

# Solid Waste Management of Balikpapan

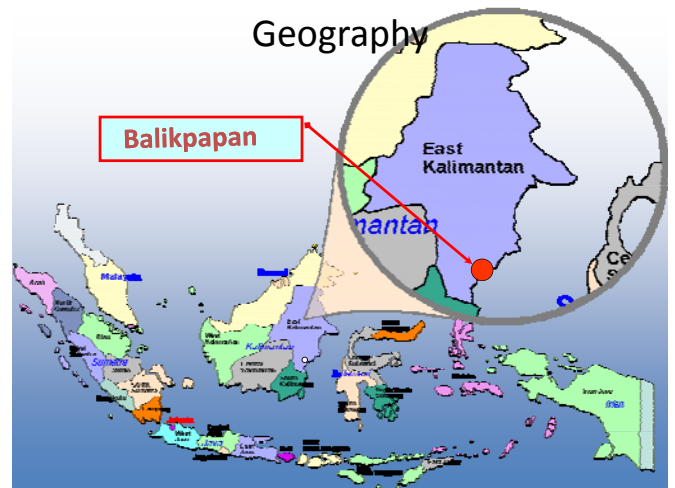
By City Government of Balikpapan

## Presentation Outline

1. Introduction to Balikpapan
2. Solid Waste Management Portrait
3. Recent and Future Strategy
4. Composting in Balikpapan
5. Lessons Learned
6. Summary

## Introduction to Balikpapan

## Geography



## Topography and Demography

-  Total Area of 503,33 km<sup>2</sup> (50.333 Ha)  
Bordering 2 other Municipalities
-  Topography : 85% hilly, 15% flat area
-  Soil Type: Red Podsols and Yellow-red Podsols & Silica Sand (vulnerable to land slide)
-  Population (2010): 614.681 people  
Growth rate: 4,52% per year  
(natural growth 1,56% and immigration 2,96%)

## Solid Waste Management Portrait

## General Overview

Waste disposal site with Sanitary Landfill system to minimize environmental impacts

International cooperation project (PFSAMAS) to reduce the amount of produced solid waste by 10% within 3 years

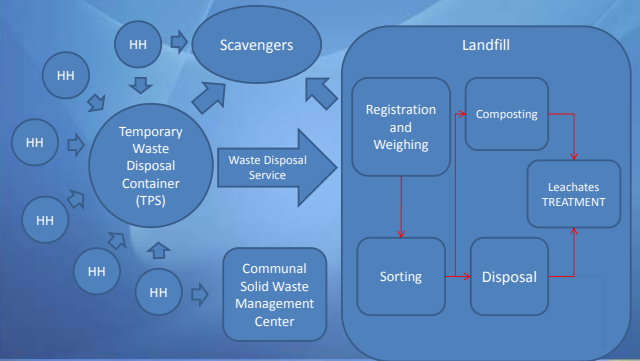
Improvement of legal aspects and law enforcement against littering

Raising environmental awareness through education and public campaign

Adjusting waste management principle to local characteristics to improve the effectiveness ("Trash Bank")



## Waste Disposal Mechanism



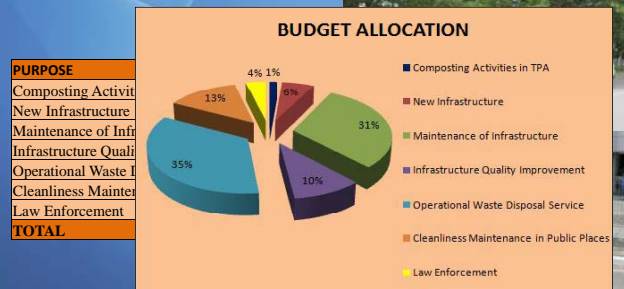
## Baseline Information (1)



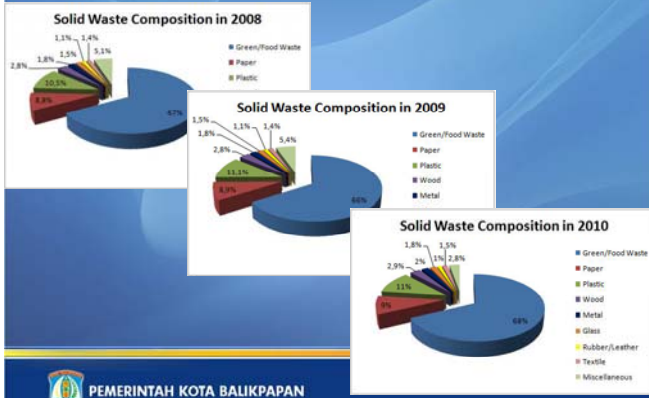
In 2010  
 Through Composting : 525 tons/month (app.. 3,98%)  
 Through Recycling : 564 tons/month (app.. 4,28%)  
 Through other uses : 86 tons/month (app.. 0,66%)

8,92%

## Baseline Information(2)



## Waste Characteristics



## Recent and Future Strategy (1)

VISION: Balikpapan as a clean, beautiful, and comfortable city

MISSIONS Up to 2015:

1. To improve the health quality of the sanitation worker and community in general
2. To improve community awareness and involvement on solid waste management and extend the capacity building in environmental management
3. To improve city cleanliness via integrated solid waste management until 2015 (CGH, 3R, communal composting program)
4. To cover the required infrastructure for solid waste management until 2015

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## Recent and Future Strategy (1)

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## Recent and Future Strategy (2)

Our PESAMAS = Pengelolaan Sampah Berbasis Masyarakat (Community-based Solid Waste Management)

Initial PESAMAS by JICA = Pengkomposan Berbasis Masyarakat (Community-based Composting Project)

Biodiversity Conservation

Environmental-sound Regulation

Sanitation

Balickpapan towards Environmentally Sustainable City

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## Recent and Future Strategy (3)

Progress, results or targets are achieved already

Landfill gas utilization in progress

Some behavior change have been observed to be more aware to the regulation regarding littering

Law enforcement operation from once a year to 4 times a year.

Total solid waste Reduction by 8,92% in 2010

Construction of new composting center, especially in the coastal residential area.

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## Recent and Future Strategy (4)

FUTURE PLANS

- To expand and promote composting center to be citywide
- To promote community solid waste management via "trash bank"
- To promote environmental education (for sustainable development)
- To improve the human resources via capacity building for the relevant stakeholders
- To increase public involvement on solid waste management.
- To promote environmental sustainability via various mass media.
- To improve law enforcement
- To implement reward and punishment mechanism.

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## Recent and Future Strategy (5)

Through Formal Education

Based on the concept of Education for Sustainable Development

Nationwide program with emphasizing environmental issues at the global to local level ("Mangrove High school" and "Rainforest High school")

To the recent date, 11 Schools in Balikpapan are officially appointed as "Adiwiyata School"

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## Recent and Future Strategy (5)

Through Non-Formal Education

Public counseling emphasizes on 3R concepts and practices, legal aspects

Manggar Landfill as an environmental education center emphasizes on solid waste issues

KWPLH as an environmental education centre with a special facility for malayan sun bear, also promotes composting

Well-run Composting Centers as learning places

# Composting In Balikpapan



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## Composting in Balikpapan (1)

Name of Program/Project/Activity	Scale	Initiator	Since	Annual Budget (IDR)	Composting Method
Community composting project at Telaga Sari	Neighbourhood	NGO	2003	50.000.000,00 IDR	Talabara and aerobic composter
Composting activity at Sanitary Landfill Manggar	Citywide	City Government	2005	483.386.640,00 IDR	Wind row
Community composting program at Praputan-Telapayan	Sub-district	Multistakeholders	2006	125.000.000,00 IDR	Staged Talabara
Community composting program Pongasin	Neighbourhood	Provincial Government	2009	no data	Wind row
Household and Community composting project	Citywide	City Government	2008	1.000.000.000,00 IDR	Talabara
Community composting project in 3 traditional markets	Citywide	City Government	2009	956.000.000,00 IDR	Wind row
Household composting project for residential area in Sepiagan	Household	Provincial Government	2008	no data	Talabara
Household composting project for residential area in Gunung Samarinda	Household	NGO and Private Sector	2008	100.000.000,00 IDR	Talabara

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## Composting in Balikpapan (2)

Partners	Role
Chevron	Donor via CSR
Total	Donor via CSR
PERTAMINA	Donor via CSR
YAYASAN PEDULI	Motivator
PT BES	SWM Business company
BP MIGAS	CSR Coordinator
Adiwiyata schools	Practitioner
Kaltim post group	Campaign and Dissemination
PERKUMPULAN STABIL	Motivator
Consortium of Environmental Organization in Balikpapan	Motivator and Coordinator

**Mobilization via Governmental Instances (BAPPEDA, BLH and DKPP)**

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- ## Composting in Balikpapan (3)
- Compost products produced by governmental facilities are for local consumption only
  - Compost products produced by local community will be purchased by the city government but in small scale only
  - Green/Food Waste as Fish pellets



# Lessons Learned

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- ## Success Factors
- Incentive via Adipura awards
  - Enforcement of Environmental regulation  
UU no. 18 Tahun 2008 and PERDA No. 10 Tahun 2004
  - CGH Programs

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## Barriers and Challenges

- Contrast diversity in Education level requires different approaches
- Lack of Awareness
- Regulation to be actually enforced
- Mediocre coverage for garbage disposal service due to hilly topography and poor spatial planning

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## Required Assistance in

- Improving urban planning
- Approach Strategy Planning to alert the people the importance of proper waste management
- Policy Advocacy to produce realistic regulation concerning waste management to be implemented
- Capacity Building for relevant stakeholders in managing and utilizing garbage
- Extending Possibilities to market compost products

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## Improvement of Slum Areas (1)

KABUPATEN KUTAIKARTANEgara

- Is Located in the Buffer Zone Area of Pertamina RU. V (Oil Refinery)
- Was built by local community over 30 years ago through encroachment of formerly mangrove area
- Measures are needed to minimize environmental impacts through ICMM Project since 2000

"Over-Water" Village Margasari

Raising Environmental Awareness

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## Improvement of Slum Areas (2)

Before the Project

After the Project

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## SUMMARY

- The City Government of Balikpapan is striving to improve solid waste management, water resources management, and air quality with solid planning and MRV principles
- PESAMAS has been integrated to the mid-term urban development master plan to reduce solid waste generation, primarily but not exclusively through composting
- The City Government of Balikpapan set a priority on environmental education as a main tool to raise environmental awareness in general
- The City Government of Balikpapan is engaged in national to international cooperation activities to improve environmental quality of urban area

