

# South-South cooperation toward zero waste and climate change mitigation in developing Asian cities



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## Institute for Global Environmental Strategies (IGES)

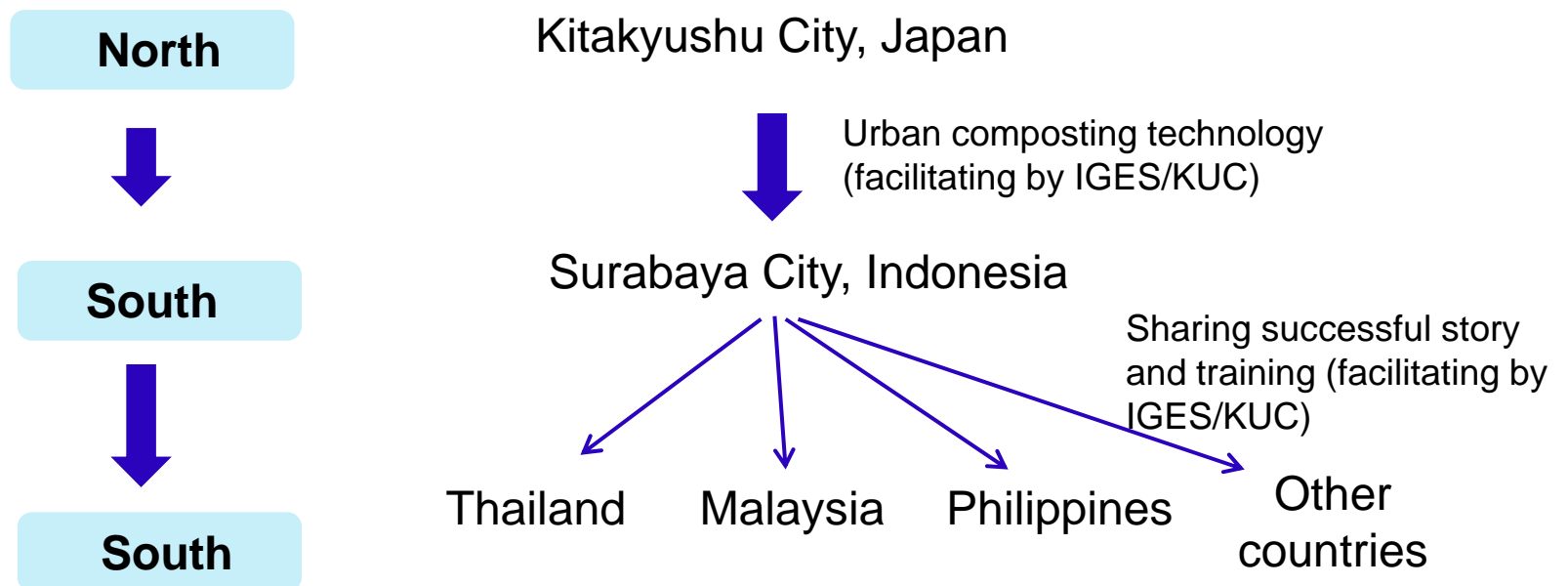
- IGES is a Japanese policy research institute promoting sustainable development in the Asia-Pacific region
- Have offices in Hayama, Tokyo, Kobe, Kitakyushu, Beijing and Bangkok
- The institute's research focuses mainly on environment related policies in developing countries
- IGES employs around 90 researchers
- Two groups are working closely with city development:
  - Sustainable Consumption and Production (SCP)
  - Kitakyushu Urban Center (KUC)



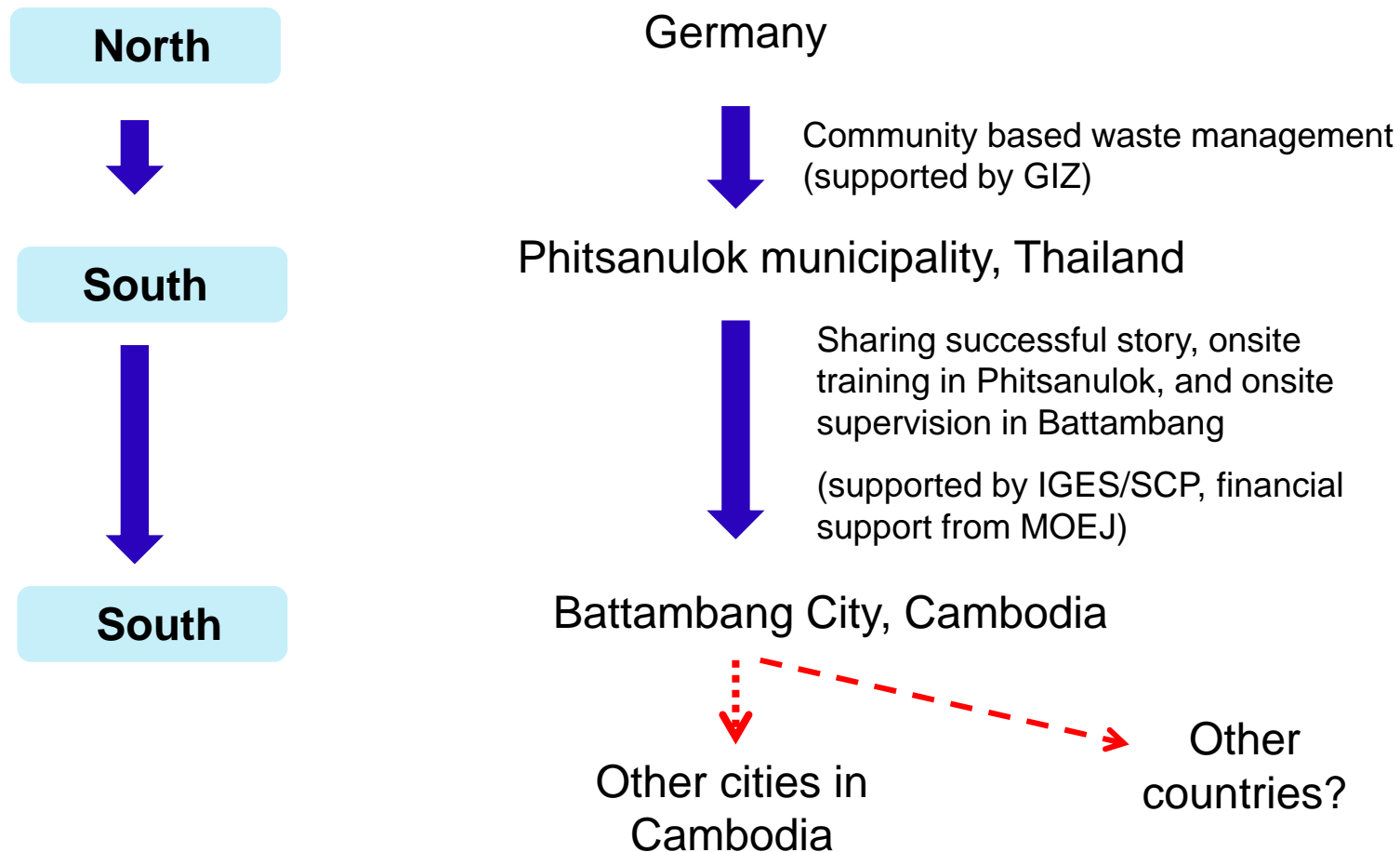
## Transition from North-to-South to South-to-South cooperation on waste management in Asia

- **Typical City-to-City cooperation was in form of North-to-South especially from Japan to other developing Asian City**

**Case I:** Kitakyushu City's International Cooperation for organic waste management in Surabaya city (Indonesia) and its replication in Asian cities



## Case II: Phitsanulok municipality and Battambang city cooperation on improvement of municipal solid waste management and climate change mitigation



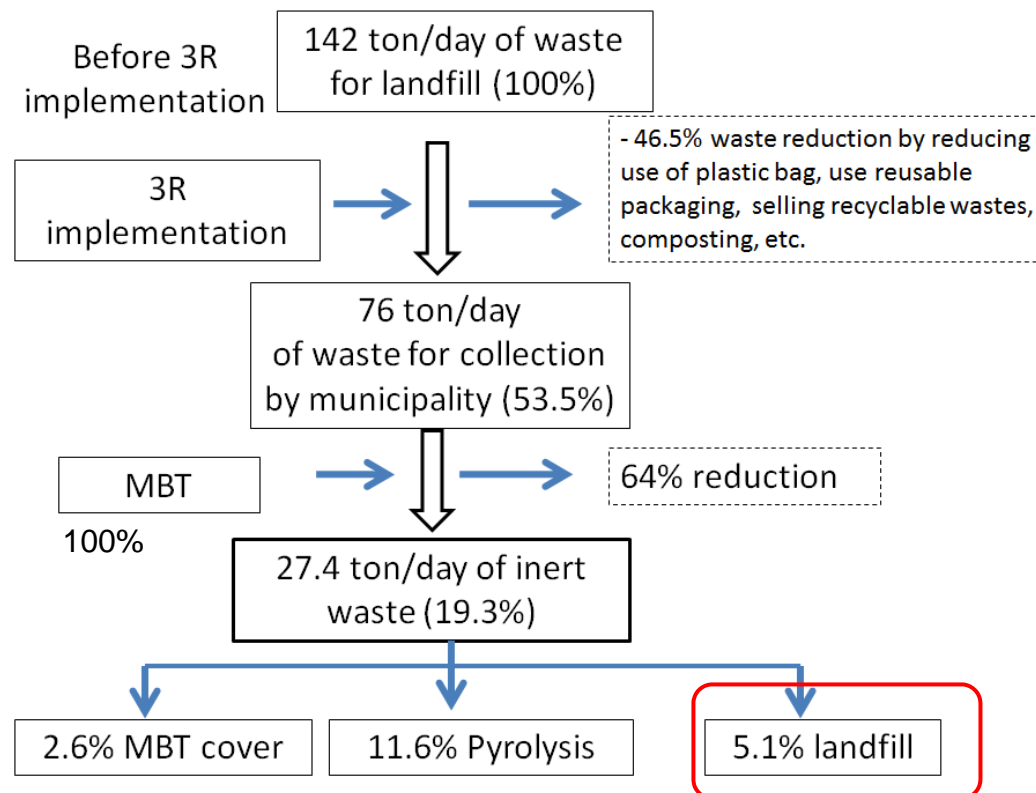


## Initiatives towards city to city cooperation between Thailand and Cambodia

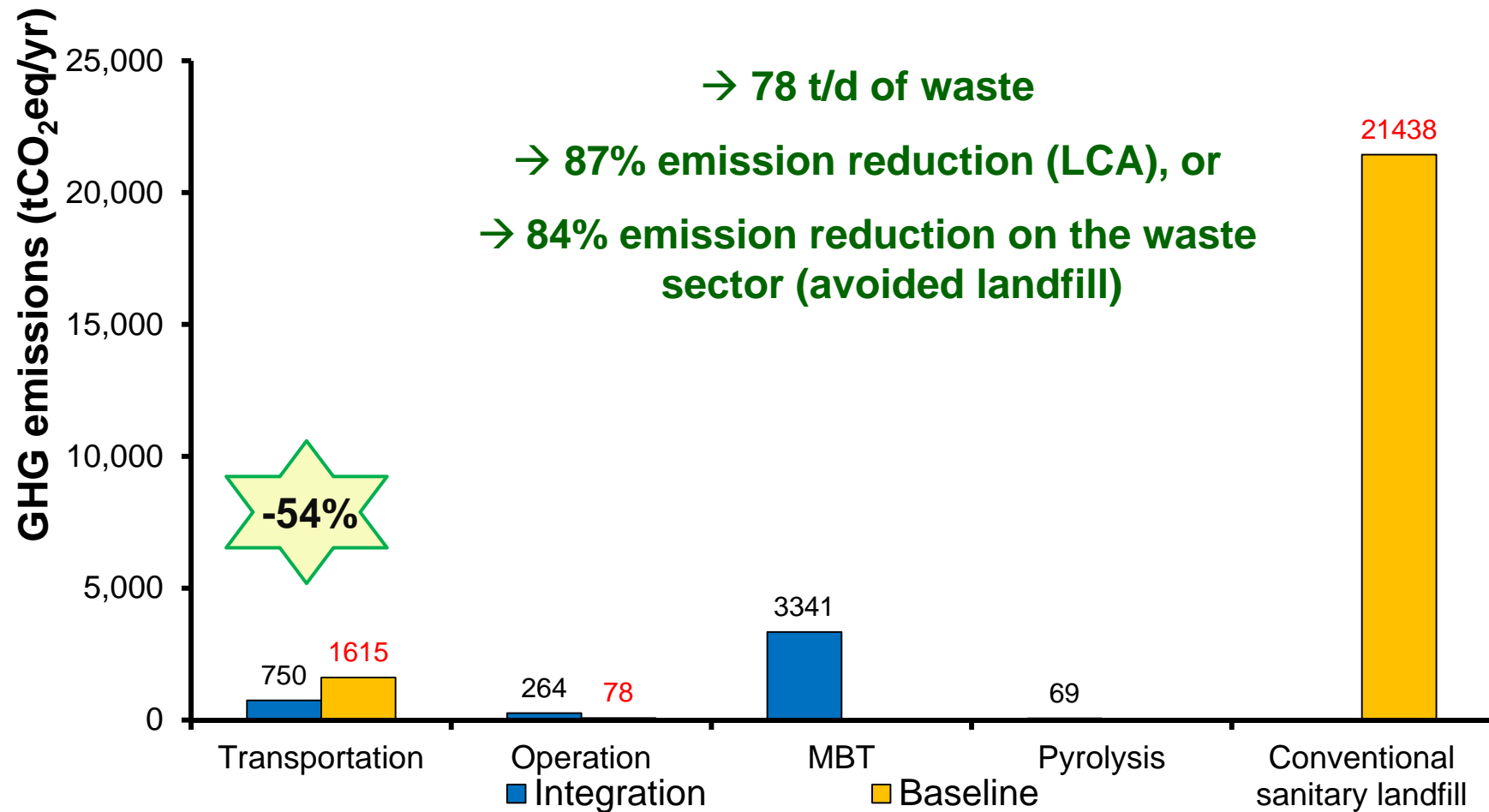
- **IGES conducted a national training workshop on promoting urban organic waste utilization for climate change mitigation in Battambang City in August 2011**
  - Introducing experiences in many cities in developing Asia
  - The Ministry of Environment of Cambodia requested for pilot project implementation in Cambodia
  - Battambang City showed an interest in implementing the pilot project
- **IGES invited an NGO (COMPED) to the national training workshop on the same topic in Thailand in January 2012**
- **IGES and COMPED visited a few good practices of solid waste management in Thailand in January 2012**
- **COMPED selected Phitsanulok as a model city for Cambodia in February 2012**

# Achievement towards zero waste policy of Phitsanulok Municipality

- Apply the 3Rs concepts, public participation, and polluter pay principle to achieve zero waste landfill
- Apply mechanical biological pre-treatment for reducing quantity of waste to final disposal and separation of plastic waste for energy recovery



## Reduction of GHG emissions (Lifecycle approach)



## Waste management problem in Battambang City (I)



**About 80-100 m<sup>3</sup> of waste is open dumping and sometimes burning is practiced**



**High percentage of organic waste (>70%)**



## Waste management problem in Battambang City (II)



**High risk of heavy metal contamination to paddy fields**

## Waste management problem in Battambang City (III)



**Less land efficiency thus new land is required for landfilling**



## Waste management problem in Battambang City (IV)



Less than 1 ton/day of  
organic waste is  
composting



goal

**Increase organic  
waste to  
composting facility  
and reduce waste  
to landfill**



## Intensive training course for encouraging public participation on solid waste management

- Ministry of Environment of Japan provided financial supports
- IGES and Phitsanulok Municipality conducted an intensive training course in Phitsanulok Municipality in July 2012
- 22 participants from the City, markets, waste collection company, composting facility (NGO) and residents
- Public participation, waste separation at source, composting, and greenhouse gas emission reduction





## Project implementation in Battambang

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- Trained stakeholders formed a working group in Battambang City
- Active discussion to formulate the working plan according to the local conditions (partial financial support from UNESCAP)
- Drafting a local directive on waste separation at source for composting based on multi-stakeholders discussion, questionnaires surveys with vendors and residents in surrounding communities
- Implement the projects in three main markets and surrounding communities
- Awareness raising campaign by the City (involvement of university students)

## Follow-up and on-site supervision by IGES and Phitsanulok Municipality





## Commenting on the draft of directive for waste separation at source



# Examples of content in the directive: Asking market's vendors and residents to separate compostable waste and put in plastic bag or separated containers

**សាលាក្រុង បាត់ដំបង**      **សេចក្តីណែនាំ ការប្រើប្រាស់សំណល់ទឹក ក្រចកបាត់ដំបង**

• ដល់អាជីវករនិងប្រជាពលរដ្ឋនៅក្នុងនិងជុំវិញផ្សារទាំងអស់ត្រូវចូលរួមប្រើប្រាស់ឧបករណ៍បំបែកសំណល់រឹងតាមប្រភេទខាងក្រោមនេះ ៖

**សំណល់អេកទ័រ**

អាចប្រើប្រាស់ឧបករណ៍អេកទ័រដូចជា ៖ កុំព្យូទ័រ កាមេរ៉ា កុងតឺន័រមេកាត្រិក ប្រើប្រាស់ប្រភេទដេក ក្រដាស។ល។

**សំណល់ខ្សែស្បែកឆ្កែ**

ត្រូវប្រើប្រាស់ឧបករណ៍ដាក់សំណល់ខ្សែស្បែកឆ្កែ មានដូចជា ៖ សំណល់ខ្សែស្បែកឆ្កែ ក្រណាត់ សំណល់បំបាក់ និងស្រូវប្រាំងជាដើម។ មិន ត្រូវ បានដៃលើមិនអាចបាក់បាន ។ល។

**សំណល់ អាចប្រើប្រាស់បាន**

ត្រូវប្រើប្រាស់ឧបករណ៍ដាក់សំណល់ ឬប្រើប្រាស់ ប្រេង ឬក៏បានប្រើប្រាស់ឧបករណ៍ដាក់សំណល់ ឬប្រេង ឬក៏បាន កាកបាយ កាកកែ កាកសម្ល កាកកាហ្វេ សំបកដូង កាកដូង កាកកំដៅ ស្លាកយី ម៉ែកយី ...។ល។

• ក្រុមហ៊ុននិងអាជីវករ ឬអ្នកដឹកជញ្ជូន ត្រូវប្រើប្រាស់ឧបករណ៍បំបែកសំណល់ ទុកដាក់ នៅក្នុងផ្ទះ ចំណី ដោយស្មើគ្នា

• ក្រុមហ៊ុននិងអាជីវករ ត្រូវប្រើប្រាស់ឧបករណ៍បំបែកសំណល់ ដាច់ដោយស្មើគ្នា។ សំណល់ប្រើប្រាស់បាន យកទៅកម្រិតប្រើប្រាស់ និងសំណល់ផ្សេងទៀត យកទៅចាក់ចោលនៅទីលានសំណល់។



## Increase numbers of bins for waste separation by waste collection company





- Arrange waste and improvement of collection points and storage area
- Collecting compostable waste and non-compostable waste separately



## Challenges

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- First public participation project in Cambodia
- Communication with and changing behaviours of all vendors and surrounding communities
- Stolen of waste bins
- Economic impacts on waste collection company

## Keys to success

- **High administrative commitment from the City and support from the provincial government → Aiming for the national award on Clean City**
- **Confident of trained stakeholders**
- **Active cooperation from all stakeholders: City (high administrator), NGO (COMPED), waste collection company (CINTRI), market's operator and trained residents**
- **Strong commitment of the stakeholders (city, market operator, waste collection company, composting operator, trained residents)**
- **Regular onsite monitoring and supervision by IGES and Phitsanulok Municipality**
- **Financial support from Ministry of Environment of Japan and UNESCAP**



## Yes, We Can!

