

PRESENTATION AT THE REGIONAL 3R FORUM IN ASIA

TOWARDS A RESOURCE EFFICIENT, SOUND MATERIAL-CYCLE SOCIETY
MEGURO GAJOEN, TOKYO, JAPAN

BY:

EMELITA C. AGUINALDO
DEPUTY EXECUTIVE DIRECTOR

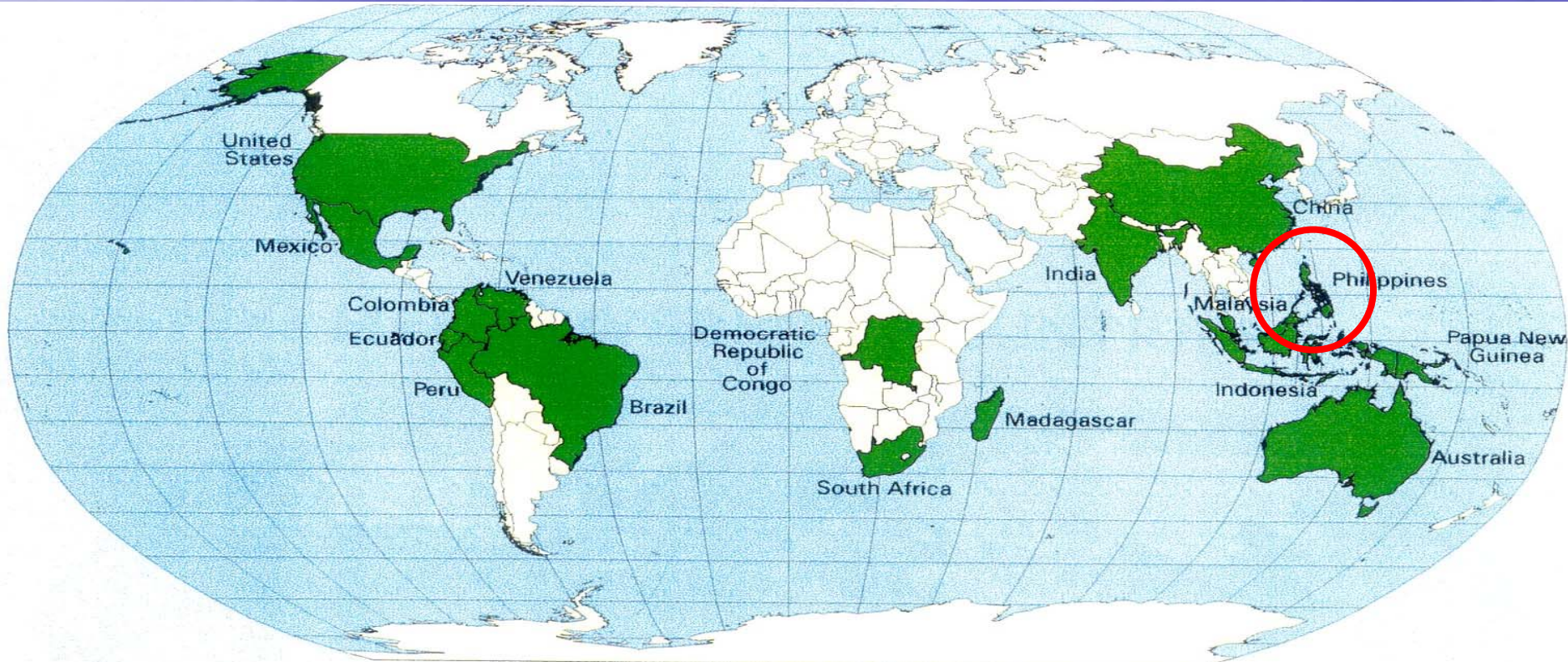
REPUBLIC OF THE PHILIPPINES
National Solid Waste Management Commission

OUTLINE OF THE PRESENTATION

- ABOUT THE PHILIPPINES
- FEATURES OF THE PHILIPPINES REPUBLIC ACT NO. 9003 – THE ECOLOGICAL SOLID WASTE MANAGEMENT (ESWM) ACT OF 2000
- NATIONAL FRAMEWORK PLAN FOR THE INFORMAL SECTOR ON SOLID WASTE MANAGEMENT
- EXISTING ESWM PRACTICES
- CONCLUSION

The PHILIPPINES

One of 17 mega-diverse countries in the world



- Containing two-thirds of the earth's biodiversity
- 70-80 % of the world's endangered species



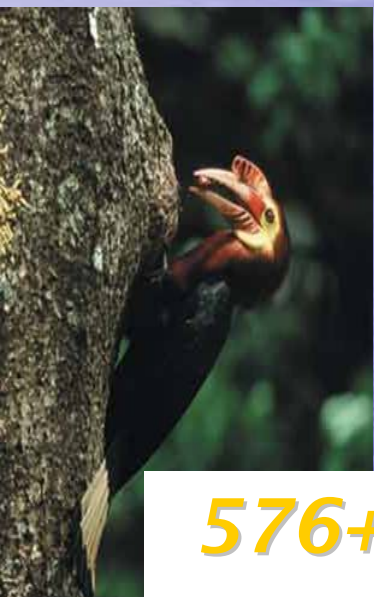
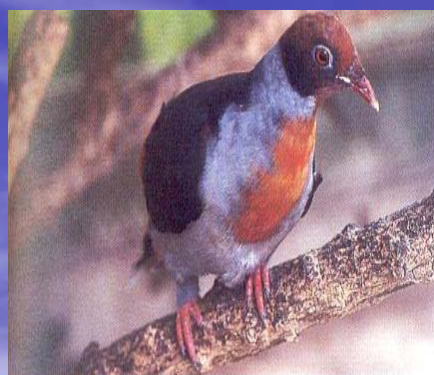
estimated 15,000 species, 50% are endemics



70 – 80% Flowering plants



193 Threatened species



**576+ species of
Birds**



**195 species
are Endemic**





Verde Island Passage Marine Corridor **(Sulu-Sulawesi Marine Ecoregion)**



**Center of the center of marine shorefish
diversity in the world**

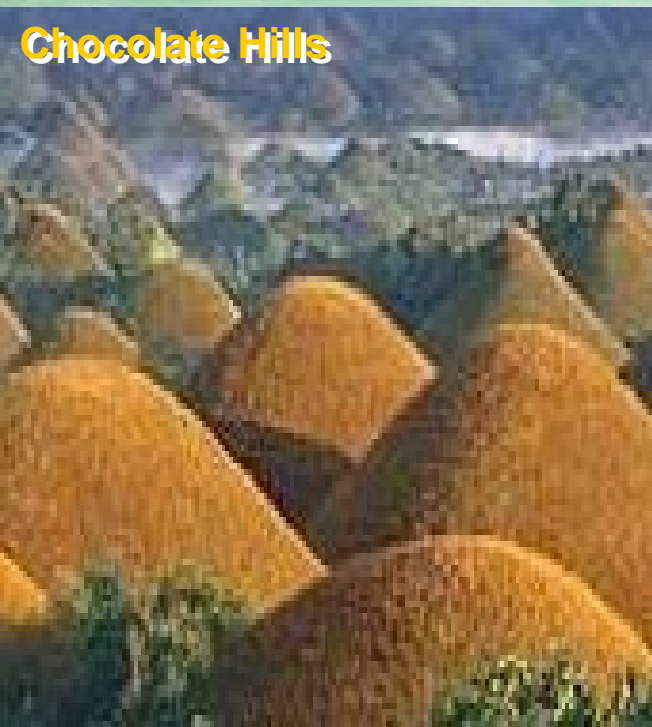




Puerto Princesa Subterranean River National Park



Mayon Volcano



Chocolate Hills



Tubbataha Reef

Candidates for the
**NEW 7 WONDERS
OF THE WORLD**

PHILIPPINES



- ➔ **Philippines: largely urban with over 50% of people living in urban areas; expected to reach 60 - 65% in 15 years**
- ➔ **Urbanization growing at fast rate with some local government unit unprepared to properly manage --- leading to congestion, illegal settlements, traffic, environmental degradation (land, air & water pollution)**

Solid Waste

Most visible environment problem



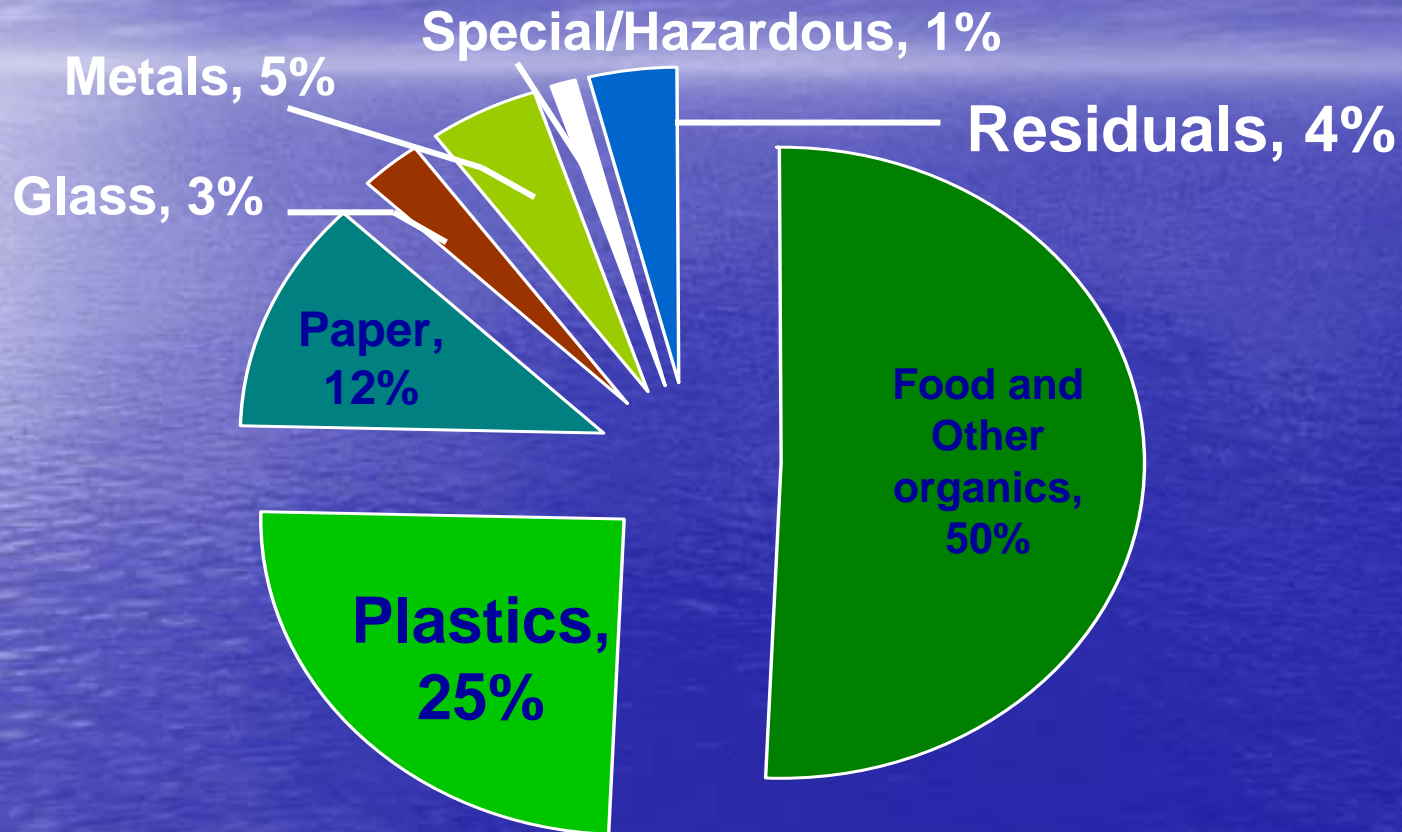
- Total annual generation
Nationwide : 30,000 tons/day (675 tons of methane gas everyday)
- Metro Manila : 8,000 tons/day (26.6%)
- Projected to increase by 40% in next decade
- Mostly from households and Commercial establishments

Generation:

Urban areas - 0.50-0.70 kg/capita/day

Rural areas - 0.30 kg/capita/day

Solid Waste Composition



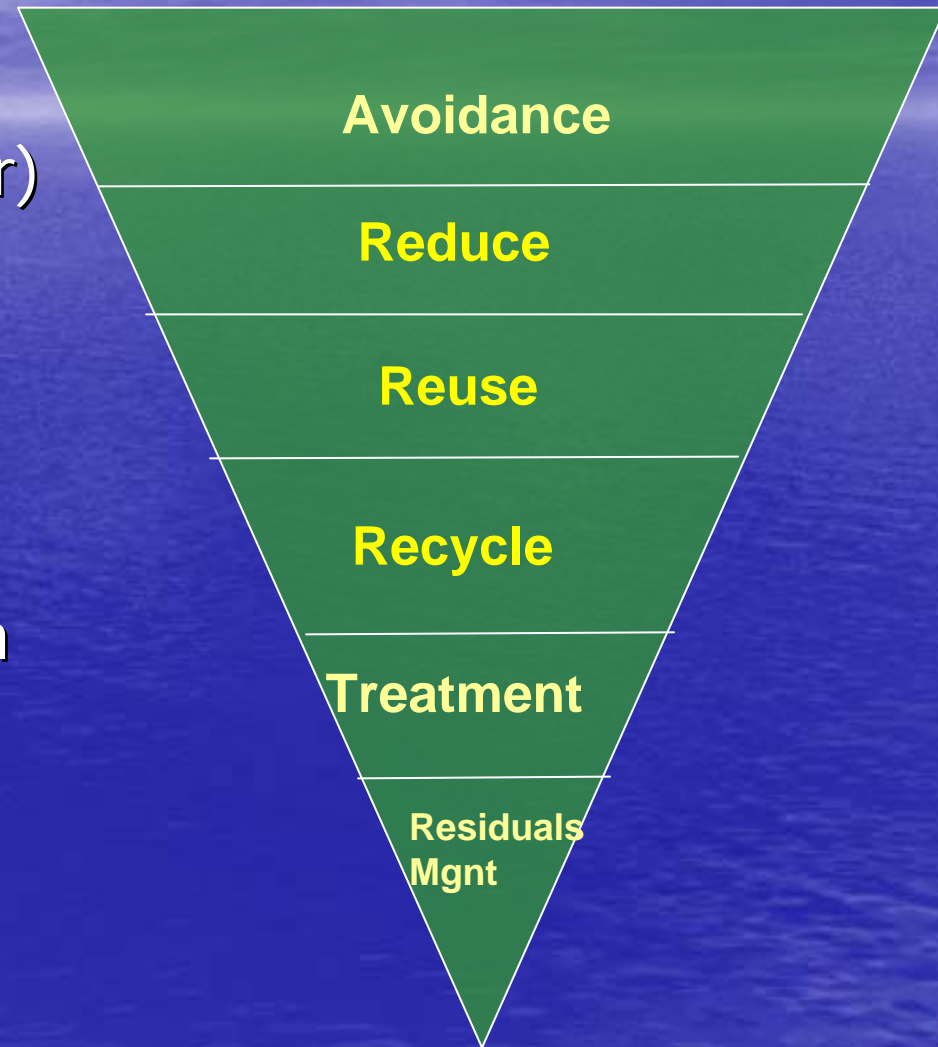
Republic Act 9003: The Ecological Solid Waste Management Act of 2000

- institutes measures to promote a more acceptable system which corresponds to the vision of sustainable development.
- aims to merge environmental protection with economic pursuits, recognizing the re-orientation of the community's view on solid waste, thereby providing schemes for waste minimization, volume reduction, resource recovery



ECOLOGICAL SOLID WASTE MANAGEMENT ACT OF 2000

- Mandatory segregation at source (section 21 ra 9003)
- Mandatory segregated collection; section 1 rule x, irr)
- Establishment of materials recovery facilities; (section 32 ra 9003)
- Closure/conversion of open dumps to cdf (sec.37) final disposal systems



ROLE OF THE LGU

- ❖ primarily responsible for the implementation and enforcement of the provisions of this Act within their respective jurisdictions
- ❖ barangay level shall conduct segregation and collection of solid waste for biodegradable, compostable and reusable wastes
- ❖ municipality or city shall be responsible for the collection of non-recyclable materials and special wastes

Sec. 20, RA 9003 mandates 25% Waste Diversion by LGUs

Executive Order 774 and 785

- provides for 50% reduction of waste generation within 6 months.
- development of a National Framework on Climate Change



Recycling rates in Metro Manila

Year	Recycling Rate
1997	6%
2000	13%
2002	25%
2006	28%
2009	31%

Unconventional indicators that the 3R initiative is gaining ground in the Philippines is the proliferation of junkshops that are upgrading their level of operation into MRFs.

National Solid Waste Management Program (RA 9003)

1. Reduction of Wastes Being Generated
2. Reduction of Wastes to be Disposed,
via:
 - a. Recycling
 - b. Composting

*Undertaken through Materials Recovery
Facilities (MRF)*
3. Safe Disposal of Residual Wastes (e.g.
Sanitary Landfill/Eco Park)

Objective: "Zero Basura"

Waste Segregation

Solid Wastes



Segregation at Source



STATUS

**Mandatory Requirement of RA 9003:
25% waste reduction through
recycling and composting by 2004
(through Materials Recovery Facilities
or MRFs).**

	MRFs Establish ed	Baranga ys Served	Rate of Complian ce
Nationwide (42,000 barangays)	5,070	5,508	13.11%
Metro Manila (1, 695 barangays)	684	698	41.2%

Status of waste reduced: Metro Manila – 30.99%

Informal Waste Sector

- are individuals, families, groups or small enterprises engaged in the recovery of waste materials with revenue generation as the motivation either on a full-time or part-time basis.
- work without any formal recognition by any government accreditation, licensing or regulating agency. Some of them work for licensed waste-related enterprise but are not legally employed by the owner of the enterprise.
- have no social and economic security and work under substandard and unhealthy work conditions, and have limited access to basic services.



Hierarchy of the Informal Waste Sector Recycling



<p>Highest Value</p>  <p>Lowest Value</p>	Importers of Recyclable Materials
	Recycling Industries
	Brokers, wholesalers/consolidators
	Big Junkshops
	Medium and Small Junkshops
	Itinerant Waste Buyers
	Garbage Crew or Paleros
	Jumpers
	Waste reclaimers

Development of a National framework Plan for the Informal Sector in Solid Waste Management

“joint project between NSWMCS and the Asian Institute of technology/United Nations Environment Program Regional Resource Center for Asia and the Pacific in collaboration with the Ministry of Environment Japan, Institute of Global Environmental Strategies and the United Nations Centre for Regional Development.

- June-December 2008**

Key Issues and Challenges Confronting the Informal Waste Sector

- For the informal waste sector, the key issue is economic, although the sub-sectors have differing issues
- For the waste reclaimers, jumpers and paleros, the most critical economic issue is survival. With increased public consciousness about the economic value of their recyclable waste materials, waste generators divert these materials for sale to itinerant waste buyers and/or junkshops.
- For the itinerant waste buyers, the most pressing issue is lack of secured access to sources of waste materials.
- At the macro level, the ups and downs of market demand for post consumer materials by recycling industries here and abroad directly impacts on the informal sector.
- At the national level, the concentration of recycling industries in a few cities across Luzon, Visayas and Mindanao also affect the buying and selling prices of post consumer materials

Vision

An empowered informal waste sector that is recognized as a partner of the public and private institutions, organizations and corporations in the promotion and implementation of the 3Rs (reduce, reuse and recycle) of solid waste management in the Philippines with the end in view of alleviating poverty.

Mission

To integrate the informal sector in the SWM system by providing them with a favorable policy environment, skills development and access to a secured livelihood, employment and social services.

National Framework Plan for the Informal Sector in Solid Waste Management

The four interventions that is based on the systems approach*are:

- 1.Supporting waste reclaimers to enter new service roles in collection and recycling;
2. Assuring waste reclaimers access to sorting space at transfer stations, controlled and sanitary landfills
- 3.Supporting better market leverage
- 4.Opening channels of communication with formal stakeholders and decision-makers into the planning process.

In addition to the above mentioned interventions, environmental and occupational safety is also necessary since the informal waste sector work under very unsafe and environmentally unsound conditions.

*Scheinberg et al (2006) as cited by Wilson (2007):

Proposed Interventions and Strategies and Critical Actors and Partners

Proposed Interventions	Proposed Strategies	Critical Actors & Partners
Supporting waste reclaimers to enter new service roles and niches in separate collection, recycling and composting;	<ul style="list-style-type: none"> • Provide skills training on value adding strategies/low cost technologies in waste recovery and recycling and composting • Facilitate linkages of informal sector and recycling cooperatives to professionals with expertise in product design • Organize job fairs for the informal sector • Facilitate scholarship programs or access to alternative learning system programs • Conduct health and occupational safety seminars for the informal waste sector 	<ul style="list-style-type: none"> • Informal waste sector • LGUs (including the Leagues) • NGAs (TESDA, DTI, CDA, DOST-ITDI, DOLE) • NGOs

Proposed Interventions and Strategies and Critical Actors and Partners

Proposed Interventions	Proposed Strategies	Critical Actors & Partners
Assuring structural access to sorting space at transfer stations, materials recovery facilities, composting facilities and sanitary landfills;	<ul style="list-style-type: none"> • Intensify the dissemination on the importance of protective equipment and apparel • Integrate the informal waste sector in the transfer stations and materials recovery facilities of the LGUs • Tapping of informal waste sector in commercial scale composting projects 	<ul style="list-style-type: none"> • Informal waste sector • LGUs (including the Leagues) • Private companies

Proposed Interventions	Proposed Strategies	Critical Actors & Partners
<p>Opening channels of communication with formal stakeholders and decision-makers and into the planning process.</p>	<p>Include an informal sector waste management plan in the Ten Year Strategic SWM Plan and Yearly Action Plans of LGUs</p> <ul style="list-style-type: none"> • activities for LGUS on integrating the informal waste sector in their SWM Planning Process • Include the informal waste sector in the planning and monitoring of SWM systems through its associations or cooperatives 	<ul style="list-style-type: none"> • LGUs (including the Leagues); SWM boards • NGAs (DSWD, TESDA, DepED, DILG, UDHA, NHA, PIA) • Media

Proposed Interventions	Proposed Strategies	Critical Actors and Partners
<p>Supporting better market leverage and/or diversification of activities through cooperatives and associations</p>	<ul style="list-style-type: none"> •Organize informal waste sector into associations or cooperatives •Formulate of National Guidelines on transfer and transport of recyclable materials to avoid harassment of transporters of recyclable materials and facilitate efficient movement of materials •Provide business incentives for junkshops/consolidators •Link the informal waste sector to microfinance institutions •Provide market support such as price information and monitoring 	<ul style="list-style-type: none"> •Informal waste sector •LGUs (including the Leagues) •NGAs (DENR-NSWMC, DTI, DILG, PIA, Cooperative Dev. Authority) •National Legislators (Senate and Congress) •Media

Proposed Interventions	Proposed Strategies	Critical Actors & Partners
------------------------	---------------------	----------------------------

Improving the work conditions through the implementation of environmental and occupational safety practices and systems	<ul style="list-style-type: none"> • Formulate Code of Practice for materials recovery facilities and Junkshops that ensures environmental and occupational safety • Conduct occupational safety seminars for the informal waste sector • Adhere strictly to the enforcement of Child Labor Law 	<ul style="list-style-type: none"> • NSWMC • DOLE • LGUs
---	--	---



SUSTAINABLE PROGRAMS IN RECYCLING: Materials Recovery facilities



National Solid Waste Management Commission

SUSTAINABLE PROGRAMS IN RECYCLING: Materials Recovery facilities



National Solid Waste Management Commission

BEST PRACTICES



Segregated collection of biodegradable waste.

Sto. Tomas, Davao del Norte



- No Segregation, No Collection
- No Orientation & Implementation of ESWM, No Issuance of Municipal Permits
- Municipal-wide Composting & Livelihood Projects

Bago City Negros Occidental

Takakura Market Waste Composting in Bago

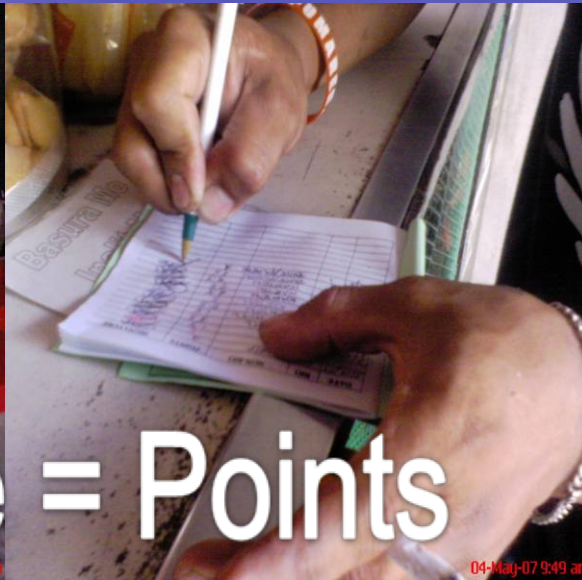


1. Native Microorganism are bred to multiply
2. NMs are mixed with biodegradable waste during shredding

Barangay Bagumbuhay



Garbage = Points



04-May-07 9:49 am



Detergent



Medicine

Points =



Coffee



Rice



May Pera Sa Basura

*There's money in
garbage*

- Finished products



Finished Products from residual wastes - Paving blocks/tiles





Mixed Plastics

The Bioreactor- this is where kitchen and food leftovers are processed.



The leftovers will turn into soil conditioner.



RECYCLED PRODUCTS

Paper



Doy Packs





Mixed Plastics



RESIDUAL WASTE MANAGEMENT

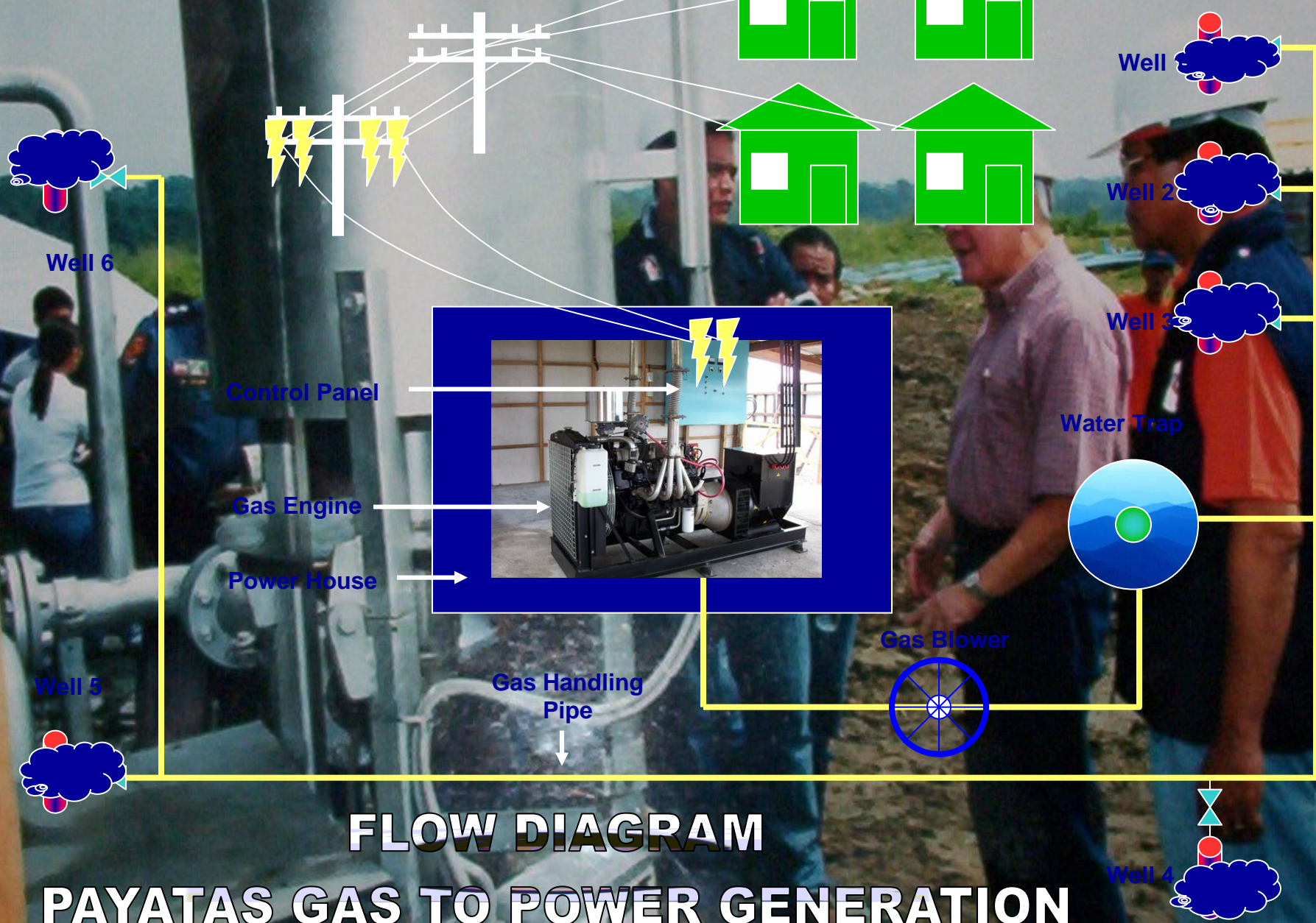
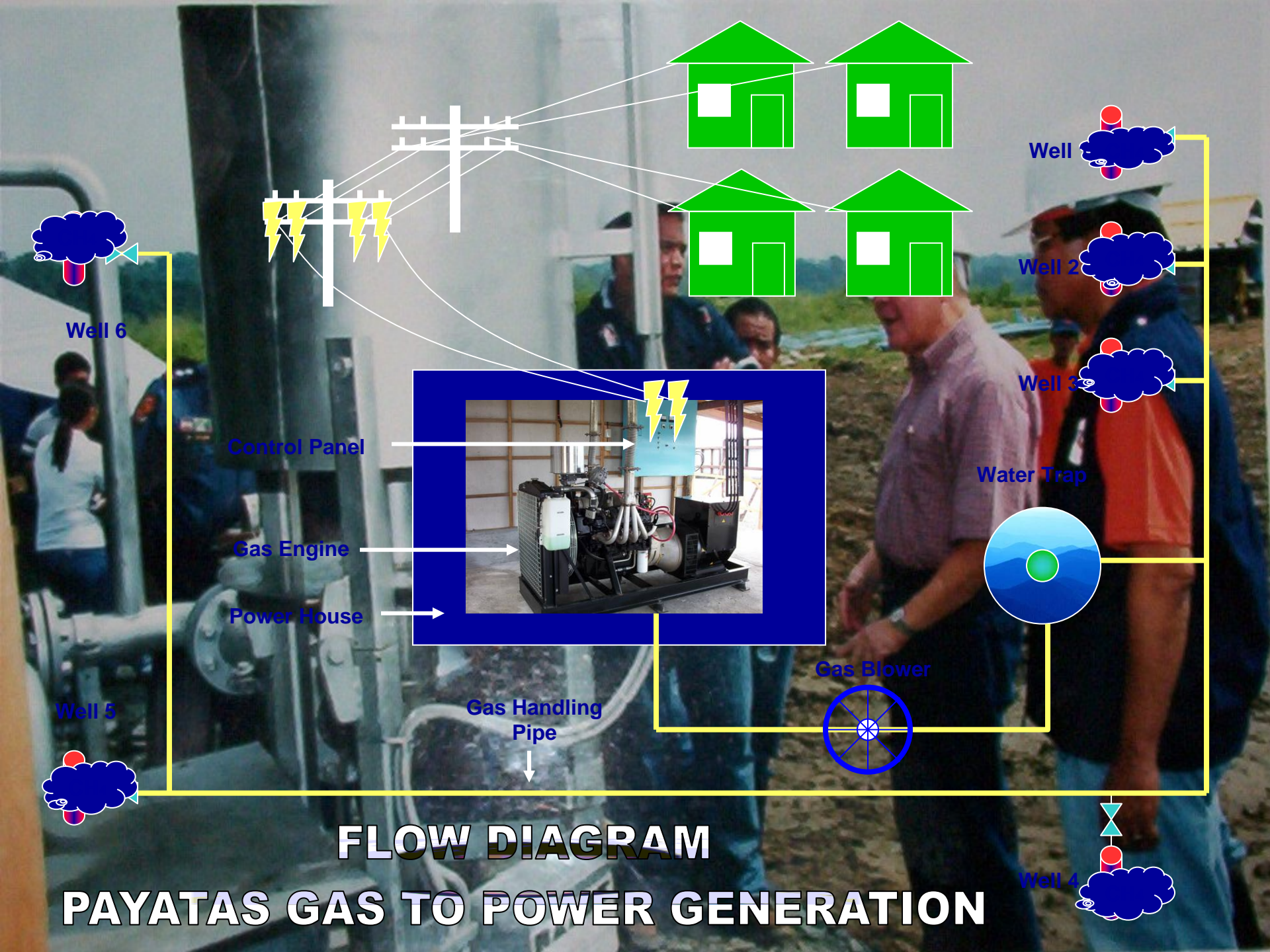
BEST PRACTICES IN THE MUNICIPALITY OF TERESA PROVINCE OF RIZAL



Quezon City, Metropolitan Manila



Pioneering LGU in Dumpsite Conversion with Methane Recovery for Power Generation



FLOW DIAGRAM

PAYATAS GAS TO POWER GENERATION

STATUS

1. Reduction of Wastes Being Generated

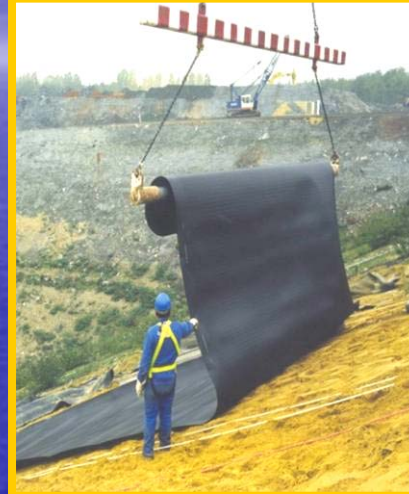
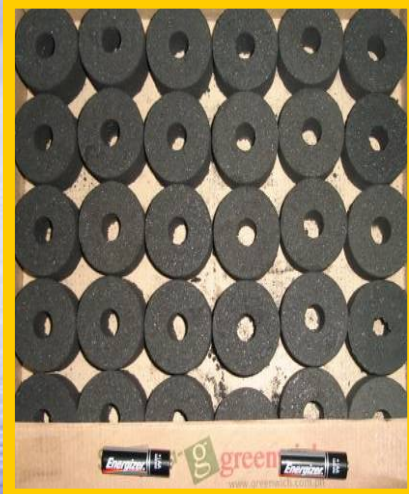
a. Advocacy



b. Information, Education and Communication Campaign



ALTERNATIVE TECHNOLOGY



CONCLUSION

Factors for successful implementation:

- Strong Political Will
- Massive and Continuous Information, Education and Communication Campaign
- Provision of proper policy guidelines and enforcement mechanism
- Allocation of Resources
- Provision of incentives

ARIGATO GOSAIMASU
THANK YOU
and
MABUHAY!!!