel

Sending of invitations to participants

Preparation of Workshop Materials

Welcome and accommodation of participants



*Madamo
Gid nga
Salamat...*



- ### Content of Presentation
- Background on the League of Cities of the Philippines
 - Role of LCP in City-to-City-Cooperation
 - Initiatives and Achievements of Philippine Cities on SWM
 - Support Mechanisms offered by LCP in Implementing SWM Initiatives

The League of Cities as enshrined and institutionalized under the Philippine Local Government Code of 1991

Article Three. - League of Cities

SEC. 306. Purpose of Organization. - There shall be an organization of all cities, to be known as the League of Cities, for the general purpose of maintaining, sustaining and strengthening closer affluence, city government administration, and economic, through proper and legitimate, relationships.

The League shall have chambers at the provincial level for its component cities of a province. *Specific authorized cities may also have a chapter of the League. The Provincial League shall be composed of the provinces of the League of highly industrialized cities and the provinces of the provincial chapters of the League of component cities.*

SEC. 306. Organization. - Every city shall be represented in the League by the City Mayor or to its absence, by the city vice mayor or a designate member, duly elected for the position by the assembly, who shall attend all meetings and participate in the deliberations of the League.

SEC. 306. Powers, Functions and Duties of the League of Cities. - The League of Cities shall:

(a) Assist the National Government in the formulation and implementation of the policies, programs and projects affecting cities as a whole;

LOCAL GOVERNMENT CODE OF 1991

(b) Promote local autonomy at the city level;

(c) Advise members for the protection of the welfare of all cities and its different components;

(d) Encourage greater participation in local government administration towards to ensure united and coordinated action for the attainment of economic development goals;

(e) Represent the cities of the National Government in existing agencies within the national government; and

(f) Give priority to programs designed for the social development of cities in accordance with the policies, programs and projects of the National Government.

(g) Serve as a forum for coordinating and organizing cities, making the necessary requests of the National Government and providing the general service agencies for cooperation in the protection of the welfare of the cities; and

(h) Exercise such other powers and functions such other States and Nations as the League may prescribe for the welfare of the cities.

Vision

An empowered, strong, united brotherhood of purpose-driven cities committed to serve its people with a deep sense of pride and value laden commitment for progress and development.

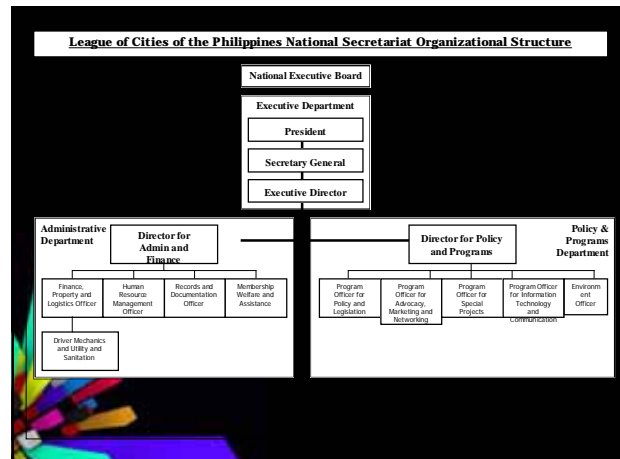
Mission

To enable cities to stand as one, defend its rights, provide the best possible services, and pursue the common good for its constituents through its advocacies, capabilities and networking.

- ### Goals
- Foster unity and cooperation
 - Promote membership interest and welfare
 - Provide a cohesive force for advocacy and better service delivery
 - Serve as a forum for discussion and feedback
 - Collaborate with national and other local government agencies for effective and efficient inter-governmental relations
 - Develop and implement programs to enhance city government capabilities

Structure

- The General Assembly
 - 120 cities, represented by their LCEs
- The National Executive Board
 - Elected by the members
- The National Secretariat



Current Programs & Projects

- City Development Strategy (CDS)
- LCP Partnership with PADCO for the Philippine Sanitation Alliance
- Transparent Accountable Governance (TAG) Project
 - LCP – ISA Partnership
- Tie up with AIM for the City Competitiveness Ranking project
 - Traffic Management project with JICA and Cities Alliance
 - Conduct of the LCP Caravan
- Possible partnership with Gawad Kalinga to address shelter needs of all cities
- Partnership with Philippine Clear Air and LOGOFIND for the conduct of capacity-building on the Air Quality Training Program

Role of LCP to City-to-City-Cooperation

- Respond to the demands for coordinated efforts on environmental policies, programs and projects

Bridging Information Gaps and Facilitating Sharing of Information



- Official newsletter of LCP "The Advocate"; copies distributed to all cities, Congress, NGAs, partner organizations both local and international
- Updating the contents of the LCP website www.lcp.org.ph
- Regular dissemination of reference materials to member-cities
- Possible production of an LCP television show in the pipeline

LCP Action on Solid Waste Management

- Actively participated in relaxing the penal and administrative provision of RA 9003
- NG-LGU sharing on SWM
- LCP-LMP policy dialogue with NSWMC
- Survey on the Status of Cities Implementation of RA 9003
- LGU sharing forum on SWM
- Local Environmental Planning and Mng't
- Consolidating local gov'ts association in training of trainers in SWM
- Support systems on lobbying for the passage of NSWMC Res. relative to SWM implementation by LGUs
- Assist to create City ENRO Association
- Mentoring
- Incentives
- Financing sustainable environmental projects
- Guidelines for non-environmentally acceptable packaging

Result of Survey

SWMB	SWMP		MRF	COMPOSTING FACILITY	SLF	SEGREGATION (SOURCE)	SEGREGATION (COLLECTION)
	Submitted to NSWMC	Approved					
100%	35%	11%	87%	81%	26%	91%	76%

Surveyed (120 Cities); respondents (54 Cities)
=(45%)

Initiative/Achievement of Phil. Cities on SWM

- Conversion of open to controlled dumpsite
- Putting of up of low-cost SLF
- SWM full-cost accounting, waste collection, and enforcement
- Installation of Brgy. MRFs and Zero Waste Mng't

Support Mechanism by LCP

- Environmental Education
- Policy Dev't and Advocacy
- Knowledge Management
- Coordination and Networking
- Trainings and Capacity Dev't
- Mentoring and Piloting of specific programs

Thank you!



Solid Waste Management Program! The City of San Fernando Experience

Prescribed by:
Hon. Pablo C. Ortega, City Mayor
during the Philippine National Consultation
Workshop on Kitakyushu Initiative Demonstration
Project
10-11 April 2008, Bago City, Philippines





THE VISION

**"The Botanical Garden City
a healthy city and the springboard for re-
progress"**

The City of San Fernando
wants to be known as an
environment-conscious
place.

The Botanical Garden
symbolizes the City's
recognition that it wants to
be known as a clean and
green city.


**A CITY THAT EVERYBODY WANTS
TO LIVE AND WORK IN**

NATURAL RESOURCES

Land Area	149,309 ha.
Land Classification	
Certified A and D	105,104 ha.
Public Forestlands	44,204 ha.
Total Public Forest	29,002 ha.

City Environment and Natural Resources Office
19 Antonio Diaz, City of San Fernando, LU
+6372-888901 loc. 110




Ecological Solid Waste Management Program




City Environment and Natural Resources Office
19 Antonio Diaz, City of San Fernando, LU
+6372-888901 loc. 110



OBJECTIVES

- ✓ Improve the existing SWM organizational structure and management schemes
- ✓ Establish effective SWM support system and facilities
- ✓ Finalize and institutionalize SWM plan in accordance to the City SWM Ordinance and R.A. 9003
- ✓ Increase community awareness and participation on SWM through IEC
- ✓ Improve the involvement of barangays through SWM incentive schemes
- ✓ Improve participation and coordination with private and business sectors

City Environment and Natural Resources Office
19 Antonio Diaz, City of San Fernando, LU
+6372-888901 loc. 110



SWM PROFILE

Brief History

Inclusive Dates	Type of Waste Disposal	Location
1960 to 1997	Open garbage dumping	Canaoay
1997 to June 1998	Open garbage dumping	Mameltac
July 1998 to 2005	Covered garbage disposal	Mameltac
October 2005 to date	Construction of engineered landfill	Mameltac

- *The present landfill was acquired by the Municipal Government under the late Mayor Justo O. Orros, Jr. and the development including the buildings were funded by the US AID - since we were then the host to the Wallace Air Base, part of the US Bases. This was a project in 1983 during the Marcos administration, and in 1986, the facilities were turned over to the LGU but without the needed components. It was only in 1997 when the site was used as an alternative to the old site, which is near the airport.
- * Recycling was not practiced at source, but we have 20 waste pickers who are under a contractor, the barangay captain of the host barangay.
- *Waste segregation is encouraged by the present administration through an educational drive and by having two garbage containers 'NABUBULOK' and 'HINDI NABUBULOK'.
- *Barangay MRF clusters are emphasized (Barangays Lingsat, Pagdaraan, Carlatan and Dalupirasa-Casta)
- *Association of Ecosan and MRF
- * 7 Barangay trucks and 3 tricycles

City Environment and Natural Resources Office
19 Antonio Diaz, City of San Fernando, LU
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BEFORE



- Drum @ P400 to P600/pc
- Lasted for 5 to 6 months only
- additional waste to landfill

NOW

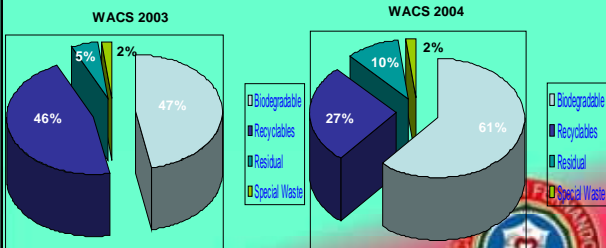


- Concrete Receptacle @ P800/pc
- Lasted up to 5 yrs


City of San Fernando
 City Environment and Natural Resources Office
 19 Malvar Road, City of San Fernando, LU
 46172-888801 loc-110



Waste Analyses and Characterization Study 2003 & 2004 City of San Fernando, La Union

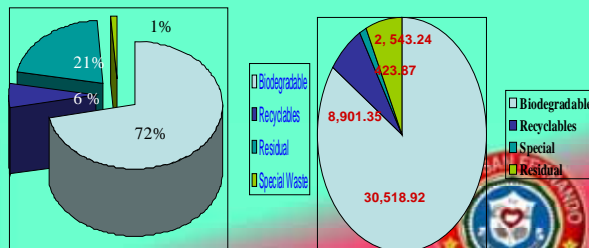


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2005 Waste Analysis and Characterization Study End of Pipe Disposal conducted on 13-17 October 2005

Total waste composition per day Total waste per day in tons = 42, 387.392



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Barangay-based MRF

Barangay Solid Waste Management Program Clustering

Barangay Ordinance No. 01-03 (Lingsat)

“An Ordinance Establishing an Integrated Solid Waste Management in Barangay Lingsat”

Lingsat Cluster (2006) Lingsat, Carlitan, Pagdaraoan and Dalumpinas Oeste



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 City Environment and Natural Resources Office
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Cluster Programs:

1. Materials Recovery Facility (MRF) :
 income from recyclables= Php 8,000.00- Php 10,000.00/month
2. No Segregation, No Collection Scheme (Segregated Collection)
3. Door-to-Door personalized collection: at least Php 25.00 monthly maintenance fee per household
4. Composting including vermicomposting: Php 100.00/sack for the organic compost and Php 25.00/kg for the vermicast




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5. House-to-house info-dissemination campaign/Intensive IEC
6. Butterfly and Herbal Garden
7. Nursery (partnership between the Barangay and City Government)
8. Community Livelihood Program (fishpond)




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Barangay-based MRF

San Agustin/City equipment

Dallangayan Oeste Cluster MRF/collection

City Environment and Natural Resources
18 Marikina St. City of San Fernando, LU

City Offices SWM Practices

City Environment and Natural Resources Office
18 Marikina St. City of San Fernando, LU

School-based SWM Program

City Environment and Natural Resources Office
18 Marikina St. City of San Fernando, LU

Engineered Landfill

- clay liner technology
- land area of 10.6 hectares
- 3 cells good for 25 years
- leachate collection system
- wastewater treatment system
- materials recovery and diversion facility
- low cost liner facility

Total Project Cost: 10.3M
(Payable in 24 years to the World Bank)

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Capped Landfill Cell (South Cell)

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+6372-888801 loc. 110

Waste Recovery at the Sanitary Landfill

Recyclables

Month	Weight, in tons
May	11.85
June	12.19
July	14.89
Aug.	14.79
Sept.	15.78
Oct.	13.24
Nov.	11.48
Dec.	11.72

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Lessons learned

- community participation and empowerment brought success to the program
- strong political will of LGU
- counterparting scheme
- good working relationship of executive and legislative department
- collaboration with NGOs, NGAs, POs and other stakeholders brought success in the implementation of the project
- improved solid waste management system
- heightened interest and encouragement of people to participate in the SWM campaigns of the City of San Fernando
- the holistic approach that made possible the institutionalization of City SWM ordinance, environmental code and other ordinances related to SWM ensures logistical support even if there will be changes in leadership in the City



Other Environmental Initiatives

- Clean Water Project
- Coastal Resources Management
- Clean Air
- Forest Management Program
- Pollution Abatement
- Disaster Preparedness and Management
- Wastewater Treatment and Management
- Special Projects



City Environment and Natural Resources Office
19 Santos St., City of San Fernando, LU
4037-888901 ext. 110



Ecological Sanitation



City Environment and Natural Resources Office
19 Santos St., City of San Fernando, LU



Continuity and Innovation
for Unity, Peace, Order and Progress for All

Agay-ayat Kadacayo Amin!!!

Green City, Global City

HON. PABLO C. ORTEGA (2011-2015) HON. PANCRASIO Q. NISCE (2015-2019)
HON. FRANCISCO C. ORTEGA, JR. HON. JOSEPH BERNARD D. VILERO HON. ALFREDO PABLO B. ORTEGA HON. MA. ROSARIO SUFFROENA P. NISCE
HON. XOSOL B. ADAS HON. ALBERTO D. ELIAS B. HON. JONAS DAVOS HON. MARVIN A. JUCAS HON. ANDRE A. DACARAY HON. MARCO A. LACAMANA HON. JOSEPH B. DE GUZMAN HON. LOLITA B. OYUANGCO HON. JUSTINIANO A. ARAGON, JR. HON. MARIC JUSTIN E. ARZADA

SOLID WASTE MANAGEMENT PRACTICES: The Makati City Way



Ms. ERJUDEL D. DIONISIO
District I Head, IEC Section, Solid Waste Management Division

Ms. KATHLEEN B. ALMONTE
Planning Officer III, Planning Section

DEPARTMENT OF ENVIRONMENTAL SERVICES



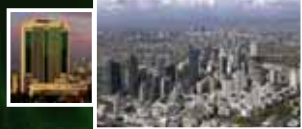
city government of makati

OUTLINE

- Makati City Profile
- Waste Collection and Disposal
- Waste Reduction and Diversion Program
- Enforcement of City Ordinance 2003-095
- Annual Events

city government of makati

Makati City



Business & Financial Capital
Pioneer Techno City

Urban Tourism Center

50% of the top 10 highest earning, most profitable & largest corporations

60,551 business establishments
86 embassies & consulates
12 International organizations



Makati City

One of the 16 Cities of the metropolitan manila, which also include a municipality



National Capital Region

Makati City



337 Years as a Political Entity

Recognized as a Community In 1670

Converted from Municipality to a Highly Urbanized City in 1995



city government of makati



TWO CONGRESSIONAL DISTRICTS
MAKATI'S TOTAL LAND AREA

District 1 – 20 Barangays
District 2 – 19 Barangays

27.36 km²

city government of makati



POPULATION

Night Time = 511,735

Day Time = 3.7 M

GROWTH RATE

0.04%

NO. OF HH:

119,270

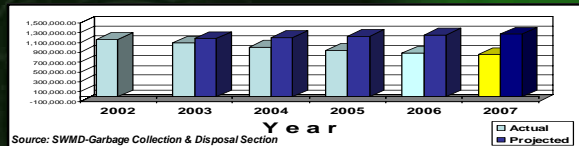
(Based on SEP, 2005)

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WASTE COLLECTION & DISPOSAL

city government of makati

Comparative Volume of Garbage Collected and Disposed

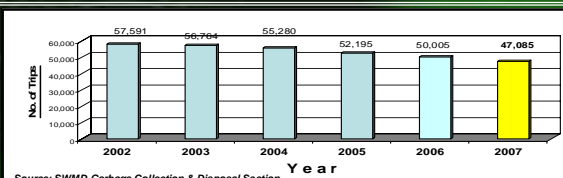


Source: SWMD-Garbage Collection & Disposal Section

Year	2002	2003	2004	2005	2006	2007
Volume of Garbage Collected and Disposed in cu.m. (Actual)	1,158,881.2	1,094,970	1,005,291	942,538.50	886,993	857,230
Projected Waste Generation (in cu.m.)	-	1,182,058	1,205,699.7	1,229,813.7	1,254,410	1,279,498
Ave. Daily volume of waste collected and disposed (in cu.m.)	3,175	2,999	2,754	2,582	2,430	2,348
Accumulated Volume of Garbage reduced	Base Year	87,088	200,408.7	287,275.2	367,417	422,268
Reduction Rate	Base Year	7.37%	16.62%	23.36%	30%	33%

The average Daily Volume of Waste Collected and Disposed is now down to 2,348 cu.m. / Day from 3,175 cu.m. / Day waste generation in 2002
The Cumulative Reduction Rate for the five-year period is 33% which exceeded the target 25% target diversion rate based on RA 9003.

Status of Collection Trips



Source: SWMD-Garbage Collection & Disposal Section

Year	2002	2003	2004	2005	2006	2007
Total Collection Trips	57,591	56,764	55,280	52,195	50,005	47,085
Average daily trips	158	155	151	143	137	129
Accumulated No. of Collection Trips Reduced	Base Year	827	2311	5,396	7,586	10,506
Reduction Rate	Base Year	1.43%	4%	9.4%	13.2%	18%

A reduction of 18% was achieved in 2007 or 10,506 trip less than the total number of trips in 2002.

The Average trips per day is 129 compared to 158 trips in 2002.

WASTE REDUCTION & DIVERSION PROGRAM

city government of makati

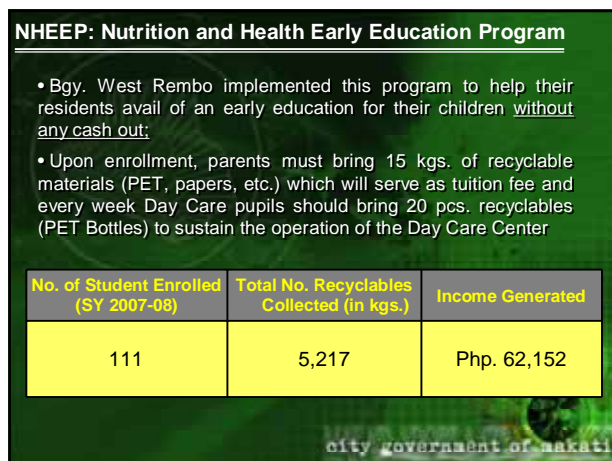
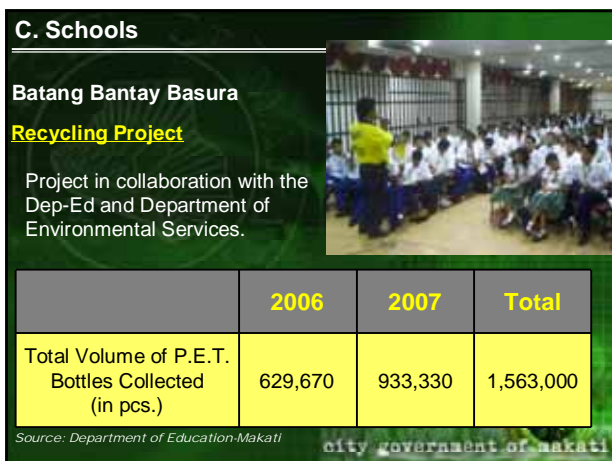
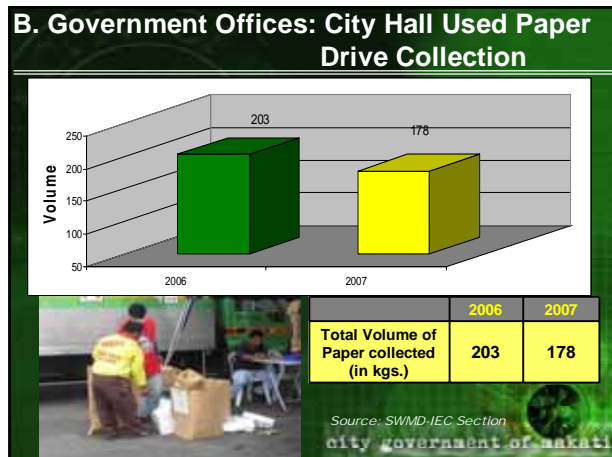
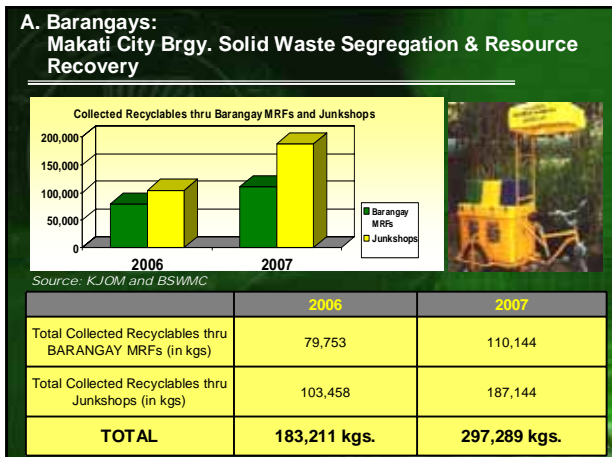
PROFILE OF THE REDUCTION & DIVERSION PROGRAM

Makati City Waste Diversion Targets

The conservative target diversion percentage for 2003 was set as basis for the implementation of programs and projects as well as a start-up point for compliance to the law. The compulsory 25% diversion will be distributed among the following years:

- 2002 : Base Year
- 2003 : 5%
- 2004 : 10%
- 2005 : 15%
- 2006 : 20%
- 2007 : 25%

city government of makati



F. Transport Sector - OPLAN PUV: "Tsuper ng Bayan Kaakibat sa Kalinisan"



Remarks
<ul style="list-style-type: none"> Orientation Seminar re: C.O. 2003-095, C.O. 2004-032, C.O. 2002-090 on all Drivers and Operators of PUV, Fx, Taxi and Tricycles operating in the City last August 23, 2007 with 175 participants. Distribution of trash receptacles on all attendees were given last September 24, 2007. Strict implementation of the said ordinances to all drivers and operators started on the 1st week of October. 138 Jeepney Drivers without trashcans were apprehended

city government of makati

G. Makati Weekend Waste Market (every 2nd Friday of the Month)



	2006	2007
Total Volume of Assorted Waste	10,919.00 kgs. & 1680 pcs	24,795.00 kgs. & 4481 pcs
Total Amount Generated	Php 132,215.00	Php 313,547.00

Source: Philippine Business for Environment

city government of makati

1st Magallanes Recyclables Market



Held last February 29, 2008

Total Volume of Assorted Waste	4,788 kgs.
Total Amount Generated	Php 29,589.49

Source: Ayala Foundation, Inc. - SWM Program

city government of makati

H. 3B SA PASKO (November – December)



	2006	2007	Remarks
Estimated weight of garbage diverted (in kgs.)	11,000	14,547	Increase of 24% or 3,547 kgs.
Total Income generated (Php)	55,148	77,042	Increase of 28% or Php 21,893

Source: SWMD/IEC Section

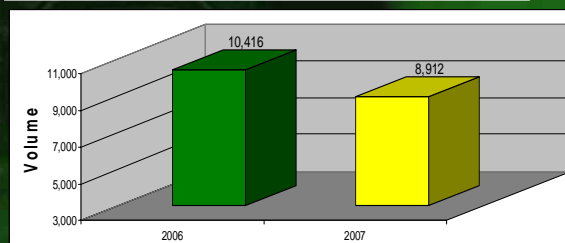
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ENFORCEMENT OF CITY ORDINANCE 2003-095 (City Solid Waste Management Code)



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NUMBER OF APPREHENDED VIOLATORS OF CITY ORDINANCE 2003-095

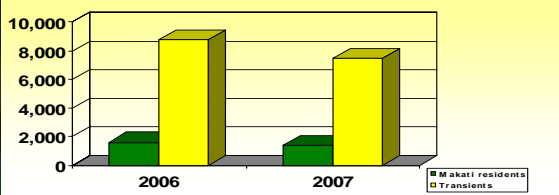


	2006	2007
Total No. of Apprehended Violators	10,416	8,912

Source: SWMD/Enforcement Section

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APPREHENDED VIOLATORS: DISAGGREGATED BY CLASSIFICATION

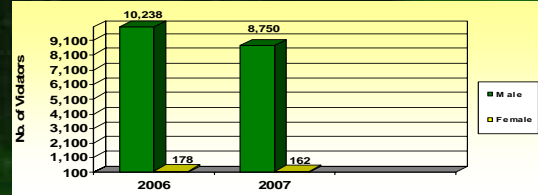


	2006		2007	
Total No. of Violators	10,416		8,912	
	Residents	Transients	Residents	Transients
PERCENTAGE	16%	84%	16%	84%
TOTAL	1625	8791	1410	7502

Source: SWMD-Enforcement Section

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APPREHENDED VIOLATORS: DISAGGREGATED (BY GENDER)

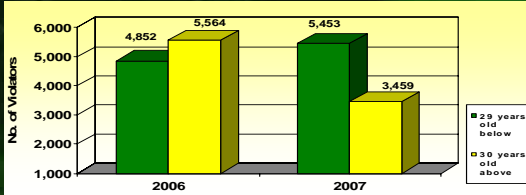


	2006		2007	
Total No. of Violators	10,416		8,912	
	Male	Female	Male	Female
PERCENTAGE	98%	2%	98%	2%
TOTAL	10,238	178	8,750	162

Source: SWMD-Enforcement Section

city government of makati

APPREHENDED VIOLATORS: DISAGGREGATED (BY AGE)



	2006		2007	
Total No. of Violators	10,416		8,912	
	29 years old below	30 years old above	29 years old below	30 years old above
PERCENTAGE	47%	53%	61%	39%
TOTAL	4,852	5,564	5,453	3,459

Source: SWMD-Enforcement Section

city government of makati

MAKATI CITY SOLID WASTE MANAGEMENT BOARD

- Meeting is held regularly once a month for purposes of planning, coordinating & overseeing the implementation of the solid waste management plan, discuss various programs & projects, accomplishments as well as issues on solid waste management.
- Barangays report on their accomplishments every meeting (at least 2 barangays).



ANNUAL EVENTS

city government of makati

CLEANLINESS AWARENESS MONTH ACTIVITIES (JANUARY)

Clean-up Operation conducted at Barangay Rizal last January 20, 2007.

Length of Area Cleaned

150 Lm.

Volume of Garbage Collected

15 m³



BEFORE



AFTER

city government of makati

KUBOL CLEAN UP (MARCH)



Remarks

Cleaning, Clearing and Collecting of waste before, during and after the Lenten Season at Brgys. Poblacion last March 2007. The organizers assisted in the dismantling of some kubols

city government of makati

22ND INTERNATIONAL COASTAL CLEAN UP (SEPTEMBER)

Conducted Clean up operation at P. Medina Creek, Brgy. Pio del Pilar last September 15, 2007.



BEFORE



AFTER

city government of makati



TACURONG CITY PROFILE

Classification	2 nd class Component City
Total Land Area	115.40 sq. km.
Total Population	83,394 (2016)
Number of Barangays	20
No. of Households	16,718
No. of persons/household	5
Literacy Rate	95.70%
Average Annual Growth Rate (1995 - 2006)	1.3%



Demographic Profile

Area Covered by Waste collection	Barangays 8 and 9 of New Isabela & San Pablo, Gracia, Bernardino & Carmona
Current SWM activities implemented	Collection, processing, disposal, monitoring
Implementing Agency	City ESWO
Primary Facilities	MRF, Controlled Dump
Legal Basis of SWM Program	RA 9003 CWDM Ordinance # 13 10 Year Plan

Economic Profile

No. of commercial establishments	3,000
Agriculture based area	80%
Total No. of Households	19
Estimated Economic Growth	1% annually

TACURONG CITY SOLID WASTE MANAGEMENT PROGRAM

7-day waste characterization results



Type of Waste	Weight (Kgs/day)	Percent (%)
Biodegradable	9,302.62	65.82%
Recyclables	782.19	5.20%
Special Waste	124.91	0.83%
Residual	4,335.77	28.15%

THE 7-DAY WASTE CHARACTERIZATION RESULTS BECAME THE BASIS OF OUR ACTION PLANS AND TECHNOLOGIES THAT WE WILL USE IN IMPLEMENTING OUR SWM PROGRAM ...

Waste Characteristic of Tacurong City

TACURONG CITY SOLID WASTE MANAGEMENT PROGRAM

ACTUAL BUDGETARY REQUIREMENT WAS DETERMINED USING FCA

USING FULL COST ACCOUNTING, ACTUAL BUDGETARY REQUIREMENT OF OUR SWM PROGRAM WAS DETERMINED...

Total IRA of Tacurong City	154,700,219.00
Total Budget of ENR Office	9,511,955.00
% of ENR budget to IRA	6.15%
Funding Requirement of SWM Program	5,476,397.86
% of SWM Program to ENR Budget	57.57%

REPLICATED COSTS

Description of cost	Qty	Unit cost	% Allowed	Total Cost	Actual Cost	Over/Under	Year 1 - 2011
Real property							
- 1/2 Fee based				80,000.00			80,000.00
- Land Office, in transfer & lease				10,000.00			10,000.00
- Total				90,000.00			90,000.00
Equipment							
- 90% Subsidized	1	5,000,000.00	90%	4,500,000.00	50,000.00	49,500,000.00	50,000.00
- Purchase value	1	5,000,000.00	0%	5,000,000.00	50,000.00	5,050,000.00	50,000.00
- Depreciated	1	5,000,000.00	0%	5,000,000.00	50,000.00	5,050,000.00	50,000.00
- Depreciation	1	5,000,000.00	0%	5,000,000.00	50,000.00	5,050,000.00	50,000.00
- Total				15,000,000.00	150,000.00	15,150,000.00	150,000.00
- Cost of investment charge	1	5,000,000.00		5,000,000.00	50,000.00	5,050,000.00	50,000.00
- Interest on investment at 10.2	1	5,000,000.00		5,000,000.00	50,000.00	5,050,000.00	50,000.00
- Interest on investment at 10.2	1	5,000,000.00		5,000,000.00	50,000.00	5,050,000.00	50,000.00
- Interest on investment at 10.2	1	5,000,000.00		5,000,000.00	50,000.00	5,050,000.00	50,000.00
- Interest on investment at 10.2	1	5,000,000.00		5,000,000.00	50,000.00	5,050,000.00	50,000.00

TACURONG CITY SOLID WASTE MANAGEMENT PROGRAM

LEGAL SUPPORT OF SWM PROGRAM IS IN PLACE



10-YEAR SWM PLAN

RA 9003

SWM ORDINANCE & ITS IRR

TACURONG CITY SOLID WASTE MANAGEMENT PROGRAM

ESTABLISHED AN MRF TO IMPLEMENT WASTE DIVERSION



Sorting Operation

Storage / Marketing

Vermin Composting / recyclables recovery

TACURONG CITY SOLID WASTE MANAGEMENT PROGRAM

IMPLEMENTATION OF WASTE DIVERSION

Average daily waste recovery @ 10:12

Biodegradable	2,000 kgs
Tin Cans	9.85 kgs
Plastics	5.43 kgs
Cartons	171.74 kgs
Aluminum Cans	9.16 kgs
Special	9.94 kgs
Others	9.17 kgs

Estimated Informal waste recovery

INFORMAL WASTE DIVERSION WAS ALSO BEING DONE BY STAKEHOLDERS

Informal waste recovery by junkies	@ least 100 kgs/day (estimated)
Waste Recovery by Large establishments/Stores	@ least 100 kgs/day (estimated)
Average daily waste scavenged @ dumpsite	100 kgs/day

Delivery of Waste Diversion

Total Waste Recovered	3,837.27 kgs/day
Total Daily Waste Generated	25,041.42
% waste diversion	15.33%

TACURONG CITY SOLID WASTE MANAGEMENT PROGRAM

SANITARY LANDFILL WAS ESTABLISHED AND WILL BE OPERATIONAL THIS MONTH



ACTIVITY	COST
Site Preparation	70,000.00
Initial excavation	600,000.00
Survey / Elevation for contour preparation	60,000.00
Earthworks (Excavation, subgrade prep & const. of curbsides)	572,701.90
Laying of Perforated pipes	187,231.20
Laying of Filter Cloths	785,227.27
Steel Layer	406,424.73
Gravel Layer	935,207.00
Construction of Perimeter Canal	318,044.30
Construction of Leachate Collection Pond	50,725.34
Miscellaneous costs	12,190.00
Roadway Preparation	510,000.00
Project Inspection	120,000.00
TOTAL COST	4,200,969.94

TACURONG CITY SOLID WASTE MANAGEMENT PROGRAM

SLF DETAILS



CROSS SECTIONS OF SLF

TACURONG CITY SOLID WASTE MANAGEMENT PROGRAM

LEACHATE COLLECTION SYSTEM OF SLF



TACURONG CITY SOLID WASTE MANAGEMENT PROGRAM

REVENUE GENERATION



REVENUE GENERATION

Summary and Comparative Report on Revenue Generation

Year	Expenses	Revenue	% Add. To LGU
2004	3,438,100	889,700	78%
2005	3,438,100	1,537,362	88%
2006	3,438,100	1,300,000	87%
2007*	3,638,100	2,010,484	84%

* with 47% increase in 2007

TACURONG CITY SOLID WASTE MANAGEMENT PROGRAM

THE BENEFITS WE HAVE REAPED...



WASTE DIVERSION IS IMPLEMENTED

CREATES EMPLOYMENT

GENERATES REVENUE

REFLECTS THE GOOD GOVERNANCE OF THE CITY

CLEANER SURROUNDINGS

GOOD EDUCATIONAL SITE

STRENGTHENS PUBLIC PARTICIPATION

TACURONG CITY SOLID WASTE MANAGEMENT PROGRAM

THANK YOU & MABUHAY !!!

" We want to avoid what Manila has been experiencing. We don't want garbage to cause public and environmental hazards. That is why we sought ways to effectively manage our city's solid waste."



- Mayor Lino Montilla

TACURONG CITY SOLID WASTE MANAGEMENT PROGRAM

UNITED NATIONS
ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC
in cooperation with
The Local Government of Bago City, Negros Occidental, and
Institute for Global Environment Strategies (IGES)

Kitakyushu Initiative for a Clean Environment:
National Consultation Workshop on Kitakyushu Initiative Demonstration Project
10-11 April 2008
Ramon Salas Park and Nature Center
Bago City, Philippines

Report of the Workshop
(Note by the Secretariat)

I. Recommendations

The National Consultation Workshop on Kitakyushu Initiative Demonstration Project, organized by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) in cooperation with the Institute for Global Environmental Strategies (IGES) and the City Government of Bago, Philippines, was held in Ramon Salas Park and Nature Center on 10-11 April 2008. The workshop formulated the following recommendations:

For further implementation of the Bago City Demonstration project:

- a) To include local NGOs in project implementation
- b) To conduct massive information dissemination in order to encourage participation from the public. To use mass media like radio, TV for promotion.
- c) To utilize local materials and available school materials for the environmental education manuals.
- d) To prepare English and Filipino version for the environmental education manuals.
- e) To project the solid waste generation of the city.
- f) To conduct Information, Education, Communication (IEC) per sector-market, schools, government agencies and others.
- g) To tap into private companies/institutions for funding support.
- h) To organize and deputize implementers of the project.
- i) To conduct a waste analysis study in order to identify and classify the wastes generated in the city.
- j) To consider clustering of barangays (communities) to easily transfer the good practice.
- k) To itemize or identify the wastes that could be sold in schools.
- l) To consider looking for a process or project that deals with residual wastes.
- m) To encourage barangays to develop a barangay ordinance on solid waste management.
- n) To put holes on the Takakura baskets to avoid formation of methane gas.
- o) To develop an integrated solid waste management plan for the City.
- p) To document the activities of the project and disseminate the information to other cities.
- q) To emphasize and strengthen environmental and policy awareness.

For further dissemination of the Bago City experience to other cities in Philippines:

- a) To keep the National Government informed and involved to explore additional support to the dissemination process by collecting the voices of local authorities and reflecting them in national policies
- b) To take advantage of the existing network of the League of Cities of the Philippines to share information of Bago's experience
- c) To highlight the significant role of women in the successful implementation of such projects

II. Proceedings

1. The National Consultation Workshop on Kitakyushu Initiative Demonstration Project, organized by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) in cooperation with the Institute for Global Environmental Strategies (IGES) and the City Government of Bago, Philippines, was held in Ramon Salas Park and Nature Center on 10-11 April 2008.
2. The Workshop included the participation of representatives from local governments in the Philippines, including: Bago, Bacolod, Kabankalan, Silay, San Carlos, La Carlota, Bais and the Provincial Government of Negros Occidental. Representatives from Iloilo, Cebu, Makati, Puerto Princesa, San Fernando and Tacurong city were also present. The workshop also includes the participation of the National Solid Waste Management Commission (NSWMC) of the Philippines, the League of Cities of the Philippines (LCP) and representatives from Surabaya City, Indonesia.
3. The workshop was held in order to formulate strategies, gather inputs and comments to improve the implementation of the KI-demonstration project in Bago City. It also serves as a forum to exchange information, good practices, management and social strategies in addressing solid waste problems in Philippine cities and an avenue to promote replication of successful strategies. The workshop brought together relevant local and central government representatives from the Philippines and solid waste management practitioners from Indonesia.
4. The workshop was opened by the Mayor of Bago City- Honourable Ramon D. Torres, who discussed briefly the importance local environmental actions and its implication to the global environmental condition. The opening remark was followed by two introductory presentations from UNESCAP and IGES. Mr. Masakazu Ichimura, Section Chief of Environment and Sustainable Development Division of UNESCAP briefly describe the role of UNESCAP in promoting local environmental initiatives. He also presented the concept of "green growth", an approach that seeks to harmonize economic growth for poverty reduction and improved well-being with environmental sustainability. This approach is deemed useful/important especially for small and developing cities like Bago. The background, goals and activities of the Kitakyushu Initiative for a Clean Environment under the supervision of UNESCAP was also presented. Ms. Peachie Ann Aquino, a representative from IGES, delivered a presentation about the role of Kitakyushu Initiative Network (KIN) Secretariat in facilitating inter-city cooperation and replication of good practices. The activities of KIN-Secretariat particularly in the Philippines were briefly discussed.

5. The opening session was followed by the presentation from the National Solid Waste Management Commission by Ms. Emelita Aguinaldo. Background on the waste situation - issues, approaches and techniques to address waste issues in the Philippines were discussed. An overview of the national policy-Republic Act 9003 or the Ecological Solid Waste Management Act of the Philippines was introduced, presenting the mandates, the role of the local government units, scope of implementation and some of the achievements of Philippines cities in implementing the policy.
6. Following the presentation from the National Solid Waste Management Commission of the Philippines, Ms. Theresia Widjawati, Deputy Chairperson of Surabaya Women's Welfare Organization, presented the experiences of Surabaya City, Indonesia, in managing solid waste through community mobilization. The presentation highlighted the significant role of women in implementing the Clean and Green initiative of Surabaya City, especially at the household level through the promotion of the Takakura-composting home method. This practice not only created a significant impact in improving the aesthetic environmental condition of the communities but also reduced the amount of waste generated, and opened opportunities to uplift the socio-economic condition of the residents. The presence of a strong partnership between the local government, communities and NGOs was identified as one of the success factors of this initiative.
7. In Session II: Solid Waste Management as a Social Enterprise: A Kitakyushu Initiative Demonstration Project, the Honourable Mayor Ramon D. Torres presented in detail the city profile of Bago -demography, economic activities, income and land area, and then the initiatives of the city government on solid waste management, and more specifically KABAHHIN KA-the city's first community-based SWM project. KABAHHIN KA features sound waste management involving communities in the city that successfully resulted to 50% waste reduction by weight. Several SWM interventions were also applied to support the project such the acquisition of waste equipments and construction of materials recovery facilities in barangays and Eco-town center to facilitate composting and recycling activities. Thru the city's partnership with the Kitakyushu Initiative Network, KABAHHIN KA was selected as a demonstration project for the Kitakyushu Initiative programme and a recipient for the APFED showcase program. It seeks to integrate good practices learned from two other network cities - Surabaya City for its Takakura composting home method and Bangkok for its waste banking activities. The project also includes environmental education and development of SWM guidebook. The Mayor ended his presentation by inviting suggestions from the participants specially those coming from cities with excellent practices on SWM to improve the current activities/workplan of the KABAHHIN KA project.
8. In Session 3: Showcase of Good Solid Waste Management Practices in the Philippines include presentations from the League of Cities of the Philippines on the "Solid Waste Management Practices in Philippine Cities", followed by the presentation from Honourable Mayor Pablo Ortega of San Fernando on the " Solid Waste Management Practices of San Fernando", the "Solid Waste Management Practices in Makati City" and the "Solid Waste Management Practices in Tacurong City".
9. This session highlighted the initiatives and successful SWM cases in the Philippines. The first presentation, prepared by LCP, discussed the background, goals, and the role of the organization in city-to-city cooperation. LCP is an organization of City Mayors in the Philippines that seeks to assist or help coordinate efforts to improve local governance in the

country; the organization also seeks to address many urban issues including environmental management. Several support measures are offered by the organization particularly for the implementation of the SWM policy and other environmental initiatives. A few of these actions include forum sharing on SWM initiatives, SWM trainings, policy dialogues, mentoring and others. The organization has also conducted an initial survey on the status of cities implementation of RA 9003 and is also monitoring the achievements of cities towards the implementation of the policy.

10. Cities like San Fernando, Makati and Tacurong presented their achievements in addressing solid waste problems. San Fernando, one of the leading cities in northern Philippines has initiated numerous programs on solid waste. Sanitary landfill, community-based waste management, composting and segregation activities are just a few of the successful initiatives of the city. Lessons and success factors essential in implementing local programs on the environment was shared by Mayor Pablo Ortega, these are (1) strong political will, (2) presence community participation and empowerment, (3) significance of institutionalization and policy measures. Makati City, the business and financial capital of the Philippines have strongly invested in their waste management campaign. Numerous waste diversion projects targeting different sectors of the city- residential, commercial, public and private institutions have been implemented by the local government. The presentation highlighted several important factors including (1) importance of creating waste diversion targets, (2) importance of waste characterization for baseline data (3) and establishing close partnership/relationship with private institutions. Lastly, Tacurong City- a fifth class component city in Mindanao has made significant progress in managing solid waste having completed its 10-year integrated SWM plan. Waste facilities like composting plant, sanitary landfill and materials recovery facility on barangays have been developed. Furthermore, the city has pioneered the implementation of environmental management fees (EMF), a charging system for waste collection. The city shared important lessons learned like (1) importance of local policy support in waste management and lastly (2) the significance of user-fees to ensure self-sustainable waste programs.
11. In the last session, representatives from San Fernando, Puerto Princesa, Cebu, Makati, Tacurong, Bacolod, San Carlos, Kabankalan, Bais, Iloilo, La Carlota, Provincial Government of Negros Occidental, Surabaya, NSWMC and LCP provided their comments and suggestions on how to improve the process of implementation, on administrative and technical components, and in activities/action plans and strategies for replication of the Bago City's demonstration project.

8 April 2008

**UNITED NATIONS
ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC**

in cooperation with

The Local Government of Bago City, Negros Occidental, and
Institute for Global Environment Strategies (IGES)

Kitakyushu Initiative for a Clean Environment:

National Consultation Workshop on Kitakyushu Initiative Demonstration Project

10-11 April 2008

Ramon Salas Park and Nature Center

Bago City, Philippines

PROVISIONAL LIST OF PARTICIPANTS

INDONESIA (Surabaya)

Ms. Theresia Widyawati, Deputy Chairperson, Health and Environment Division, Surabaya Women Welfare Organization, Tenggilis Utara II/14, Surabaya - 60292, East Java [Tel: 62 (031) 71345404; Fax: 62 (031) 8476355; Email: thwidya@yahoo.co.id]

Ms. Dyah Katarina, Chair Person, Surabaya Women Welfare Organization, Jl. Walikota Mustajab 61 Surabaya - Indonesia [Mobile: +628155030111 ; Email: dyah.katarina@yahoo.com]

PHILIPPINES (Bago)

Hon. Ramon D. Torres, Honourable Mayor, City of Bago, A. Gonzaga Street, Barangay Poblacion, Bago City, Philippines Fax: (63-3) 4732 8743

PHILIPPINES (Bacolod)

Engr. Josephus A. Cerna, OIC, Department of Public Services, City Government of Bacolod, Araneta St., Bacolod City, Negros Occidental, Philippines, [Tel: (63-34)433-7354 ; Mobile: (63-917)-2555936]

Mr. Efren A. Canlas, City Government Assistant Department Head II, Department of Public Services, City Government of Bacolod, Araneta St., Bacolod City, Negros Occidental, Philippines [Tel: (63-34)433-7354]

PHILIPPINES (Kabankalan)

Nemesio C. Canete, DR. Dev., City Agriculturist and Designate ENRO, City Government of Kabankalan, Kabankalan City, Negros Occidental, Philippines [Tel: (63-34)471-2507 local 122 and 123 ; Fax : (63-34)471-2291 ; Email: nemesio_19@yahoo.com]

PHILIPPINES (Silay)

Roberto L. Mascunana, Environmental Management Specialist II, City Government of Silay, Zamora St., Silay City, Negros Occidental, Philippines; Mobile: (63-917)917-0749 ; Fax: (63-34)495-0587 ; Email: bobl mascunana@yahoo.com]

Engr. Rene Roy H. Pahilanga, Engr. II, City Government of Silay, Zamora St., Silay City, Negros Occidental, Philippines, [Tel: (63-34)495-2484 to 86 ; Fax: (63-34)495-0587 ; Email: reneroy37@yahoo.com

PHILIPPINES (Provincial Government of Negros Occidental)

Elmer M. Espeja, Project Development Officer/Team Leader, Secretariat, Provincial SWM Board, Provincial Government of Negros Occidental, Philippines, [Tel (63-34)434-5396/433-9388 ; Mobile: (63-916)385-2624 ; Fax: (63-34)434-5396]

PHILIPPINES (San Carlos)

Ms. Marietta F. Lomocso, Team Leader – San Carlos City LGU, Solid Waste Management Office – Negros Occidental, San Carlos City, Negros Occidental, Philippines, [Tel: (63-34)312-5455 ; Mobile: (63-920)546-7266 ; Fax: (63-34)312-5113 ; Email: mff_lomocso2005@yahoo.com]

Mr. Loreto C. Sanchez, Solid Waste Manager, LGU, San Carlos City, F.C. Ledesma Avenue, San Carlos City, Negros Occidental, Philippines [Tel: (63-34) 312-5455 ; Mobile: (63-922)948-2196 ; Fax: (63-34)312-5113 ; Email: sanchezloreto@yahoo.com]

Klaus Hanuschke, Consultant from German Development Service (Ded), San Carlos City Negros Occidental, SWMO City Hall, Ledesma Avenue, San Carlos City, Negros Occidental, Philippines, [Tel: (63-34)312-5455 ; Fax: (63-34)312-5113 ; Email: k.hanuschke@berlin.de]

PHILIPPINES (La Carlota)

Engr. Ryan P. Gelongo, Engr. II, (Motorpool Division) Repair, Maintenance & Motorpool Division – GSO, City Government of La Carlota, La Paz St., La Carlota City, Negros Occidental, Philippines, Tel: (63-34)460-2670 / 460-2459 / 460-2234 ; Fax: (63-34)460-2459 ; Email: yatz_1911@yahoo.com]

PHILIPPINES (Bais)

Engr. Melijon Buquiran, Engr. III / OIC – City ENRO, Bais City, E.C. Villanueva St., Bais City, Negros oriental, Philippines, [Tel: (63-35)402-3507 ; Mobile: (63-928)318-2970 ; Fax: (63-35)402-8181 ; Email: nojilem15@yahoo.com.ph]

PHILIPPINES (Iloilo)

Engr. Helen G. Sotomil, SLF Team Leader / ILSWMB Member, City Government of Iloilo, Lot 10-11, blk 3, Villa Soledad Subdivision, Balantang, Iloilo City, Philippines [Mobile: (63-919)791-2078 ; Tel: (63-33)509-0981 ; Email: sotomil_hg@yahoo.com]

PHILIPPINES (Cebu)

Mr. Nigel Paul Calo Villarete, Department Head II, Cebu City Government, 8th Floor Executive Building, Cebu City Hall, M.C. Briones Str., Barangay Std. Nino, Cebu City, Cebu 6000 [Tel: (63-32) 255-1884; Fax: (63-32) 255-7380; Email: paul@villarete.com]

Ms. Joni Flor Lana Monteveros, Planning Officer, Cebu City Government, 8th Floor Executive Building, Cebu City Hall, M.C. Briones Str., Barangay Std. Nino, Cebu City, Cebu 6000 [Tel: (63-32) 255-1884, 253-2217; Fax: (63-32) 255-7380; Email: jfmonteveros@gmail.com]

PHILIPPINES (Makati)

Ms. Erjufel D. Dionisio, Head, IEC Section, District 1 - Solid Waste Management Division, Department of Environmental Services - City Government of Makati, G/F DES Office, Old Makati City Hall, J.P. Rizal Street, Población, Makati City 1200 [Tel/Fax: 63-2-8954991, Tel: 63-2-8701741; Email: ez4u2nv_ph@yahoo.com]

Ms. Kathleen B. Almonte, Planning Officer III, Department of Environmental Services, City Government of Makati, G/F DES Office, Old Makati City Hall, J.P. Rizal Street, Población, Makati City 1200 [Tel/Fax: 63-2-8954991, Tel: 63-2-8701741; Email: kathleenalmonte@gmail.com]

PHILIPPINES (Puerto Princesa)

Ms. Jovenee Cawaling Sagun, City Planning and Development Coordinator, City Government of Puerto Princesa, Office of the City Planning and Development Coordinator, City Hall Building, Sta. Monica Heights, Puerto Princesa, 5300 [Tel/Fax: 63-48-433-2183; E-mail: jovenee_sagun@yahoo.com, jovenee@pto-princesa.com]

PHILIPPINES (San Fernando)

The Honourable Pablo Campos Ortega, City Mayor, Local Government Unit, City Government of San Fernando, La Union, 2500 [Tel: 63-72-888-6906; Fax: 63-72-888-6907; E-mail: pcortega-csflu@yahoo.com, csflu@sflu.com]

Mr. Valmar Marzo Valdez, City Environment and Natural Resources Officer, City Government of San Fernando, La Union, 2500 [Tel: 63-72-888-6901 los.110; Fax: 63-72-888-6906; E-mail: valmar_valdez@yahoo.com]

PHILIPPINES (Tacurong)

Mr. Alfredo Jr. Cabangal Ranido, Chief, Solid Waste Management Section, City of Tacurong, Mindanao, 9800 [Tel: 63-064-477-0440; Fax: 63-064-384-1824; Email: City_enro@yahoo.com]

Mr. Nemesio Jr. Legaspi Carigaba, City Environment and Natural Resources Officer, City of Tacurong, Mindanao, 9800 [Tel: 63-064-477-0440; Fax: 63-064-384-1824; Email: City_enro@yahoo.com]

PHILIPPINES (National Solid Waste Management Commission)

Ms. Emelita Causapin Aguinaldo, Deputy Executive Director, National Solid Waste Management Commission Secretariat, 2nd Floor HRD Building, DENR, Visayas Avenue, Diliman, Q. City, Philippines 1116 [Tel: 632 920 22 52, Mobile: 639157729091, Fax: 632 920 22 52/79; Email: emyaguinaldo@yahoo.com]

PHILIPPINES (League of Cities of the Philippines)

Mr. Andres Drexel y Bersalona Roque II, Environmental Officer/Programme Officer [Tel: 09205116783, (02) 9861712; Email: drexelroque@yahoo.com]

SECRETARIAT

**UNITED NATIONS ECONOMIC AND SOCIAL COMMISSION
FOR ASIA AND THE PACIFIC (UNESCAP)**

Mr. Masakazu Ichimura Chief, Environment Section, Environment and Sustainable Development Division, Economic and Social Commission for Asia and the Pacific (UNESCAP), United Nations Building, Rajdamnern Nok Avenue, Bangkok 10200, Thailand [Tel. (662) 288-1455 (Direct); Fax: (662) 288-1025 (Direct); E-mail: ichimura@un.org]

Ms. Sophie Bonjour Associate Environmental Affairs Officer, Environment Section, Environment and Sustainable Development Division, Economic and Social Commission for Asia and the Pacific (UNESCAP), United Nations Building, Rajdamnern Nok Avenue, Bangkok 10200, Thailand [Tel. (662) 288-1751 (Direct); Fax: (662) 288-1025 (Direct); E-mail: bonjour@un.org]

INSTITUTE FOR GLOBAL ENVIRONMENTAL STRATEGIES (IGES)

Ms. Peachie Ann Aquino Programme Officer, Institute for Global Environmental Strategies, 6F, Kitakyushu International Conference Center, 3-9-30 Asano, Kokurakita-ku, Kitakyushu, 802-0001, Japan [Tel: (81 93) 513-3711, Fax: (81 93) 513-3712, Email: aquino@iges.or.jp]

Secretariat

Ms. Tricia Yulo Matti, Human Resource Management Officer IV/City Administrator – Designate, City Government of Bago, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0807; Mobile: (63-917)301-4284 ; Email: ty_matti@yahoo.com]

Mr. Vicente Mesias, Supervising Environmental Management Specialist, Office of the City Mayor, Bago City Hall, A. Gonzaga Street, Negros Occidental, Philippines, [Tel: (63- 34) 461-0164; Fax: (63-34) 732-8036; Mobile: (63-917)-736-1034] [Email: jvicmesias@yahoo.com]

Mr. Benedict J. Kuey, Computer Maintenance Technologist I/HRMO I-Designate, Office of the City Mayor, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0807 ; Mobile: (63-917)762-6973 ; Email: nhoyze@yahoo.com]

Ms. Ma. Stella F. Dumaran, HRMO II, Office of the City Mayor, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0807 ; Mobile: (63-915)240-0384]

Ms. Rosemary A. Soguilon, HRM Assistant, Office of the City Mayor, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0807 ; Mobile: (63-919)292-1248]

Ms. Ma. Ronamie J. Torres, Hrm Assistant, Office of the City Mayor, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0807 ; Mobile: (63-928)785-5826]

Mr. Serlu S. Castro, HRM Assistant, Office of the City Mayor, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0807 ; Mobile: (63-919)367-7678 ; Email: bo.skyler@gmail.com]

Ms. Karen P. Florido, HRM Aide, Office of the City Mayor, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0807 ; Mobile: (63-906)224-4480 ; Email: krain151@yahoo.com]

Ms. Kristine Lou Balceda, Statistician Aide, City Social Welfare and Development Office, City Government of Bago, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-1160 ; Mobile: (63-916)561-3597 ; Email: mekriz_10@yahoo.com]

Ms. Kristine O. Gayoso, Clerk I, Office of the City Mayor, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0807 ; Mobile: (63-920)569-2389 ; Email: gayoso1022@yahoo.com]

Ms. Ingrid Joanne M. Espeleta, Clerk I, Office of the City Mayor, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0807 ; Mobile: (63-906) 512-4205 ; Email: crizziah@yahoo.com]

Mr. Edmund Chris S. Acosido, Clerk I, Office of the City Mayor, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0164 ; Mobile: (63-915)505-3798 ; Email: ec_acosido@yahoo.com]

Ms. Aprile Jam David, Clerk, Office of the City Mayor, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0164 ; Mobile: (63-920)606-7250 ; Email: aj09david@yahoo.com]

Mr. John Paul L. Balasa, Utility Worker I, Office of the City Mayor, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0807 ; Mobile: (63-915)331-1951]

Ms. Chitanell S. Luna, Utility Worker I, Office of the City Mayor, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0807 ; Mobile: (63-910)541-9726]

Ms. Remia Obando, Utility Worker I, Office of the City Mayor, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0164 ; Mobile:(63-919)611-0334]

Ms. Juanito Lila, Utility Worker I, General Services Office, City Government of Bago, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-1160 ; Mobile: (63-919)415-2847 and (63-921)529-2332]

Mr. Andrew A. Delfin, Casual Laborer, Office of the City Mayor, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0807 Email: delfinandrew@yahoo.com]

Mr. Methusam F. Montias, Casual, Office of the City Mayor, City Government of Bago, Bago City, Negros Occidental, 6101, Philippines [Tel: (63-34)461-0807 ; Mobile: (63-915)910-7194]
