

**Fifth Regional 3R Forum in Asia and the Pacific**

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# **Report on 3R Policy Initiatives and Achievements**

**(Draft)**

**<Phitsanulok City Municipality>**

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This report was prepared by Phitsanulok City Municipality as an input for the Fifth Regional 3R Forum in Asia and the Pacific. The views expressed herein do not necessarily reflect the views of the United Nations.

Thailand

## Phitsanulok City Municipality : Clean, Green and Conservative City



Mr.Boonsong Tantanee  
Mayor of Phitsanulok

VISION : CITY OF BEAUTIFUL  
LANDSCAPE AND CHEERFUL PEOPLE

### 1.General information

Phitsanulok City is a centre of transportation, trading and services as well as a green city rich of various beautiful tourism spots.

#### A. Area

Phitsanulok City Municipality is one of a big local administration organization with an area of 18.26 square kilometers located in the city district, Phitsanulok province. The municipality locates in lower northern region of Thailand. Phitsanulok city lies on the geographical coordinates of 16° 50' 0" N, 100° 15' 0" E, 377 kilometers away north of Bangkok.



#### B. No. of households

There are 33,537 households situated in Phitsanulok City Municipality.

#### C. No. of registered population

Male	33,047
Female	38,821
<b>Total</b>	<b>71,868</b>

(Source : City Clerk Bureau, Phitsanulok City Municipality, September 2013)

#### D. Economic Review : Gross Provincial Product (GPP)

Gross Provincial Products(GPP) - Baht per capita

Year	2009	2010	2011
GPP	78,006	79,724	86,784

(Source : Office of the National Economics and Social Development Board)



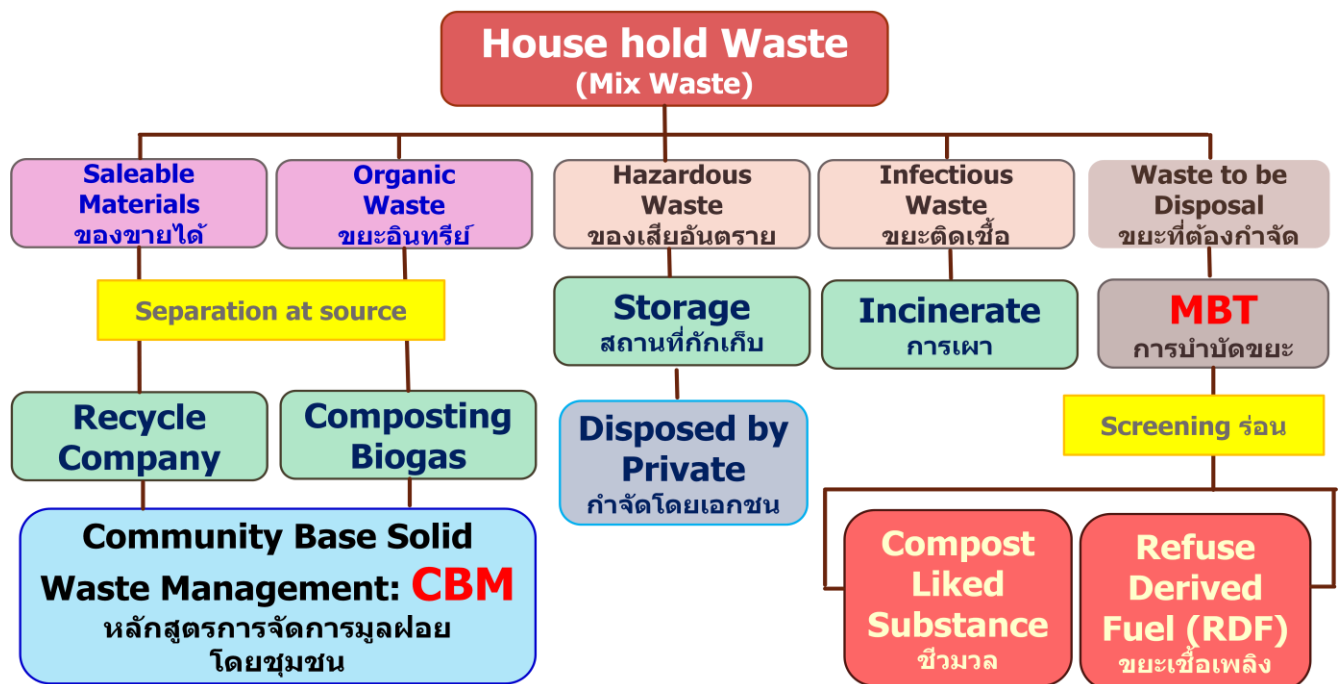
## E. Religion

According to the Phitsanulok Office of Buddhism, 2012, the distribution of religions are 98.93% Buddhist, 0.83% Christian, 0.17% Muslim and the rest are others.

## 2. Solid waste management

### Municipal Solid Waste Management in Phitsanulok ,Thailand

From 1999 to 2007 Phitsanulok City Municipality in cooperation with GIZ on behalf of the Federal Republic of Germany was launched a project on Solid Waste Management Programme for Phitsanulok. The project then has led to the **Phitsanulok Model**. The Phitsanulok Model is an integrated waste management with people participation. The practiced experiences can be adapted and utilized by other local authorities.



### 1) Public participation

*The public awareness campaigns have been elaborated; in particular, the knocked door activity, outreach service, public relation, campaigns on waste reduction.*

*And other appropriated waste management in community level focus on the 4 categories of waste sorting*

- Sellable materials is sorted for selling
- Kitchen waste and other organic material is separated for compost making which can be done both in household and community level.
- The hazardous waste have to be sorted out for municipality for further collecting and transferred to private company.



- The left waste which need to be disposed will be presented to municipal waste truck in the agreed time.

Waste management by community offers cheaper cost , but fast impact. The existing of community's structure as a driven mechanism provides solutions to community's problems and offers potential to apply with other community based activities.

The practice experiences then has been developed to curriculum so called "Community-based solid waste management (CBM)". At present the CBM and CBM Training for Trainer are adopted by Ministry of Natural Resources and Environment in dissemination to local authorities of Thailand resulted in increased participatory approaches and networks.



The Certificate of Recognition was awarded from the United Nations via 2006 Dubai International Award for CBM as the Best Practice of environmental improvement.

## 2) Waste collection

Waste collection has been improved in term of its effectiveness in service providing and be sure that full area is covered. The promotion on waste separation at source has been influenced to waste amount reduction. Campaign on waste presentation in related to collection time results in less numbers of trucks to collect waste from 32 trucks per day in 1999 to 16 trucks per day in 2009. Additionally, privatization approach has also been involved in waste collection.



## 3) Waste transportation

Household waste is collected by the municipality. After full loaded, waste will be transferred by waste truck to the transfer station which located at Tathong subdistrict, Muang district, Phitsanulok province, 15 kms far from Phitsanulok city. This transfer station has been started since May 2002. A bigger amount of waste will later be transported to landfill site by container trucks. Each container truck can carry up to 12 tons of waste. There are 3 container trucks functioning 7-8 shifts a day.

## 4) Waste disposal

Phitsanulok Municipality has prepared an area of 222 rais as a disposal site which locates at Ban Buengkok, Buengkok subdistrict, Bangrakam district, Phitsanulok province. It locates 30 kms far from the city of Phitsanulok. The sanitary landfill has been constructed and operation of landfill has been started in February 1999. At present an MBT has been additional implemented before disposal.

Waste after MBT has been screened. Two fractions from screening are available as following.

1. Solid Recovery Fuel (SRF), acts like bio-filter and be reused for MBT waste piles covering
2. Refuse Derived Fuel (RDF), used as fuel in some industries or used as input to produce oil.



Mechanical-Biological Waste Treatment (MBT) results in less emission, for example, leachate and gases. It helps to reduce waste volume causes smaller area is needed for landfilling. At the end landfill lifetime will be extended as consequence. It is expected that lifetime of this landfill site will be 30 years (started from 2005).



**Landfill site before MBT**



**Landfill site after MBT**

## **Zero Landfill**

An improvement to efficient management is based on cost-benefit analysis. Waste collection and transportation have been improved and allowed for privatization. Integrated waste management is taken place and aimed to achieve the Zero Landfill aspect.

Medical waste is disposed by an incinerator.

The left waste then is delivered for treatment by MBT, mechanical biological waste treatment. The MBT treatment helps reduction of pollution, reduction of leachate and prolong lifetime of the landfill site. Waste is sieved after treatment in order to get energy potential materials.

- First material from sieving functions as biomass. The changing from biomass to power is under the studying process.
- Second material is fuel waste which can be as Fuel for Cement Industry project.

## **Sustainable :**

Community based solid waste management helps reduction of waste generation from 1.8 kgs per head to 0.96 kgs per head and has led to waste reduction from previously 142 tons per day to 75 tons per day at present.

Sustainable city development is not only for present, but also for future for benefit of the next generation and meant to be the crucial mission for all of us in Phitsanulok.

## **Working in ASEAN level**

- Receiving the Certificate of Recognition on Clean and Green Land in 2011 (Contest Award)
- ASEAN ESC Model Cities, project on sustainable urban environment model city in Asean



