CLIMATE AND CLEAN AIR COALITION
TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS

Phitsanulok Municipality, Thailand

September 2014

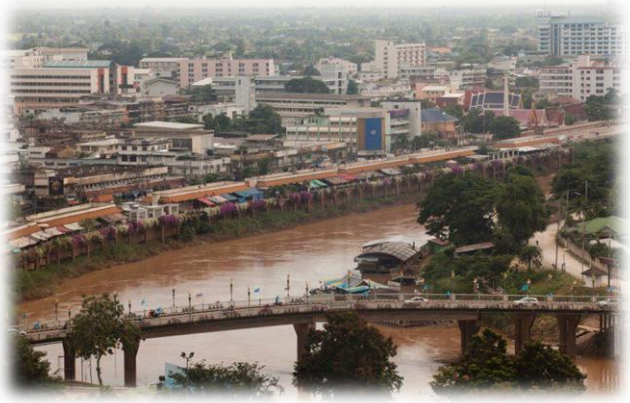
2014 ISWA World Congress, Sao Paulo

City Overview

- Located in Phitsanulok province, Lower Northern Thailand
- 377 kilometers north of Bangkok

City Overview

Population	• 72,027 Inhabitants (Registered), • 108,000 Inhabitants (Non-Registered)
Area (km^2)	• 18.26 km^2
Climate	• Moist and Wet Tropical Zone
Main Economic Activities	• Products and Services



VISION

“PHISANULOK, a city of beauty, livability, happiness, and sustainable and low-carbon development.

Solid Waste Sector

According to Public Health Act B.E.2535 (1992), municipal waste refers to waste from both households, commercial entities and organizations located in the area of the municipality.

Solid Waste Sector

No.	Item	Unit	PL City	Thailand
1	MSW Generation	Tonnes/year	54,750	26.77 Million
2	Average waste generated per capita	Kg/year	303	420
3	Collection Coverage	%	90-100	53.5
4	Proper treatment and disposal of collected waste	%	100	28
5	Recycling rate	%	44.2	19
6	Composting	%	3.5	0.2
7	Energy Recovery Rate	%	13	≈1-2%

Solid Waste Sector

Waste Composition at Source

Waste Composition	%
Saleable materials (Recyclable)	45.6
Vegetable, Putrescible waste	40.0
Non-recyclable plastic	13.2
Textiles	0.6
Toxic, hazardous waste	0.1
Infectious waste	0.3
Others	0.8
Total	100.00

Public Health and Environment Bureau, 2011

Solid Waste Sector

Waste Composition at disposal site

Waste Composition	%
Organic	51%
Paper	9%
Plastic	21%
Metal	5%
Glass	2%
Others	12%
Total	100%

Faber Technologies Co., Ltd. , 2007

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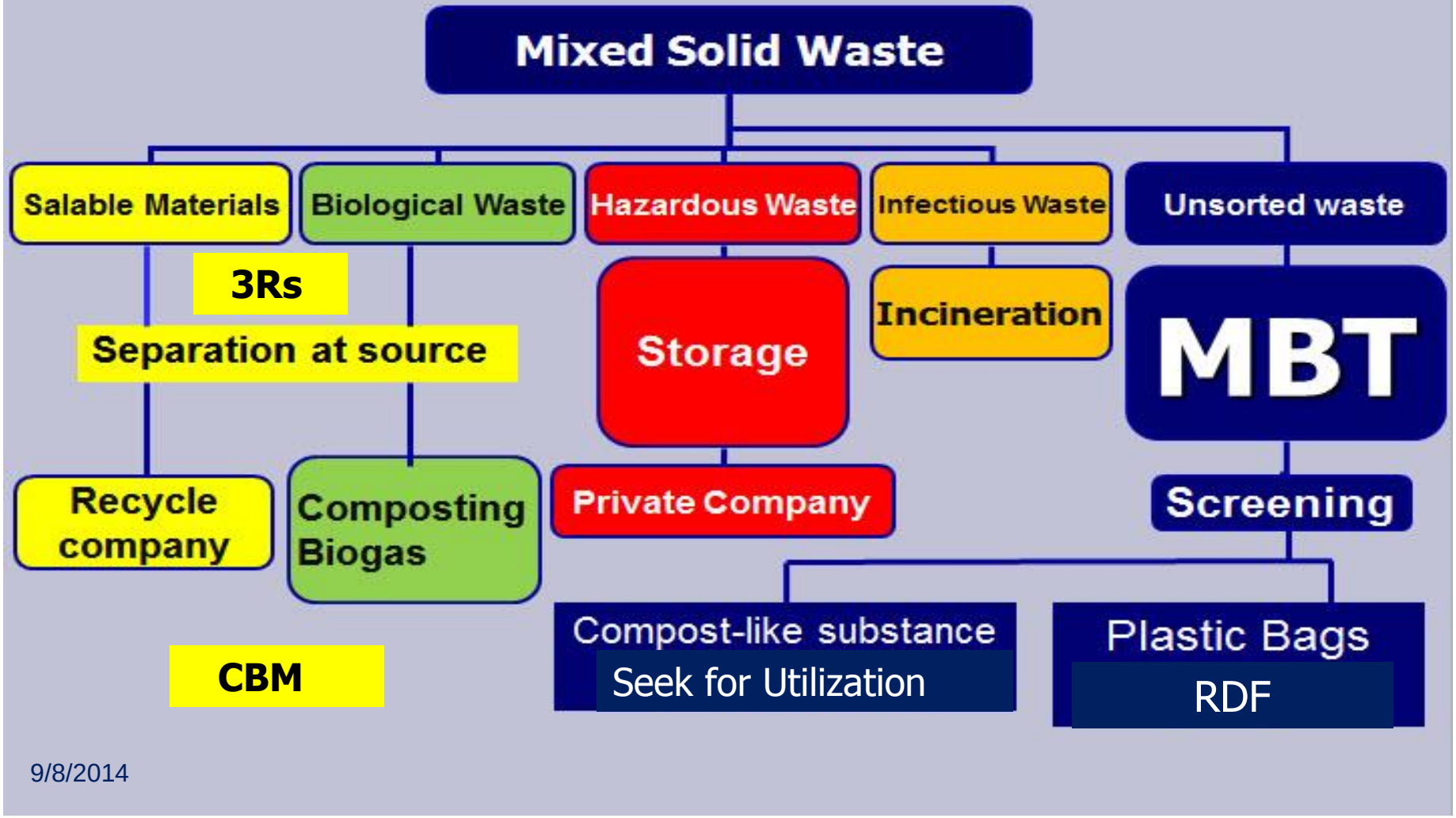
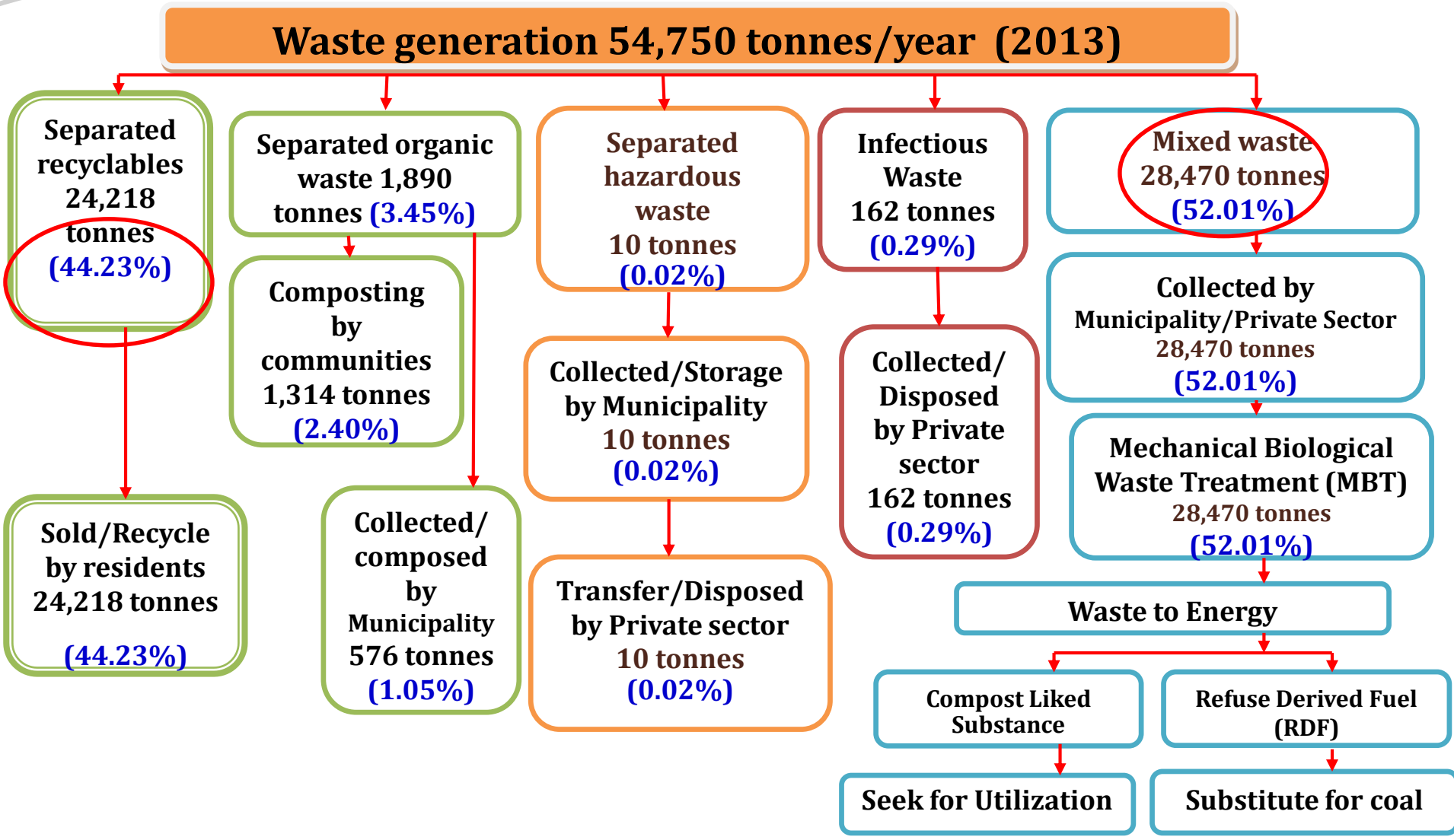
Zero Landfill

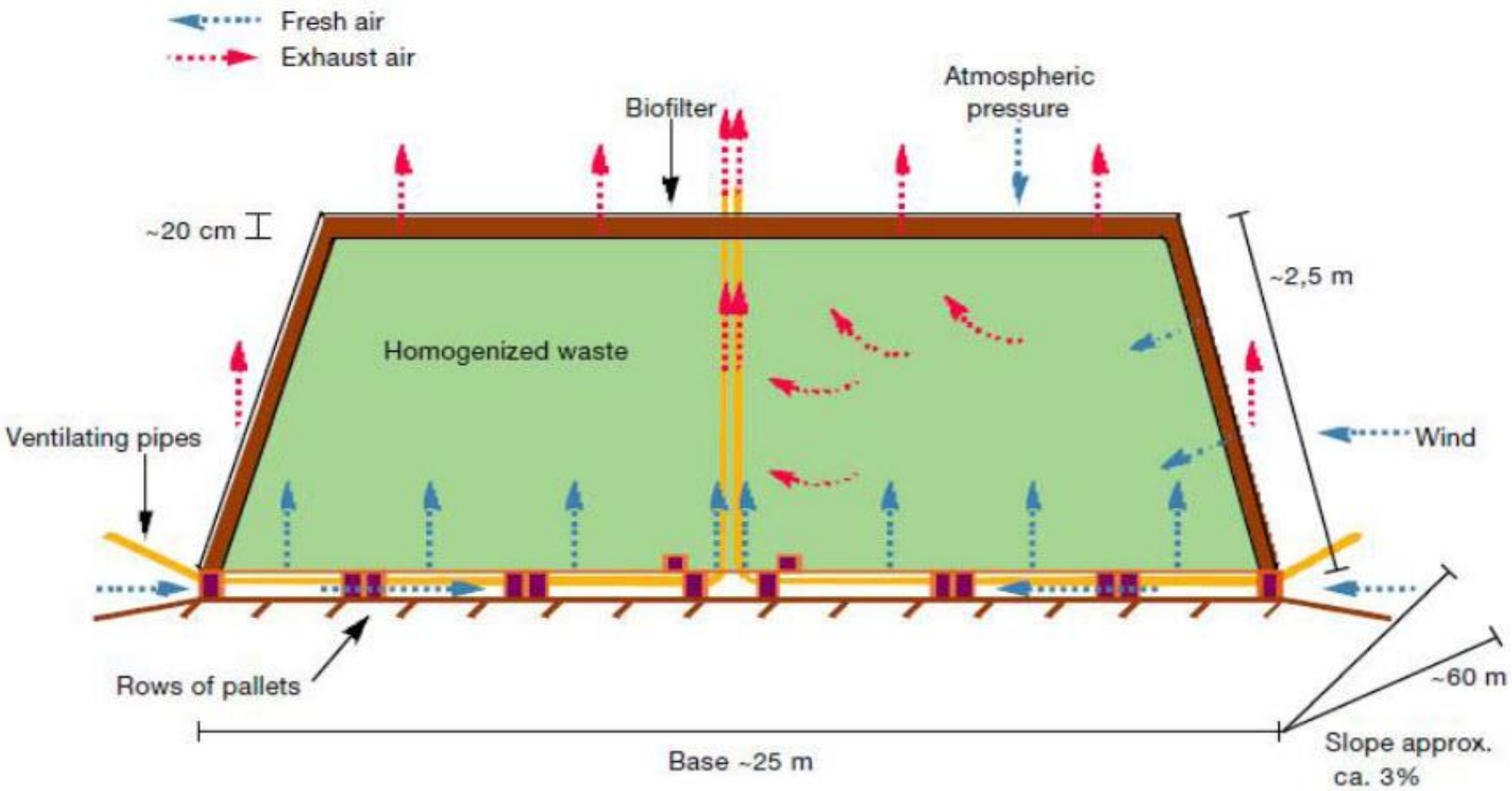


Solid Waste Services

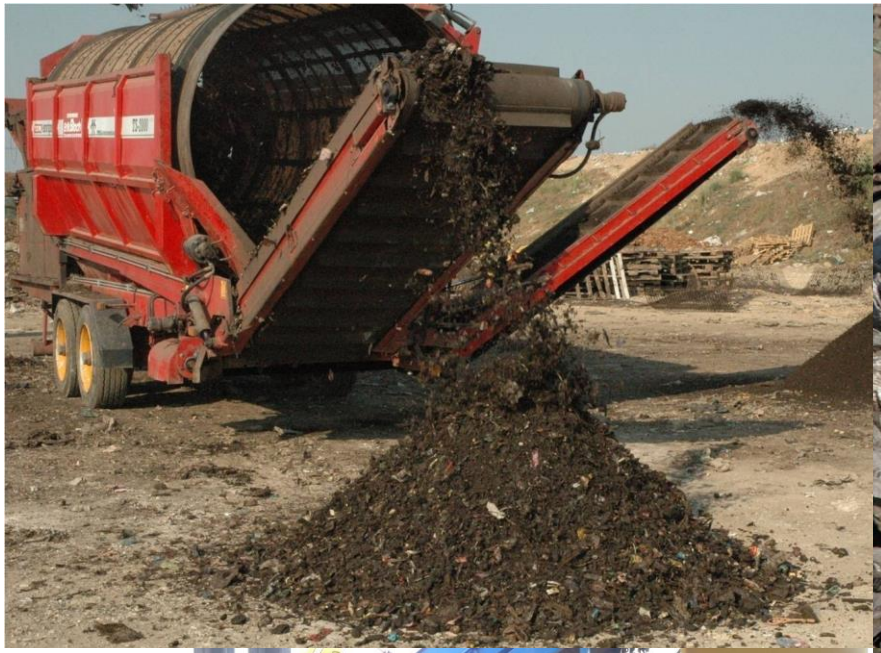


MBT : Mechanical Biological Treatmant

Scheme of the current windrow and ventilation system



Dipl.-Bioi. Gabriele Janikowski, IKW GmbH

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Toward Zero Waste

Public Participation

(Community Base Solid Waste Management : CBM)

Best Practice Certificate For CBM

Year 2006

:DUBAI INTERNATIONAL AWARD

For Best Practice To Improve The Living Environment

Toward Zero Landfill

Waste to Energy (WTE)

Composting

Mechanical-Biological Waste Treatment (MBT)

3Rs


RDF


MBT


Composting

International cooperation for sustainable waste management

City-to-City Cooperation

Phitsanulok Municipality – Battambang Municipality

Thailand

Cambodia

IGES
Institute for Global Environmental Strategies

COMPED

Phitsanulok Municipality
Phitsanulok

DR. WALTER SCHÖLL FOUNDATION (DSF)
มูลนิธิ ดร.วอลเตอร์ เชิลล์

Involved in Country-to-Country Cooperation

Thailand – Lao PDR

Phitsanulok Municipality activities on sustainable waste management for climate change mitigation

Institute for Global Environmental Strategies

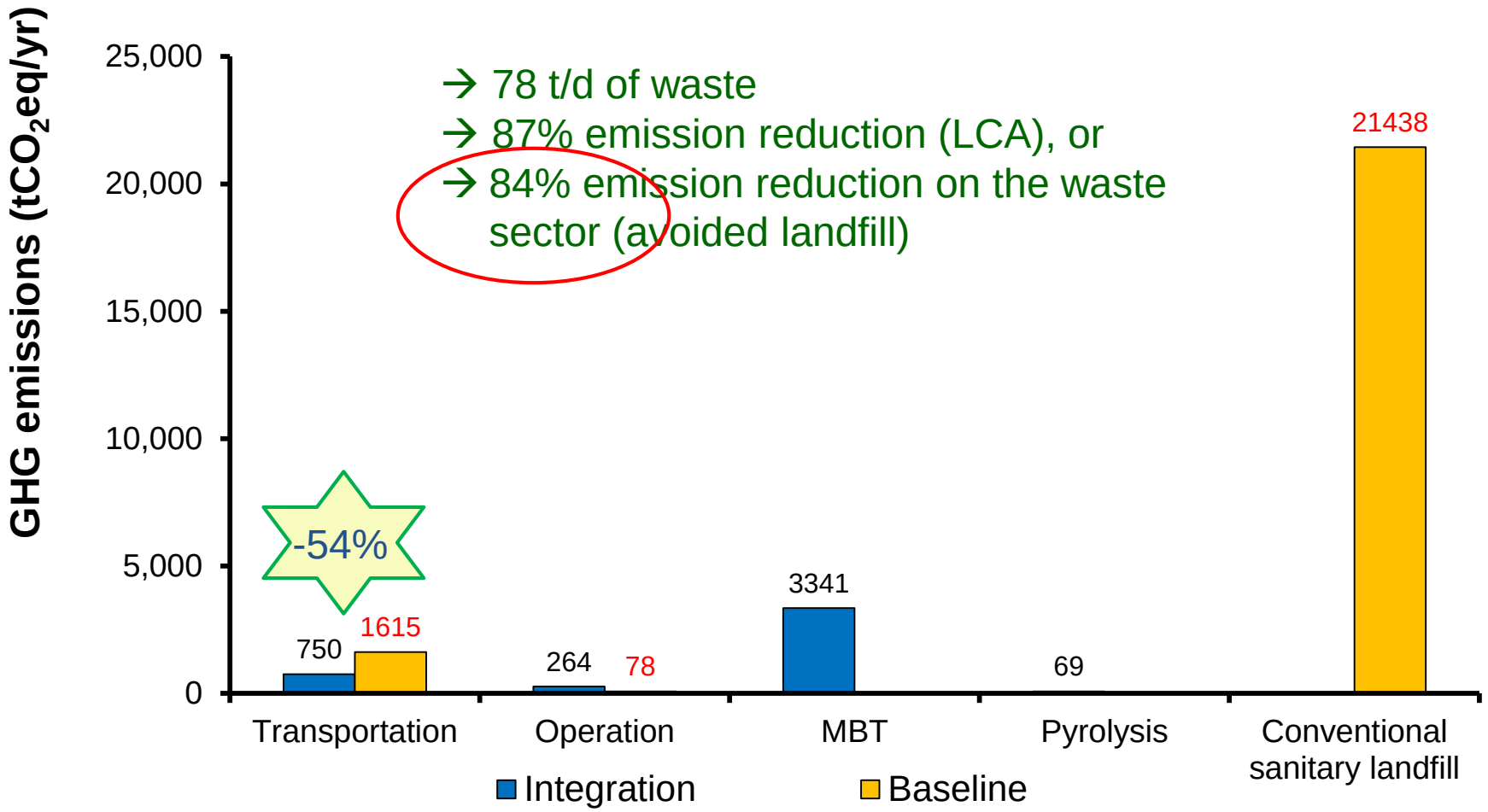
Phitsanulok Municipality

DR. WALTER SCHÖLL FOUNDATION (DSF)

กรมควบคุมมลพิษ
POLLUTION CONTROL DEPARTMENT

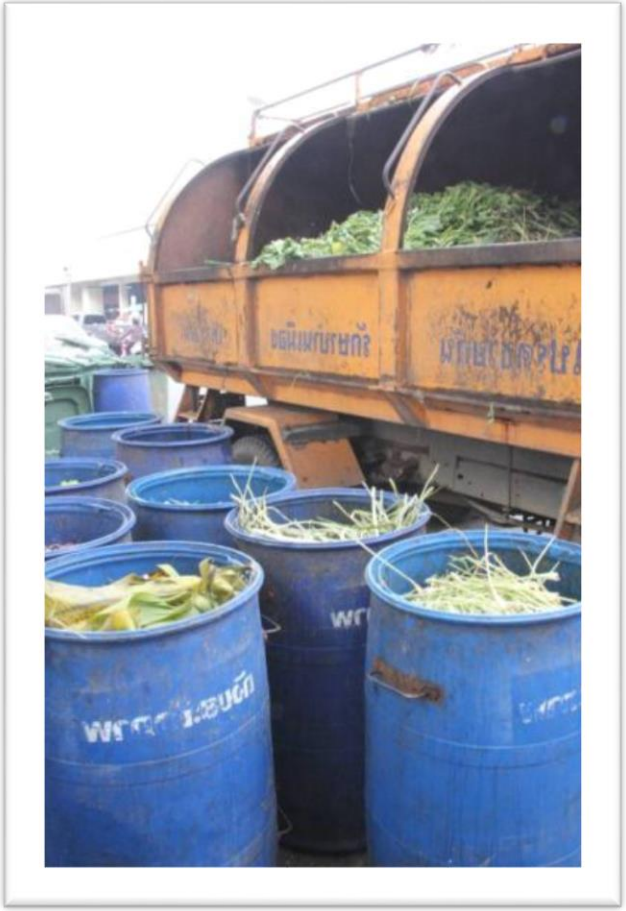
UNTGO

GHG emissions from integrated waste management system in Phitsanulok Municipality



Source: Sang-Arun and Menikpura, 2013

Reducing GHG emissions through organic waste separation at source for composting in Phitsanulok Municipality



Estimated GHG emissions

Input (t/d)	84	84	82.5	1.5
Technique	**Landfill**	**MBT**	**MBT**	**Composting**
GHG emissions/tonne	***0.66***	***0.0041***	***0.0041***	***-0.05***
GHG emissions/Total	**55.4**	**0.35**	**0.33**	**-0.08**

MBT+ Composting	
*G*HG	0.25

Tonnes of CO2-eq

Conclusion

SLCP emissions from Phitsanulok Municipality are relatively low but there is room for improvement to achieve the ultimate goal of zero SLCP emissions based on LCA.

Policies

Low-carbon city : *Zero waste landfill for zero SLCP emissions (LCA)*

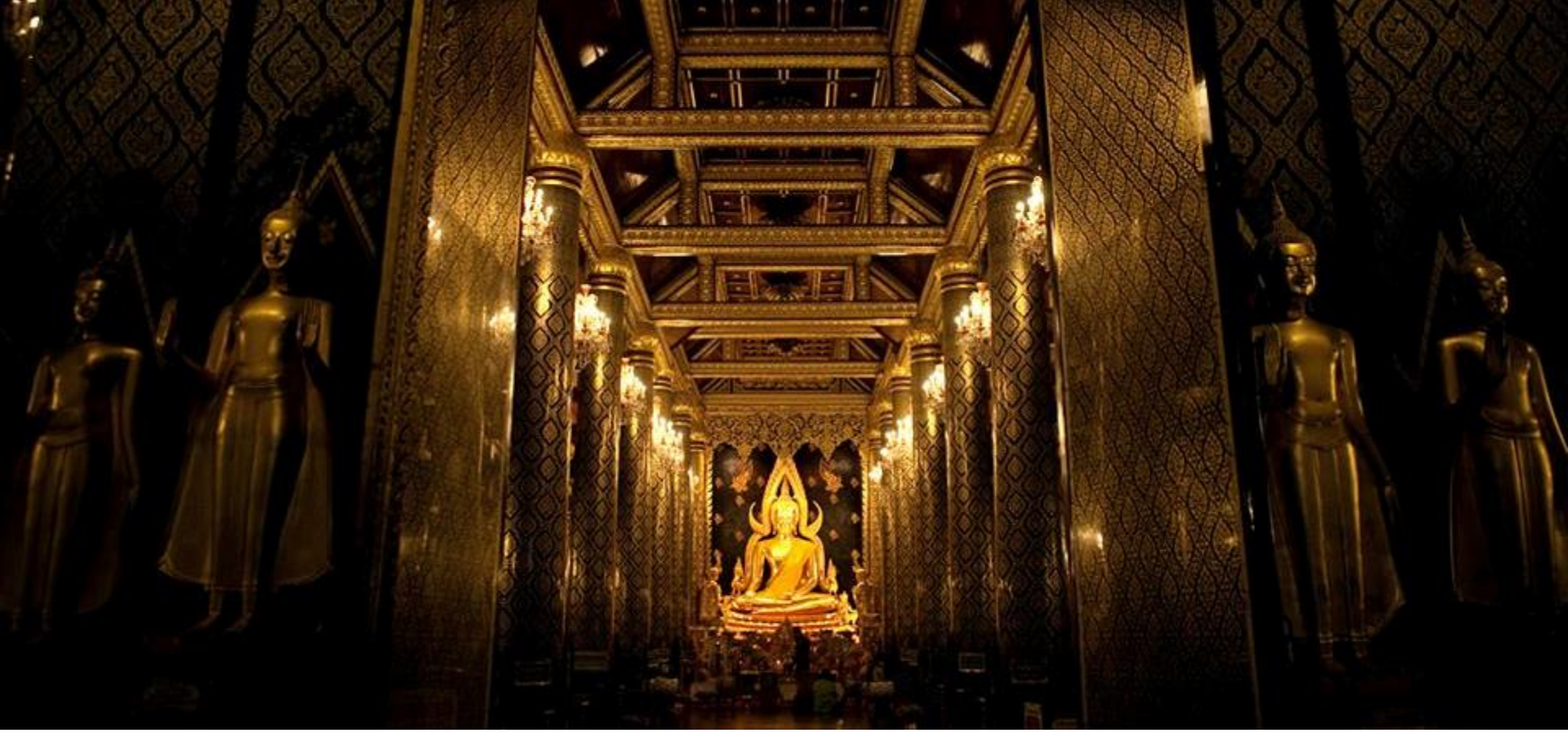
- Aligned with the zero waste landfill policy, Phitsanulok Municipality has announced its low-carbon city development for climate change mitigation and reducing SLCP emissions from waste management activities including waste collection, transport, treatment and disposal.
- Holistic institutional management approach will be applied to address waste management issues and achieve climate-friendly waste management toward a zero SLCP emissions from a lifecycle perspective.

Proposed activities under the CCAC

1. Mainstreaming the 3Rs and community based waste management
2. Reduce SLCP emissions from fuel consumption for waste management activities
3. Increase organic waste separation for utilization
4. Increase utilization of post-MBT waste to achieve zero-waste landfill
5. Reduce black carbon emissions from open burning
6. Biogas production from leachate
7. Improvement of accountability of SLCP emissions from municipal solid waste management
8. Learning center for SLCP emissions reduction from municipal solid waste management in Thailand and Asia

Next Steps

- Development of work plan to implement the action plan
- Seek financial support including result-based performance
- Build capacity of municipal staff and implement pilot project for on-the-ground learning and use it as a showcase to mainstream implementation
- Provide technical support to Battambang City and others, upon request



THANK YOU FOR YOUR ATTENTION

Phitsanulok Municipality
Phitsanulok