



# **IGES – Phitsanulok Municipality cooperation on sustainable waste management for climate change mitigation**

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# Partnership on North-South-South Cooperation

- 2010 – A project’s review on sustainable waste management
- 2011 – A project’s review on comparative GHG emissions from various waste treatment technology
- 2012 - Providing capacity building on community based waste management to Battambang City, Cambodia
- 2012 - Supervising a pilot project implementation on organic waste separation at source for composting in Battambang City
- 2013- Implementing a pilot project on organic waste separation at source for composting for climate change mitigation
- 2013- Implementing a MRV at city level
- 2014- Becoming a CCAC member’s city

## Pilot project on organic waste separation at source for composting

- Aimed to promote organic waste separation at source for composting as a model city of zero GHG emissions on LCA perspective
- Started in August 2013 through MOEJ financial support under the MRV capacity development program
- Began with 2 markets
- Used a static pile aeration system which is similar to the composting technique for MBT system of Phitsanulok Municipality

# Budget

## Support by Phitsanulok Municipality

Target	2 markets	1,000 kgs/day
Volunteer	20 persons	
Market committee	34 persons	Team
Municipal Staff	10 persons	
Investment	Truck , Land and Equipment	
Operating (Petrol)	26,000 THB/ month	

## Support by Project (IGES)

630,000.00

THB

Survey &amp; Data Collection

50,000.00

THB

Training Staff

30,000.00

THB

Equipment

340,000.00

THB

Promotion &amp; Campaign

110,000.00

THB

Monitoring and Evaluation

100,000.00

THB

Note: Approximately 1 THB  $\approx$  3 JPY  $\approx$  0.03 USD

# Target groups

- **Piloting in 2 Markets**

- Municipal Market 1

- 491 Vendors in Building
- 130 Vendors around Building
- Open from 01.00 to 10.00



**Waste Amount**

**1,450 kgs/day**

- Municipal Market 6

Day time (01.00 – 19.00)

- 720 Vendors in Building
- 400 Vendors around Building



**1,940 kgs/day**

Night time (18.00 – 24.00)

- 295 Vendors in Building
- 130 Vendors around Building



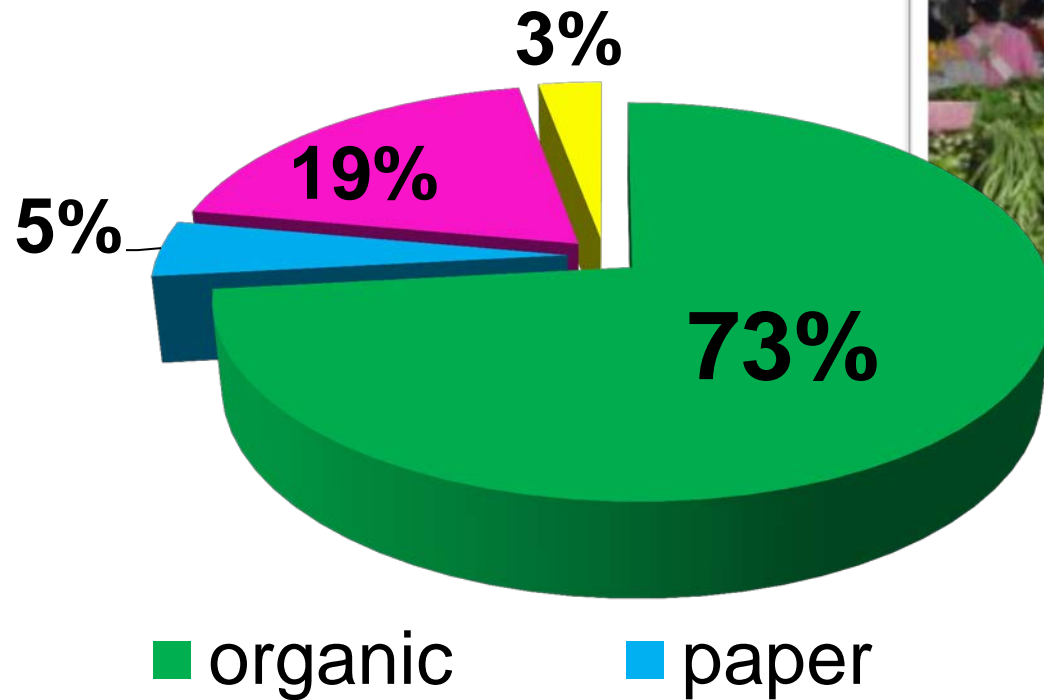
**2,250 kgs/day**

# Analysing data and composition of waste



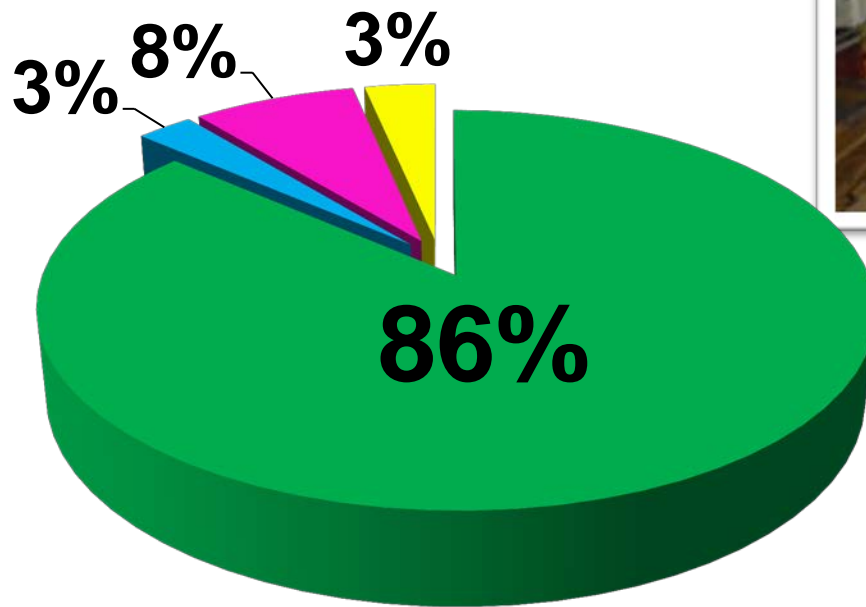
# Composition of Waste

## Market 1



# Composition of Waste

## Market 6 : Day time



■ organic

■ paper





# Awareness campaign to promote waste separation at source

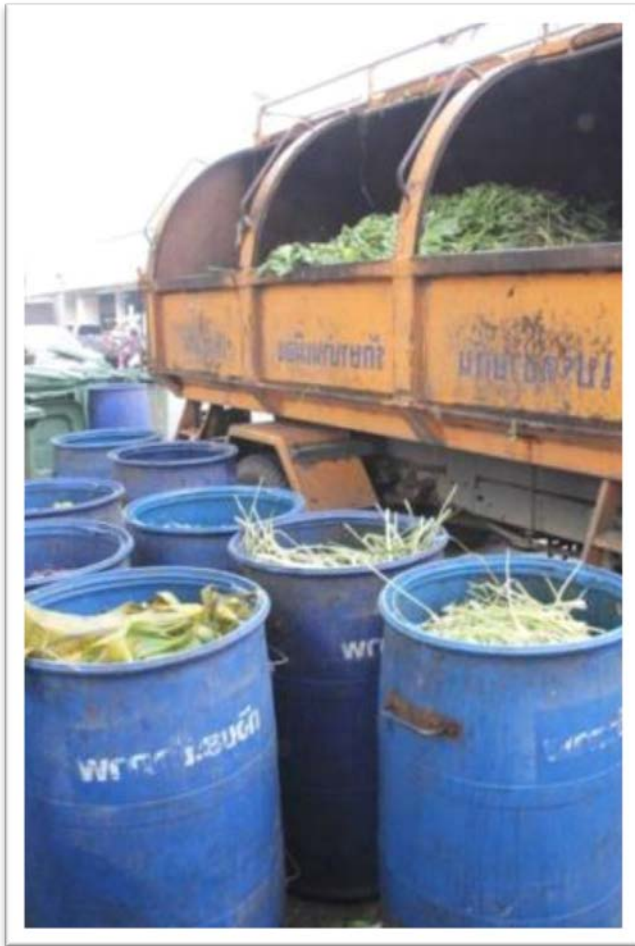
**6 August 2013**



# Drop off station of Organic Waste



# Collection & Transport of organic waste



# Composting plant



# Monitoring and evaluation

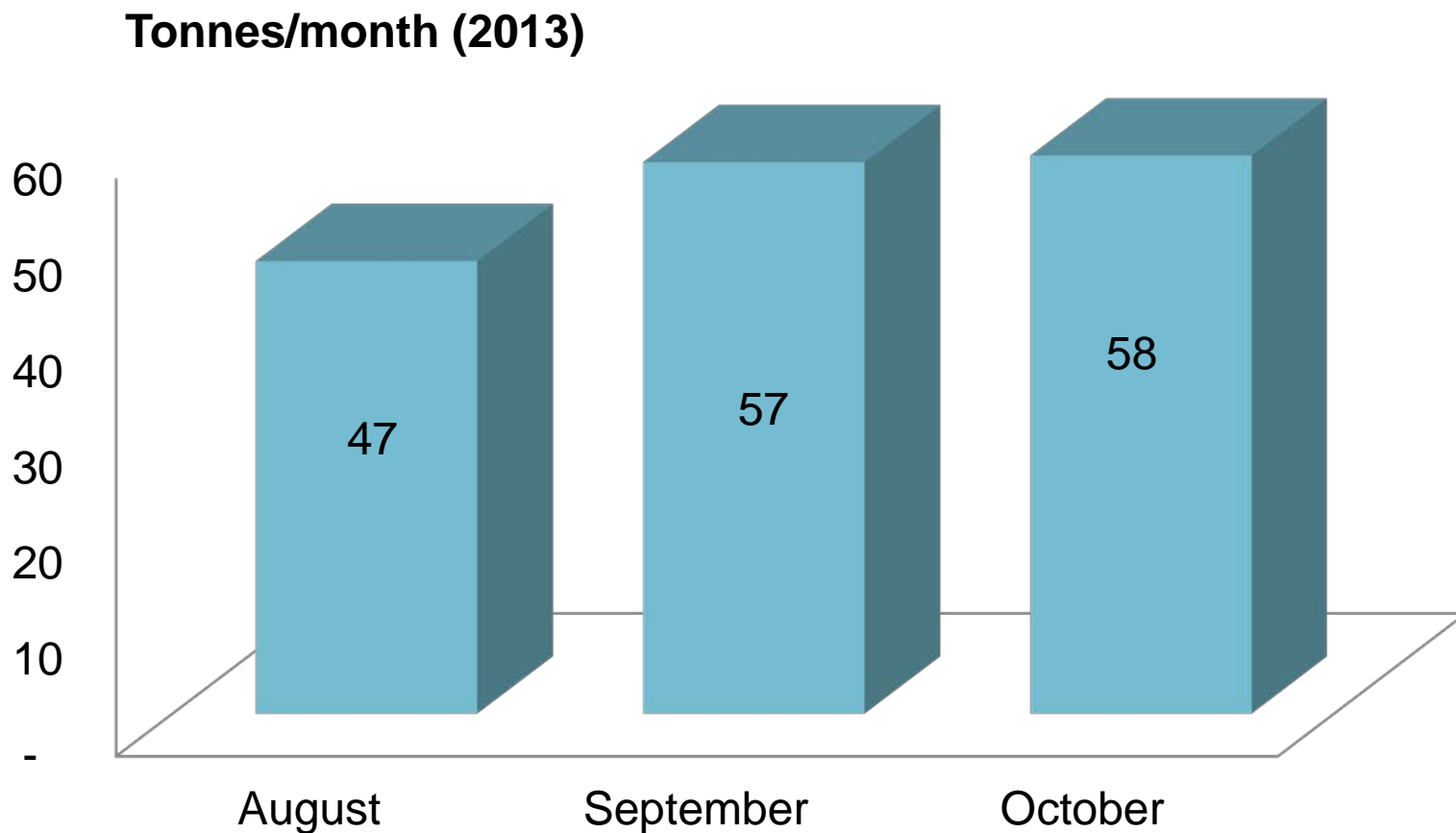


# MRV Training Workshop

9 October 2013



# Amount of separated organic waste from markets



## Amount of GHG emission from 1 tonne of organic waste

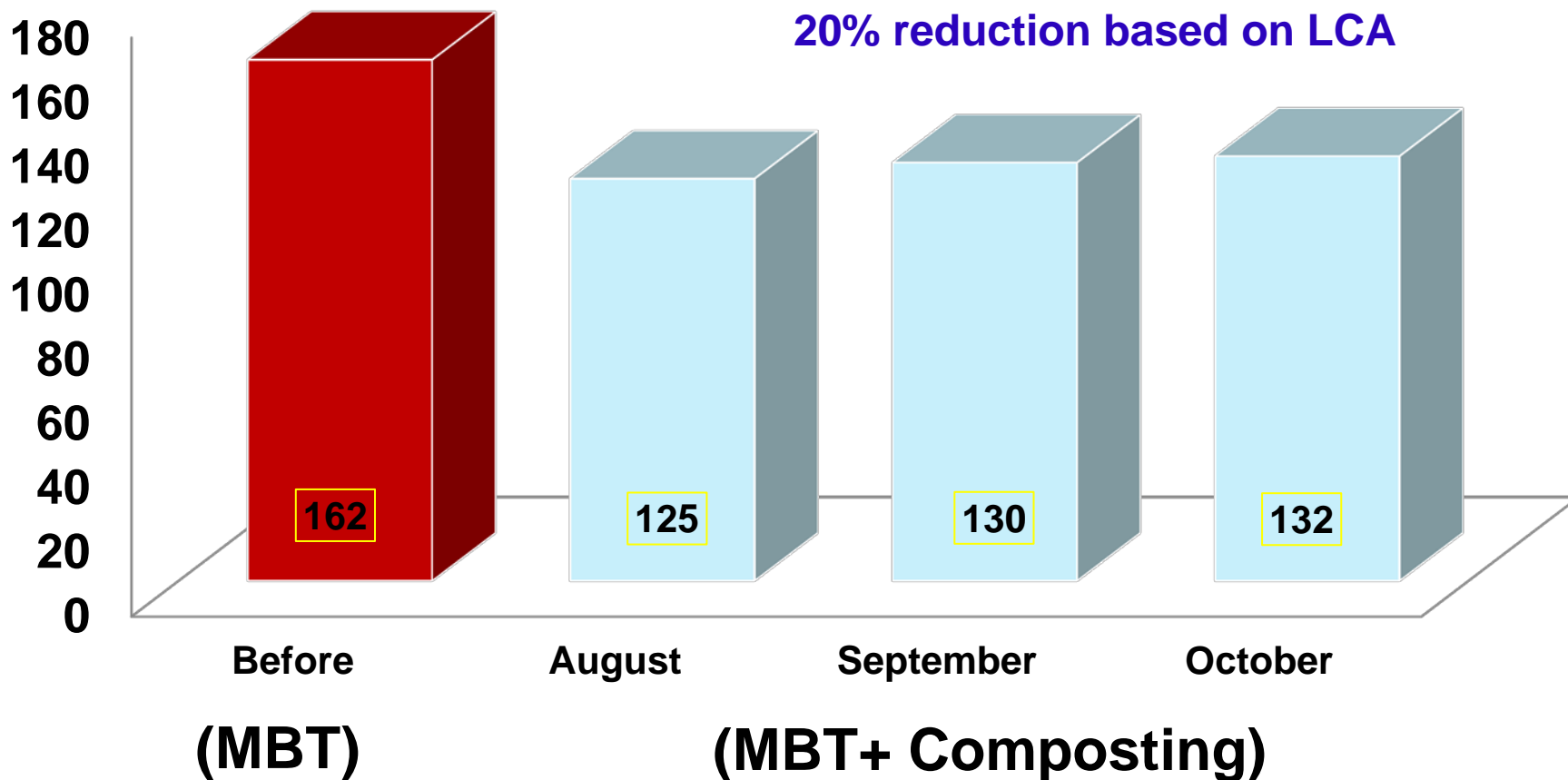
Treatments	GHG emission	Avoided emission from chemical fertiliser production	Net emissions (LCA)
	Kg CO <sub>2</sub> /tonne organic (including transport)		
Sanitary landfill	914.62	0	914.62
Mechanical biological pre- treatment (MBT)	196.48	0	196.48
Composting	218.55	717.10	-498.55

**Note:** This value does not include avoided emissions from landfill of organic waste because baseline emission of Phitsanulok Municipality is MBT



# Overall achievement (Aug-Oct 2013)

Tonnes of CO2-eq/ Monthly managed waste



## Next Step

- **Replication of activities to selected hotels and schools**
  - there is 58 hotels and 25 schools within municipal area
- **Aims for zero GHG emission based on a life cycle perspective as a part of the municipality's policy on zero waste landfill policy**

**THANK YOU FOR YOUR ATTENTION**