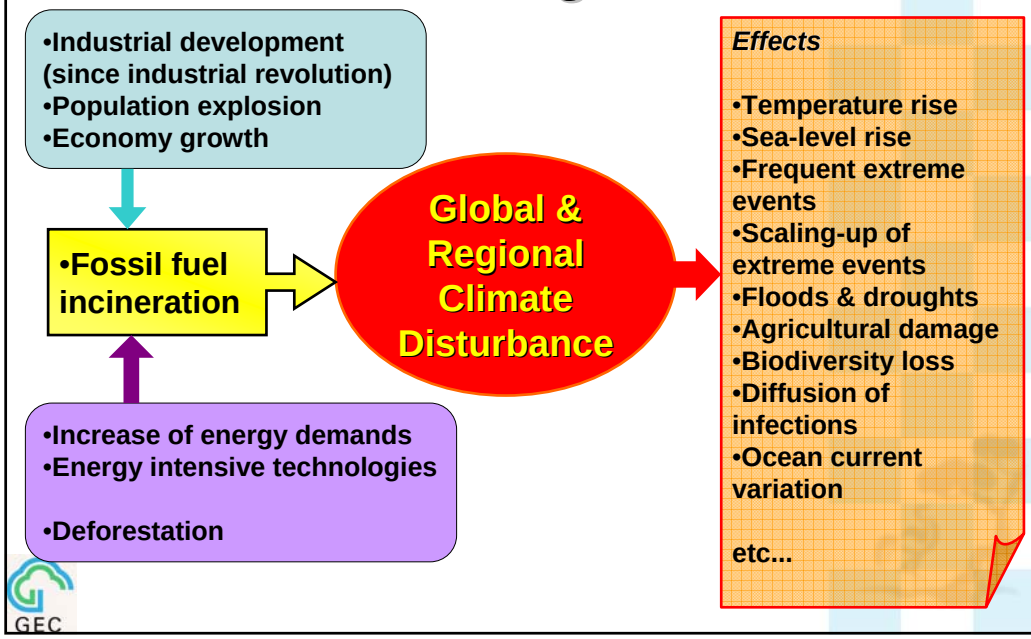
Co-benefits:
Waste Management + Climate Protection

Tomoya MOTODA
Programme Officer
Research Department, Project Division
Global Environment Centre Foundation (GEC)

Climate Change Problem



Co-benefits Approach:

Climate Protection + other benefits

- Difinition: integrated efforts to address climate change concerns, while meeting development needs in developing countries.

More concretely…

Co-benefits = GHG Reduction +

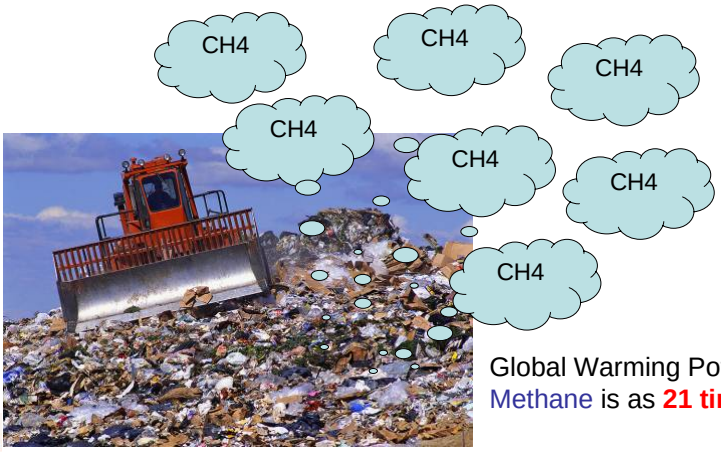
Local Environmental Improvements

Such as: Air & Water Pollution Abatements, and **Appropriate Waste Management**

GEC

Why integrate waste and climate?

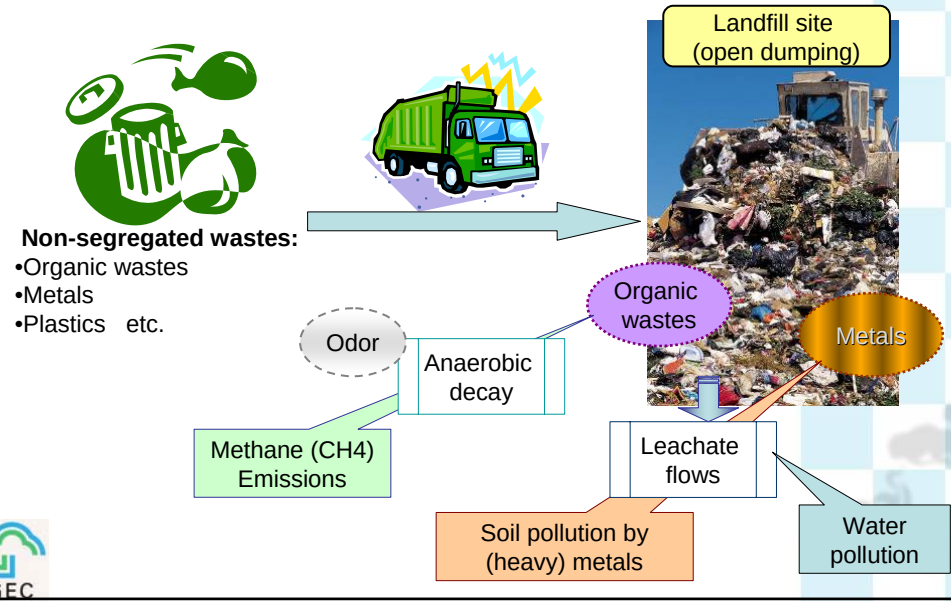
Organic waste is a source of methane (CH4) emissions.



Global Warming Potential (GWP) of Methane is as **21 times** as CO2 GWP.

GEC

Emissions from Wastes



Climate-friendly Waste Management

- Option 1: Aerobic Treatment of Organic Wastes
  1. Organic wastes (**segregation process is necessary**) should be treated under aerobic conditions.
     → CH4 emissions will be avoided. = Benefit for Climate
  2. Volume/amount of organic wastes will be deducted through aerobic treatment.
     → Benefit for Local Environment (waste reduction)
  3. Composting will contribute to agriculture if perfect segregation of organic wastes is achieved.

Co-benefits

Feasibility Study for Programmatic CDM Project for Aerobic Intermediate Waste Treatment in West Java province

Recyclable wastes such as plastics and metals can be picked up and sold.

Simple Mechanical sorting & Biological Treatment (MBT) for wastes

Mechanical sorting: Picking recycables up from wastes

Biological Treatment: Promoting aerobic treatment

- CH4 emissions will be avoided.
  - Odor at landfill sites will be reduced.
  - Risks of explosion at landfill sites will be reduced.
- Volume/amount of wastes will be reduced.
  - Lifetime of landfill sites will be prolonged.

GEC

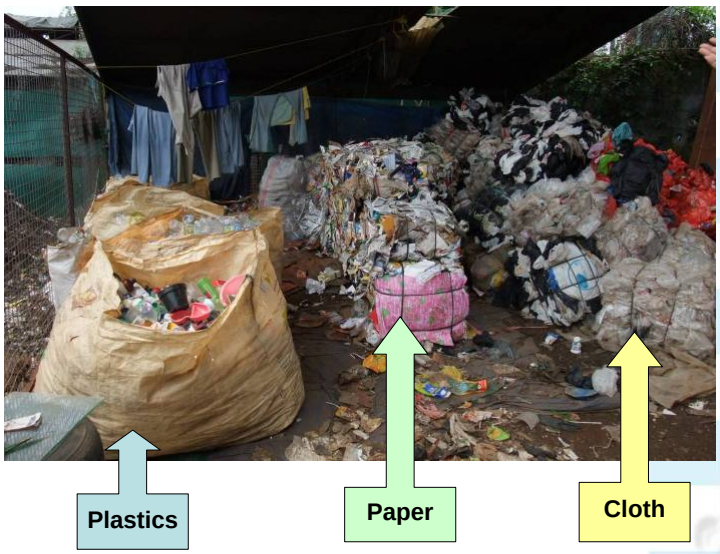
Waste Segregation/Sorting Process

Simple Mechanical Sorting

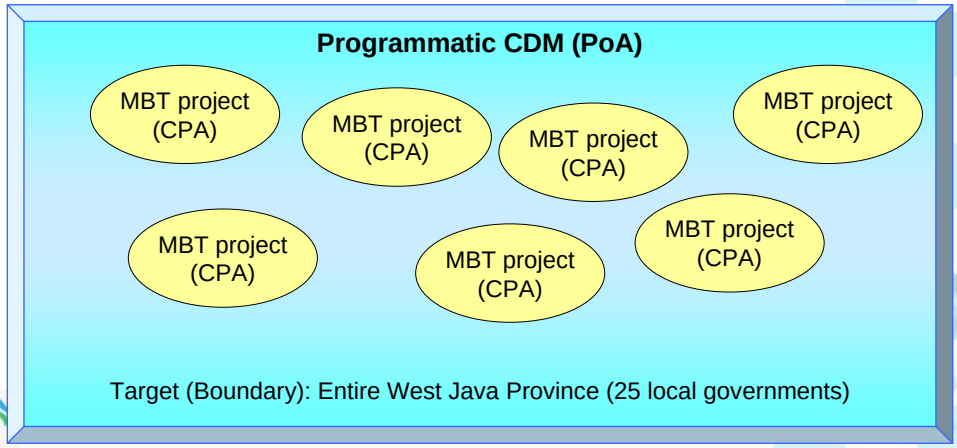
Manual Sorting

GEC

Sorted Wastes



Feasibility Study for Programmatic CDM Project for Aerobic Intermediate Waste Treatment in West Java province



Climate-friendly Waste Management

- Option 2: Fuelisation of Waste Biomass

  Waste biomass (such as wastes from agriculture or forestry or woody-products industries) should be combusted in biomass boilers to generate energy (heat and/or electricity).

  ➔ - Benefit for Climate: CH4 avoidance

  - Benefit for Sustainable Development: Energy supply increase

  - Benefit for Local Environment: Reduction of volume/amount of wastes

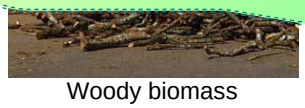
Co-benefits

GEC

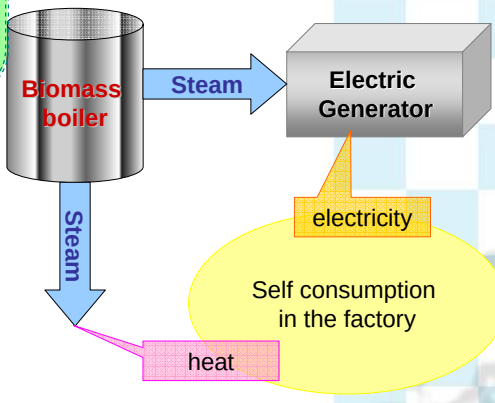
ibility Study
tion CDM Project
oody Biomass
ntral Java

Waste-to-Energy through combustion should be based on dried wastes, such as dried wooden wastes, and papers.

Organic wastes are usually wet, therefore they are not suitable for waste-to-energy combustion process.



Woody biomass
from a Timber Factory



Reduce energy based on fossil fuels, which would be purchased from outside without the project

GEC

Climate-friendly Waste Management

- Option 3: Landfill Gas (LFG) recovery & utilisation
  1. LFG (composed mainly of Methane (CH4)) should be extracted and captured, not be released into the atmosphere.
  2. CH4 should be utilised as energy resources, such as fuel for heat boilers, or for gas engine power generators.

  ➔ - Benefit for Climate :CH4 reduction

  - Benefit for Sustainable Development: Energy supply increase

  - Benefit for Local Environment: Odor reduction

Co-benefits

GEC

Key Points for Realisation of Co-benefits

- Segregation/sorting of wastes at the originating sources
- Valuation of organic waste
  - Establishment of a system which generate products (e.g. electricity, heat, compost, etc.) from organic wastes is vital.
- Community/citizen participation
- Financial benefits to all stakeholders
  - CDM is one option.

GEC

Indonesia-Japan Cooperation for Co-benefits Project Development

- Environment Ministers of both Indonesia (Ir. Rachmat Witoelar) and Japan (DR. Ichiro Kamoshita) signed the MoU on Cooperation for Co-benefits in December 2007, on occasion of UNFCCC COP13 (Bali Climate Conference).
- Joint Technical Working Team was established in June 2008.
- Potential cities for Co-benefit projects were selected by Indonesian side:
  - Palembang City in South Sumatra
  - Banjarmasin City in South Kalimantan

  Feasibility studies were conducted in 2008.

  Pilot projects will be proposed in 2009.

* Information source: COP14 Side Event organised by OECC

GEC

Website of Co-benefits Approach

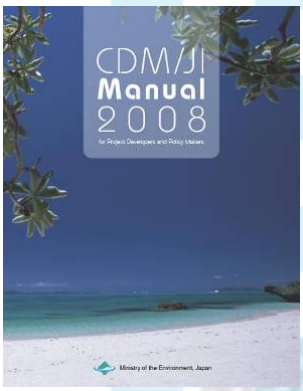
December 2007

December 2008

GEC

CDM/JI Manual for Project Developers & Policy Makers - 2008

◆Comprehensive guidebook, published by MOEJ, in Dec. 2008.



◆Available through GEC website:

http://gec.jp/gec/gec.nsf/en/Activities-CDMJI_FS_Programme-CDMJI_Manual

Thank you very much!

Tomoya MOTODA
Programme Officer
Research Department
Project Division
Global Environment Centre Foundation (GEC)
Tel: +81-6-6915-4121
Fax: +81-6-6915-0181
Web: http://gec.jp

- CDM/JI FS web:
http://gec.jp/gec/gec.nsf/en/Activities-CDMJI_FS_Programme-Top