IMPLEMENTATION OF 3Rs IN THE PHILIPPINES

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DENR
CURRENT SITUATION OF 3R ACTIVITIES IN THE PHILIPPINES
RECYCLING RATES
Metro Manila (Philippines)

1997 – 6%
2000 – 13%
2003 – 25%

During this period, the Federation of Multipurpose Cooperatives in Metro Manila (an association of junk dealers) has tripled its trade of recyclable goods from 69,400 MT to 209,770 MT, with value increase from PhpP95 Million to Php268 Million. Recovery Rate through secondary sorting prior to final disposal is 25-30% at the Rodriguez, Rizal CDF.

Nationwide Recycling Rates are also increasing with better LGU compliances with Republic Act No. 9003.
NATIONAL LEGISLATION ON THE 3Rs

Republic Act No. 9003, “The Ecological Solid Waste Management Act”

1. Sets the mandatory waste diversion goal of at least 25% by 2006 and progressively increasing every 3 years thereafter.
2. Mandates Segregation-at-Source and Segregated Collection of Household Waste
Republic Act No. 9003

4. Mandates the Eco-Labeling eventual prohibition of Non-Environmentally Acceptable (NEA) Products and Packaging Materials

5. Mandates all government personnel to increase acquisition of environmentally preferable products and services to the extent feasible consistent with price performance, availability and safety considerations.

President Gloria Macapagal-Arroyo issued Executive Order No. 301 to establish and implement a Green Procurement Program for the entire Philippine Government.
Republic Act No. 6969 “The Toxic, Hazardous, and Nuclear Waste Control Act

- Encourages proper management of hazardous wastes generated within the country by promoting, in order of preference:
  a. Minimization of hazardous waste generation;
  b. Recycling/Reuse of hazardous waste;
  c. Treatment of hazardous waste to render it harmless;
  d. Landfilling of inert residual hazardous waste
DAO 94-28 (Interim Guidelines for the Importation of Recyclable Materials Containing Hazardous Substances)

Hazardous substances which are allowed for importation:
- scrap metals
- solid plastic materials
- electronic assemblies and scrap
- used oil
- used lead-acid batteries
- fly ash

Hazardous wastes may be exported for treatment/disposal only to Basel Convention countries.
ACTIVITIES FOR THE PROMOTION OF THE 3R’s
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1. Establishment of Materials Recovery Systems & Nationwide Search for Model MRFs. As of December 2005, 1103 MRFs serving 1314 barangays have been established nationwide.

2. Industrial Waste Exchange Program (IWEP)

3. Green Procurement Program in all Government Agencies (E.O.31)

4. Eco-labeling Program, with existing guidelines on the ff: Synthetic Laundry Detergents, Tissue Paper Products, Zinc Carbon & Zinc Alkaline Manganese Dioxide Batteries, Polyethylene and Polypropylene Packaging Materials, Automotive Engine Oil, Printing and Writing Paper

6. Holding of annual Recyclables Collection Event by NGOs and business during Earth Day Celebration.

7. Enacted an Ordinance Banning the Use of Plastic in Department Stores.

8. Industrial Eco-parks.

ACTIVITIES FOR THE PROMOTION OF THE 3R’s

10. Polystyrene Packaging Council of the Philippines set up recycling plants and recovered 8000 cu.m in 2003

11. Coca Cola Bottlers Phils. Inc. recovered non-returnable but recyclable soda containers. 4.1 million aluminum cans and 3 Million PET containers have thus far been recovered.

12. San Miguel Corporation Recovers PET Bottles from public schools in Metro Manila

13. The draft guidelines on Extended Producer Responsibility (EPR) are presently on sectoral consultation prior to adoption.
14. Advocacy campaign to improve the recovery and recycling of used lead-acid batteries.

300,000 batteries per year allocation. This is equivalent to 1.2 Million liters of sulfuric acid electrolyte and 3600 metric tons of lead prevented from polluting the environment.

- 2001: 7 tons
- 2002: 7 tons
- 2003: 204 tons
- 2004: 398 tons
Supporting Organizations

1. National Solid Waste Management Commission
2. DENR
3. DOST
4. BOI-DTI
5. Clean and Green Philippines
6. Green Choice Philippines
7. Philippine Business for the Environment
8. Linis Ganda
9. SWARMPlan
10. National Ecolabelling Program Board
11. Philippine Recyclers Inc.
Promotion of Science and Technology
RECYCLING OF BIODEGRADABLE WASTES

- Horizontal rotating drum reactor
- Aerated System
- Approximately 1 ton/day capacity
- Electrically-driven
- Semi-continuous operation
- Forced-air circulation
- Manual or automatic process control
VERMICOMPOST

Organic fertilizer or soil enhancer produced from wastes through the action of earthworms
Bio-gas Technology

Conversion of organic wastes into energy and bio-fertilizer by anaerobic process.
RECYCLING OF BIODEGRADABLE WASTES

Cooking: An LPG modified double burner biogas stove

A hybrid 5 hp biogas run generator

Lighting: An LPG modified mantle lamp
TECHNOLOGIES FOR MANAGEMENT OF RECYCLABLES
RECYCLING OF STYROPOR

Process Flow

Melting

Table Top Mold

Molding

Styropor

Melting Unit
Recycling of Various Aluminum foil packaging laminates

Fine Grind Milo packaging
Injection Molding

HDPE Virgin Resin pellets
Injection Molded sample products
GLASS RECYCLING
BATTERY LIFE CYCLE

USE OF BATTERIES BY CONSUMERS

PRODUCTION OF NEW BATTERIES FROM RECYCLED LEAD

DISCARDED BATTERIES

RECYCLING OF BATTERIES TO PRODUCE LEAD
Creative Recycling for DOY Packs!

FINISHED PRODUCTS
TIN CAN RECYCLING

used tin cans → Pressing → Rust-removing → Lid-making (can cover) → Seaming → Finished Products
Electronics Recycling through Demanufacturing

- Utilization of a non-destructive process called demanufacturing
- Reusable parts or recyclable materials can be recovered.

Dismantled

- Recovered parts
  - Test/ Clean/ Package
    - For Resale
- Recovered materials
  - Further Processed
    - For Recycling
PROBLEMS ON IMPLEMENTATION OF 3Rs

1. Cost of Recycling Process is higher than cost of using virgin raw materials.
2. Lack of market for compost and recycled materials
3. Lack of supply of recyclable materials to be used as raw products. Some manufacturers import secondhand/waste paper and plastics
4. Lack of information
5. Lack of cooperation
6. Lack of major recyclers outside Metro Manila
TRANSBOUNDARY MOVEMENT OF RECYCLABLE RESOURCES AND REMANUFACTURED GOODS
PROBLEMS ON TRANSBOUNDARY MOVEMENT OF RECYCLABLE RESOURCES AND REMANUFACTURED GOODS

- Mis-declaration of waste as recyclables.
- Being an archipelago with 7,103 islands, smuggling of electronic and electrical waste appliances.
- Imported Secondhand vs. locally manufactured vehicles.
PRIORITY AREAS FOR THE IMPLEMENTATION OF THE 3R INITIATIVE
PRIORITY AREAS FOR THE IMPLEMENTATION OF 3Rs INITIATIVES

- Eco-labeling and EPR
- Adoption of NEAPPM list
- Nationwide networking of formal and informal recyclers
- Fiscal and Non-Fiscal Incentives for recycling and use/promotion of recycled goods
- Lowering domestic transport costs of recycled and recyclable wastes
- Curb smuggling of E-waste and used vehicles
INTERNATIONAL COOPERATION ACTIVITIES

1. Industrial Waste Exchange Program (Canada, US-AEP)
2. Implementation of Pilot Projects
   Community-Based Ecological Solid Waste Management Project (UNDP, Japan fund)
3. Clean Development Mechanism
   Waste to energy (Methane Recovery Project in Payatas CDF)
Waste no more . . . .

Waste no time!

MARAMING SALAMAT PO !!!

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