

Wastewater Production, Treatment, and Use in Ghana

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Wastewater production and treatment

Production

- Current pop: Approx. 25m
- **The actual annual total wastewater production in Ghana has not been estimated yet!**
- Estimated wastewater production (domestic-urb.) in 2006 is approx. 280 million m³
- Projected values(Agodzo, 2003) :
 - **530,346** m³/d(36%)- yr. 2000
 - **1,452,383** m³/d(45%)- yr. 2020 (Domestic)
- **No data on Commercial & Industrial waster production.**

Treatment

- Less than 8% of wastewaters undergo some form of treatment
Eg. **Out of 44 sewage TPs, only 7 are functioning (some partially)**
- TPs in order of dominance: SPs > TF > AS

Wastewater Usage & Disposal

WW Usage

Informal irrigation:

- wastewater is used as diluted, untreated or partially treated (Cornish *et al.*, 2001).

Areas & Size under cultivation

- **Areas:** Accra-Tema, Kumasi & Tamale
- **Size:** 1000ha or more

Projections

- ✓ If 10% of 280 cubic metres is treated, about 4,600ha could be cultivated.
- ✓ Provide livelihood support for about 9,200 farmers with average farm size of about 0.5ha (Agodzo, 2003).

WW Disposal

- About 5% of wastewaters (grey & blackwater) is disposed off through sewage networks.
- 38% - throw them in the streets or outside their houses
21% - directly into gutters,
35% - in the compound and about 1% in other places
- 20% of HHs do not have toilet facilities:, increases to about 70% in the three northern regions).
- 22% of HHs (mainly rural)s use pit latrines (WWs unavailable).

Regulations and implementation of guidelines

- There exist a national policy on wastewater management- Ghana Environmental Sanitation Policy developed by MLGRD in 2002 and revised 2010.

Government's approach to wastewater management

Wasterwater Management in Ghana is Decentralized!

- The GESP, 2010 mandates the MMDAs the core responsibility of waste (solid & liquid) management in Ghana.

The Policy mandates the MMDAs to ensure the availability of facilities for handling and disposal of domestic, commercial and industrial wastewaters and systems of conveyance- set-up appropriate by-laws

- MMDAs collaborate with; MoFA, HSD of MWRWH, EPA, CSIR-WRI, T&C Planning and NGO (e.g. IWMI) down to the district level to ensure safe use of wasterwater for agriculture

Challenges

Technical

- Lack of Adequate Data on WW production
- Insufficient and low capacity of Treatment plants
- Lack of skills for developing low-cost TPs

Institutional

- Weak O & M capacity of MMDAs due to:
 - a. Lack of human capacity (Gov't constructs. but little or no trg. & unattractiveness of the job env.)
 - b. Poor Funding for O & M by MMDAs

Policy Implementation

- Weak enforcement of adherence to Policy implementation (eg. Use of untreated wws for irrigation) by
 1. Technocrats
 2. Politicians
 3. Allied institutions e.g. EPA

Possible solutions

- Generate comprehensive data on WW production (a basic requirement) to ensure effective planning and management wastewaters
- Rehabilitate all the existing non-functional TPs and expand their capacities to meet current and future demands.
- Create avenues for the provision of skill and appropriate technologies to develop low-cost, simple but effective TPs that can easily be operated and managed by farmers themselves, majority of whom are illiterates.
- Train and/or employ engineers and scientists in especially, the area of wastewater management to ensure effective implementation of the national policy and management of TPs.
- Ensure that adequate funds (IGFs) are generated and/or provided for the maintenance of waste TPs at all times.
- There must be a sustained political will to support technocrats at MMDAs and the allied institutions involved in ensuring the full implementation of the national policy on wastewater management to increase the availability treated wastewater safe use in agriculture in Ghana.