



THE REPUBLIC OF UGANDA

# BASELINE RESULTS AND GUIDELINES ON FSM IN UGANDA

Presented to:  
Parallel Session on Sanitation during JSR-2019

25<sup>th</sup> September 2019

# Presentation Outline

- Background
- Methodology
- Targeted and requested data
- Outcomes
- Recommendations and way forward
- **GUIDELINES ON FSM**
  - Content details

# Background

- FSTPs in operation and more under construction or planned – with inadequate o&m system
- Apac FSTP was to be used as a case – to develop FSM guidelines for small towns
- Undertaking No. 2 (on FSM baseline) and No. 3 (on O&M Framework)
- MWE carried out a baseline for FSTPs and WWTPs across the country to inform the development of the Guidelines.

# Methodology

- Visited 46 Treatment Plants and administered a Questionnaire. 18 dedicated to FS.
- Interviews with the operators

# Target Data

- General information (ID, location, name)
- Status of the TP (operational or not, who operates, functionality)
- Ownership information (land and the facility)
- Implementation of TP project (developer, design report, investment costs, as-built drawings)
- Type of the TP (FS or WW or combined, processes)
- Treatment capacity of the TP
- Monitoring of the TP(dumping records, effluent analysis, pond desludging etc)
- Financial information
- Information on Emptiers delivering FS to the TP

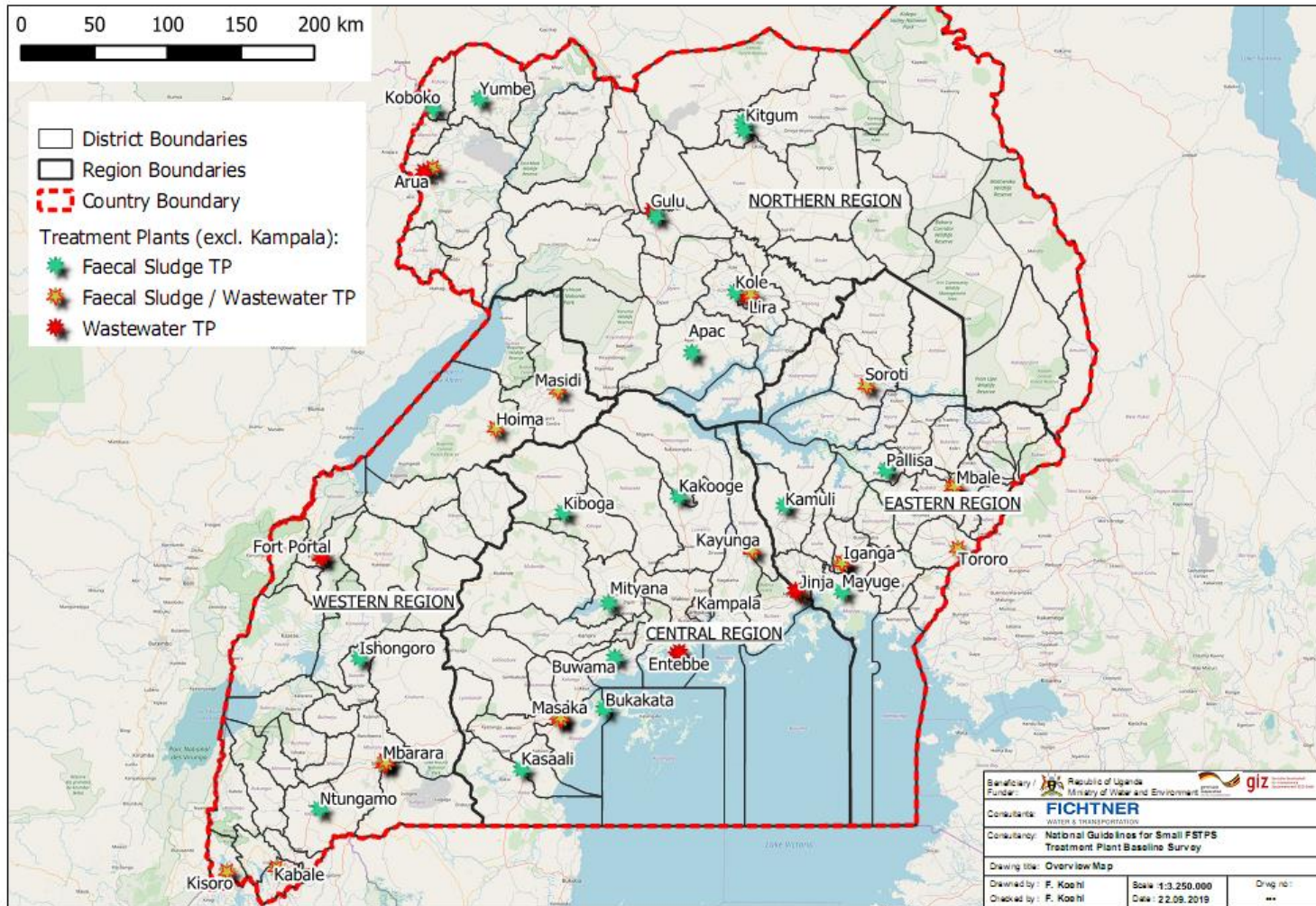
# Results

Table: Surveyed TPs

Treated Influent	In operation	Just Completed (not operated)	Under construction	Under rehabilitation	Abandoned	All TPs
FS	11	2	4		1	18
FS+WW	21					21
WW	5		1	1		7
All TPs	37	2	5	1	1	46

# Results...

## Map of the surveyed TPs



# OUTCOMES...

## Waste Water Treatment Plants (WWTPs)

- All WWTPs are waste stabilization ponds.
- Older than 10 years
- Generally in fair or good condition
- 50% of WWTPs do not have a sludge treatment –from ponds (need of drying beds )
- No operation data made available to analyze and confirm effluent quality (functionality).



# Outcomes...

FSTPs - different treatment processes

- 13 plants have Planted Drying Beds (PDBs)
- 4 plants consist of unplanted drying beds
- 1 paved drying bed

# Key Results - technical

- Plant care issues;
  - Lack of adequate start-up systems
  - Insufficient water or sludge provision
  - Overloads
  - Uncontrolled weed growth
- Clogging issues

# Key Results – non technical

- Lack of marketing (Low Demand for the FSM services)
- No emptiers up country (in small towns)
- No cost recovery by operators (no profit)
- Lack of knowledge and training by the operators
- No data management systems
- Ownership (LG vs Operator)
- Over design (haulage distance is still long)
- Theoretical approach

# WWTPs

## Some illustrations

- WWTPs:
  - usually ponds in fair to good condition
  - Very sustaining TPs

Iganga (Igamba)



Entebbe (Kitoro)



Mbarara (Katete)



- Mytiana : uncovered unplanted drying beds became wild landfill site



# PDBs

Some illustrations : Planted drying beds (PDB):

Mayuge



Pallisa



Kasaali



Ishongoro



Kayunga



Ntungamo



Bukakata



Buwama



# Micro FSTPs

Some illustrations

- Micro FSTPs: Kole and Kitgum



- Other unplanted drying beds (left) and Paved drying beds (right):



# Apac FSTP

Some illustrations :

- Apac Planted Drying Beds



# Recommendations and way forward

- Marketing the plants and available services during operation
- Training of caretakers and setting up o&m system before operation
- Provision of Subsidy by Government
- Online system for data collection
- Down sizing the designs
- Put in place guidelines on FSM (to avoid theoretical approach)



# GUIDELINES ON FSM

- CONTENT
  - Purpose and Scope
  - Planning
  - Detailed Design
  - Authorizations for Construction and Operation
  - Construction
  - Handover & Agreements
  - Operation & Maintenance
  - Monitoring

# Purpose and Scope of guidelines

- Provide practical guidance to various key actors:
  - Planners and decision makers,
  - Designers and engineers,
  - Utilities,
  - Authorities in charge of monitoring and regulation enforcement,
- Guidance on all key stages of a FSTP project lifecycle (Planning, Design, Authorizations, Construction, Handover and agreements, O&M, Monitoring)
- For small FSTPs (up to about 5,000 m<sup>3</sup>/a) in small towns.

# Planning

- Feasibility Studies
  - Emptying service available or concept to build it up
- Scope:
  - Clarification of Responsibilities
  - Demand Assessment
  - FSTP Site Selection
  - Preliminary Cost Estimate

# Detailed design

- End product
- Selection of the treatment processes
- Design parameters
- Environmental exposure risks

# Authorizations for Construction and Operation

- Effluent discharge permits
- ESIA approvals
- Environmental Audits

# Construction

- Current regulation apply (procurements and construction requirements)

# Handover & Agreements

- Land and Facility Ownership

Ownership	Phase 1: Project Implementation	Phase 2: FSTP Operation
Land	Local Government or MWE	Local Government or MWE
Facility	MWE	MWE

- Handover
- FSTP operation (gazette etc) – involve the operator from the beginning
- Agreement “FSTP operator / Pit Emptier(s) / LG

# Operation and Maintenance

- Staff requirements
- Remuneration
- Duties and tasks
- Training
- Standard operation procedures (Record keeping, dumping controls and bed feeding)



# O&M- Apac case

## National Guidelines Operation and Maintenance

Key O&M Duties and Tasks

PDB Start-Up: Apac case

Week no.	PDB bed no.								
	1	2	3	4	5	6	7	8	9
19	-	-	-	50%	50%	-	50%	50%	-
21	25%	25%	25%	25%	25%	25%	25%	25%	25%
23	25%	50%	25%	50%	50%	50%	50%	50%	50%
25	100%	100%	100%	100%	100%	30%	100%	30%	30%
27	-	-	40%	100%	-	-	-	-	100%
28	100%	100%	100%	100%	-	-	100%	100%	100%
29	100%	100%	100%	100%	100%	100%	100%	100%	100%



# Monitoring

- Control that activities and assess the performance of the treatment plant.
- Compliance with the regulations.
- Provision of Data required
- Staff performance
- Quality Management Procedures

# THANK YOU FOR LISTENING

