Contents:

1. **3R Implementation**:
   - Surabaya, Jakarta & Bandung City $\rightarrow$ MSW
   - Composting Subsidy Program $\rightarrow$ MSW
   - Micro & SME’s $\rightarrow$ reduced/saved water & reuse methane gas

2. **Measures for Establishing the 3R – based Society**

3. **Current Issues**

4. **Formulation of National 3R Strategy**
Environment Program: Surabaya & Jakarta Case
Waste Management Concept

- Domestic garbage
- Organic garbage (70%)
- Non-organic garbage (30%)
- Recycle (26%)
- Non-recycle (4%)
- Final Dumping Site (80%)

Waste segregation

Compost processing

Project Litterbug

The role of environment Cadres
Surabaya & Jakarta Programs:

- Training for Environment Cadres
- Technical Assistance for local community in technology and environmental programs
- Rehabilitation of waste management infrastructure/facilities and sanitation
- Greening programs
- Environment campaign through media
- Evaluation and monitoring of the program

Key Success Factor of Project:

1. 3 (three) R Concept
2. Strong Understanding about the real problem
3. Cadres Development
4. Hub Creation

Motivator

Cadres: “Mobilize Community as The Agent of Change”
Environment Program through Cadres

10-20 Houses = 1 cadre

Program:

Garbage Segregation & Processing = REDUCE 96%

- Organic 70%
  - 1 - 2 household compost unit
  - Transferred into communal composting
- Anorganic Recycle 26%
  - Non-organic garbage collection

“Mobilize Community as The Agent of Change”

Greening

- Medicine trees
SUCCESS STORY
Major Progresses of Replication

SURABAYA
No of Cadres

No of RTs

JAKARTA
No of Cadres

No of RTs
3R’s Implementation in Bandung City

- **Garbage sliding** (February 2005) → Social conflict → No landfill site → emergency situation ("mountain"/stack of garbage in many parts of the city)
- **A collaboration** (MoE, Dept of Public Work, provincial govt, local govt and local community) to cope emergency situation → temporary dump site
- **Comprehensive measures** in managing domestic solid waste for the greater Bandung, based on 3R principle
- **The main objective** is to reduce the volume of solid waste inside the city prior transferring them to final treatment
- **The main measures**:  
  - segregation at sources  
  - transfer to clustered plant for further segregation and crushing  
  - transfer to producers of recycle center for composting as well as other recycle measure (paper and plastic).
- **December 2006’s estimation**: reduce the waste up to 30%
Plan for the 3R’s Implementation in Bandung City

Total waste collected: 3200 m³/day

Sarimukti Landfill Site

Residual (10%), 70 m³/day

Crushed Organic (180 m³/day)

Compost Producers

Crushed Non organic (80 m³/day)

Recycle Producers

Zone

Clust. Ciroyom 131 m³/d
Clust. Astanaanyar 127 m³/d
Clust. T. Cibeunying 120 m³/d
Clust. Tegalega 117 m³/d
Clust. Psr Cicadas 108 m³/d
Clust. Psr Gedebag 122 m³/d

Compost (50 tones/day)

Residual (10%)

70 m³/day

725 m³/day

2475 m³/day

Total waste collected:

3200 m³/day
3R’s Approach in Bandung

Sources (Houses, Markets, Offices, Terminals etc.)

TPS (Temporary treatment site)
Small cluster

TPS (Temporary treatment site)
City Zones

TPA (Final Treatment)

• Community/sources based management → Reduce, segregation, composting, recycle
• Incentive by local government, eg:
  • To buy a compost
  • To give equipment or facilities
• Using the principles of no service no money, no waste no charge

Solid waste management by local government (note: subject to cooperate with private sector)
• Segregation
• Composting
• Recycle
• Incinerator → energy
• Sanitary Landfill → Methane capture and energy (CDM)

Target Line of Solid Waste Volume

100%

80-90%

60-70%

50-60%

20-40%

Local Community – NGO – Local Govt. – Provincial. Govt – Central Govt

Involvement Intensity
Composting Subsidy Program

- In 2004-2009, GEF through the World Bank give grant of **US$10 million** to support the project of MSW composting subsidy;
- The project has **produced 217 tones/day** compost which is exceed the target of 200 tones/day and involved **45 compost producers** (mostly small scale enterprises);
- Potentially can **reduce emission of 12,500 Ton of methane gas**;
- This project could be **a model to promote 3R’s implementation** in the community and local level.
The number of Micro & SME’s in Indonesia is 41 million;
99% of which are micro and small enterprises.
Micro enterprises / home’s industries are almost 30 million units:
- Represent of 99.4% employment
- Contribute 56.7% of GNP (annual growth rate 2.4%)
- Contribute 19.35% of national’s export
Micro and SME’s

- Electroplating, Textile Product (Batik), Slaughter House, Tapioca, Tofu (Soya bean curd), etc
- **3R’s implementation in Tofu Traditional Industries:**
  - Total Number of Tofu Industries: **43,415 units** need 32 million tones of Soya bean/year
  - **Total use of water:** 640 millions litter/year
  - Enhancing good housekeeping → **save water up to 46%** or potentially 300 millions litter/year
  - Alternatives of 3R measures:
    - **Reuse/recycle of solid waste/residue:** Animal feed, Sauce, Tofu Crackers, Nata de Soya (Jelly bean) and various foods
    - **Waste water treatment → Bio gas**
      - 1 ton of Soya bean/day → 15,000 litter of biogas/day
      - Could serve demand of fuel for 8 households daily
      - Reducing the potential release of methane 10,000 litter/day
      - Total Tofu Industries **potentially reduce emission of 320 millions litter of methane gas per day**
Measures for Establishing the 3R - Based Society in Indonesia

Reduced, Reused & Recycled

Approaches to Establishing the 3R - Based Society (Framework for Action)

Law / Regulation
- Environmental Management Law (on revision)
- MSW Management Law (on process / final draft)
- Hazardous waste
- EIA
- Water Quality & Pollution Ctrl
- Technical Guidelines
- Standard

Incentive
- Program (Proper, ADIPURA)
- Eco Label
- Free Custom and Tax Holiday
- Soft loan
- Subsidy to Local Gov’t

Education & Campaign
- Training & Education
- Facilitating
- Public Campaign
- etc
MSW Management Act (draft)

MSW = Residue of human daily activities and / or of nature processes

Sisa kegiatan sehari-hari manusia dan / atau dari proses alam yang berbentuk padat.

OBJECTIVES

- To reduce MSW generation
- Towards well MSW Management (segregation, collection, transportation, and process in the Final Disposal)
- Towards healthy & clean environment
Current Issues

• **E-Waste**
  – Legal Aspects:
    • Government regulation on Hazardous Waste
    • Feasibility Study (on going)
  – Issues:
    • Pre-condition (reuse of some components) of product e.g. TVs, PCs, & Mobile Phone;
    • Illegal import of battery included in e-products e.g. Toys, Home Appliances

• **Food Waste**
  – Legal aspects: No particular regulation
  – Measures: Feedstock for fisheries, Compost
  – Issues:
    • Expired food particularly canned food
    • Food preservation substances are shifted to be more environmental friendly e.g. crab shells

• **Medical Waste**
  – Legal aspects:
    • Government regulation on Hazardous Waste
    • Health Ministerial Decree of Hospital Sanitary
  – Types of waste: Domestic, infectious, Pathological & Hazardous
  – Measures:
    • Guidelines on Medical Waste Management
    • Segregation, Incinerator
Formulation of National 3R Strategy*
(result of first Inception Meeting, 6-7 September 2006)

INSTITUTIONAL PROCESS AND MECHANISM

1. Members of Working group:
   - Central & Local Government → APEKSI (Association of Municipalities in Indonesia) & BKKSI (Coordinating Agency of Regencies in Indonesia)
   - Private : APIINDO (Entrepreneur Association of Indonesia), KADIN (Chamber of Commerce), AMC/CMA (Industrial Estate)
   - NGO : DML (Environmental Fund Partnership)
   - Research/Academic Body
   - BCRC (Basel Convention Regional Centre)

2. Responsibility and task of Working Group are:
   - Giving inputs/information/suggestions (regulations, programmes, case studies, report, best practice)
   - Review 3R strategy draft
   - Take a part in consultation meeting about draft strategy
   - Identify of 3R’s example project/activities.

* Sponsored/facilitated by UNCRD & IGES
## Formulation of National 3R Strategy

### INSTITUTIONAL PROCESS AND MECHANISM:

#### 3. Time Lines

<table>
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<tr>
<th>Activity</th>
<th>Timeline</th>
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<tbody>
<tr>
<td>Establishment of National 3R Working Group</td>
<td>Dec 06 – May 07</td>
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<tr>
<td>First Draft of National 3R Strategy (following the guideline)</td>
<td>Jan 07 – Feb 07</td>
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<tr>
<td>National Stakeholders meeting (consultation to review the first draft)</td>
<td>Mar – April 07</td>
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<td>Second draft of National 3R Strategy</td>
<td>June 07</td>
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<td>National/Expert Consultant</td>
<td>July 07</td>
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<td>Third draft of National 3R Strategy</td>
<td>September 07</td>
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<td>Review</td>
<td>Sep – Oct 07</td>
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<td>Final Draft</td>
<td>Nov 07</td>
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<tr>
<td>Ministerial Official endorsement</td>
<td>Dec 07 – Jan 08</td>
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<tr>
<td>donor’s meeting/ official launching of National Strategy</td>
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Formulation of National 3R Strategy

STRUCTURE AND CONCEPT

1. **Background/ Contexts:**
   - Social behaviour (domestic waste), equal partnership, regulations, etc

2. **3R’s Key Sectors and opportunities:**
   - Food & beverage packaging, SME’s, agro industry, waste movement from other country etc

3. **Strategy to promote:**
   - Training & education, international cooperation, pilot project, etc

4. **Action Plan:**
   - Resource mobilization & implementation arrangement, etc
Thank you

terimakasih

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