Lesson Learned on Domestic Wastewater Management in Thailand

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Domestic Wastewater

- one of the most serious environment problems
- approximately 15 million $m^3$/day of domestic wastewater generated by the population around the country in year 2011
Domestic/Municipal Wastewater Implementation and Management in Thailand

- (2,008) Municipalities: MWW ~ 3.8 M m³/d
- BMA, Pattaya City: MWW ~ 2.7 M m³/d
- (5,767) LAOs: MWW ~ 8.5 M m³/d
- Total MWW ~ 15 M m³/d

The treatment capacity ~ 3.2 M m³/d (~ 21.3% of total MWW)
Domestic Wastewater Management

Wastewater Treatment System
- Central wastewater treatment
- Cluster wastewater treatment

On-site management
- Grease trap
- On-site treatment system

Law Enforcement
- Strict law enforcement
- Issue new regulations

Operation control to be effective
Central Wastewater Treatment Facilities in Thailand

Total 101 Plants

- Constructed  91 Plants
- Under Construction  9 Plants
- Delayed  1 Plant
- (Samutprakan Province)
Types of wastewater treatment technologies in Thailand

- Activated Sludge (36%)
- Aerated Lagoon (16%)
- Wetland (2%)
- Rotating Biological contactor (1%)
- Stabilization Pond (45%)
The Implementation of Central Wastewater Tariffs

8 municipality have enacted tariffs regulations & implement tariffs

- Hat Yai Municipality
- Pattaya City
- Tarae Municipality
- Huakwang Municipality
- Sriracha Municipality
- Sansuk Municipality
- Ban Pae Municipality
- Patong Municipality

4 municipality in progress

- Karon Municipality
- Maesod Municipality
- Mookdahan Municipality
- Huahin Municipality
Implementation Policy on Domestic Wastewater Management

- Construct new Municipal Wastewater Treatment System
- Reduce Municipal Wastewater at Sources of Pollution
- Law Enforcement
  - Strict Law Enforcement & Establish Local Ordinance

Support the Efficient Management of Operating & Maintaining
The Implementation of Municipal Sewage Management system
(MSMS 2008)

• Developed by using ISO 9000/14000 concept
• Consist of 6 requirements
  Policy
  Staff
  Evaluation
  Planning
  Implementation
  Audit
• Support LAOs to develop their domestic wastewater management system
• 17 LAOS have implemented MSMS 2008
• currently only 2 LAOS was certified MSMS 2008

Chiang Rai municipality
Phuket municipality
Wastewater Collection and Storm Drainage Systems

- The type of collection systems:
  - Combined Sewer System: drain both rainfalls and wastewater within one system
  - Separate Sewer System: the sewerage and drainage are collected in separate piping systems

- Most of the drainage systems in Thailand are combined system
Constraints in Domestic Wastewater Management in Thailand

- Many urban communities lack appropriate domestic wastewater facilities and management.
- The communities and people still lack understanding in wastewater problems and awareness to protect their own environment.
- The local administration organizations are still unable to manage domestic wastewater.
- Lack of budget for construction of the new wastewater collection system and wastewater treatment facilities as well as operation and maintenance system.
- Limitation of wastewater discharge fee’s collection.
Challenges in Domestic Wastewater Management in Thailand

- Propose and assess technically and economically feasible options including identification of types, the separate sewage system, or combined sewer system i.e. Centralized, Cluster and Onsite of wastewater treatment systems
- Technical assistance e.g. software
- The implementation and enforcement of the Effluent Standards from domestic central treatment plant
- Pressure from the public
- Water shortage and climate change
- Water conservation becomes an issue ..... Water re-use and recycle
Thank You