

# **Wastewater Production, Treatment, and Use in Malaysia**

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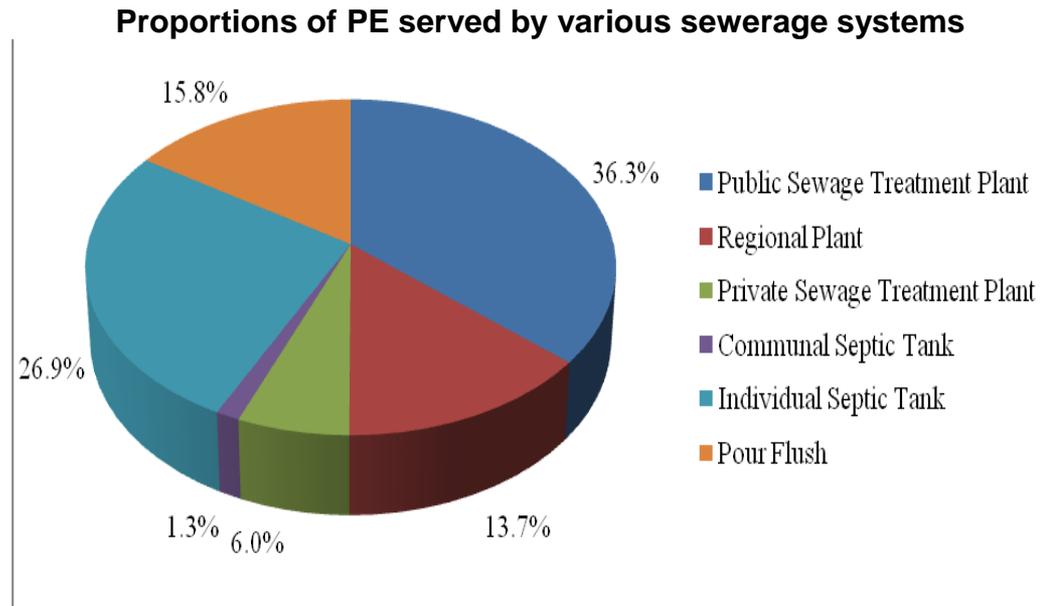
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# Wastewater production and treatment

- 2.97 billion cubic meters of wastewater generated by municipal and industrial sectors per year.
- Dominant wastewater treatment types:
  - Preliminary
  - Primary
  - Secondary



- Major constraints to wastewater treatment
  - low sewerage tariff is unable to support the high operation and maintenance costs;
  - high influent of O&G discharged into STPs;
  - sewerage services collection by operators not conducive; and
  - STPs constructed and handed over by private developers may have risks of quality being compromised, thereby having impact on treatment processes and operations.

# Wastewater use and/or disposal

- No information on the area of food crops irrigated with wastewater
  - No policy yet by Government
  - Availability of surface water
- Effluent from STPs regulated before discharged into surface waters by Environmental Quality Act 1974
  - no direct use of wastewater in the agriculture sector
- Bio-Effluent and Bio-Solids Pilot Project, the Port Dickson Local Authority
  - reuse bio-solids and bio-effluent for landscaping.
- Indah Water Konsortium (IWK) reuse of the treated effluent internal housekeeping or non-potable use in 13 regional plants

# Regulations and implementation of guidelines

- No guidelines and regulations yet for safe use of wastewater for agriculture
- National Water Services Commission (SPAN)
  - Water Services Industry Act 2006
- DOE - regulatory body for wastewater effluent
  - Environmental Quality Act 1974
  - Environmental Quality (Sewage) Regulations 2009
  - Environmental Quality (Industrial Effluent) Regulations 2009
  - National Water Quality Standards for Malaysia
- MOH - regulatory body for food safety
  - Food Act 1983 (Act 281)
  - Food Regulations 1985

# Challenges

- Take for granted that surface water is always in abundance for all uses including agriculture
- Lacking in awareness and knowledge amongst governmental institutions, especially those involved in the management of wastewater and in the field of agriculture and agro-based industry

# Government's approach to wastewater management

- National Water Services Commission (SPAN) regulates the water supply services and sewerage services industry through the Water Services Industry Act 2006.
- Sewerage Services Department is responsible for implementation of STP projects and act as advisory body to the Ministry of Energy, Green Technology, and Water pertaining to sewerage issues.
- Indah Water Konsortium is entrusted with the task of developing and maintaining a modern and efficient sewerage system for all Malaysians.
- DOE defines WQI that leads to the suitability of surface water for irrigation based on the National Water Quality Standards for Malaysia and regulate wastewater effluent quality before discharged into surface waters through:
  - Environmental Quality Act 1974
  - Environmental Quality (Sewage) Regulations 2009
  - Environmental Quality (Industrial Effluent) Regulations 2009

# Possible solutions

- With the inception of the National Environmental Health Action Plan (NEHAP) for Malaysia in 2013, issues on safe use of wastewater for agriculture will be discussed and addressed accordingly.
- The need for knowledge and skills on this matter and the prioritization of needs will be formalized through the implementation mechanism of NEHAP in the near future.

Thank you