



Lesson Learned on Faecal Sludge Treatment Plant Over Passive Landfill Site

Rajeev Munankami

With support from Nawatch Surinkul (AIT)

Dr.Muhammed Alamgir and Dr.Khondoker Mahbub Hassan (KUET),

and Md.Sahidul islam (SNV)



Presentation Outline



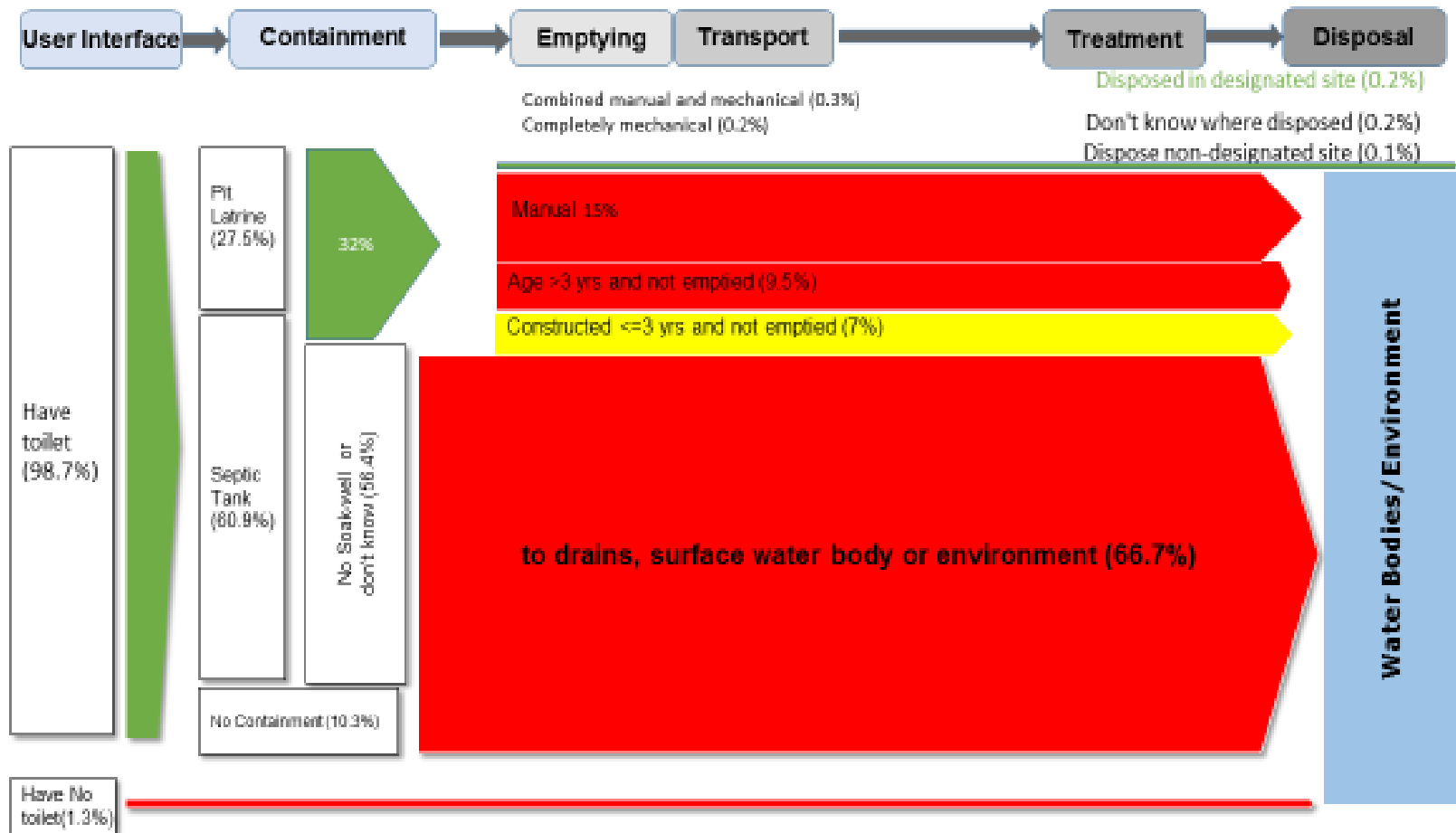
- i. FSM in Khulna
- ii. Site Challenges
- iii. Site Solutions
- iv. Conclusions

FSM in Bangladesh (Khulna)



- Significant improvement in reduction of open defecation
- Effort to close sanitation loop greatly ignored
- Policies in place but lack translation into action
- Isolated initiatives on different parts of sanitation value chain
- Lack of coordination among the actors to implement the policies

SFD Khulna



FSM in Khulna



- land area of 45.65 square km with 1.5M population
- estimated annual volume of fecal sludge generation is 710,000 cubic meter
- Manual desludging around 81%



1. Awareness and demand for services in different areas of the city



Work with People
Community, Schools and
Businesses

3. City wide service delivery, regulation,
planning



Different Government Departments



2. Safe and affordable sanitation services for
toilet construction and emptying



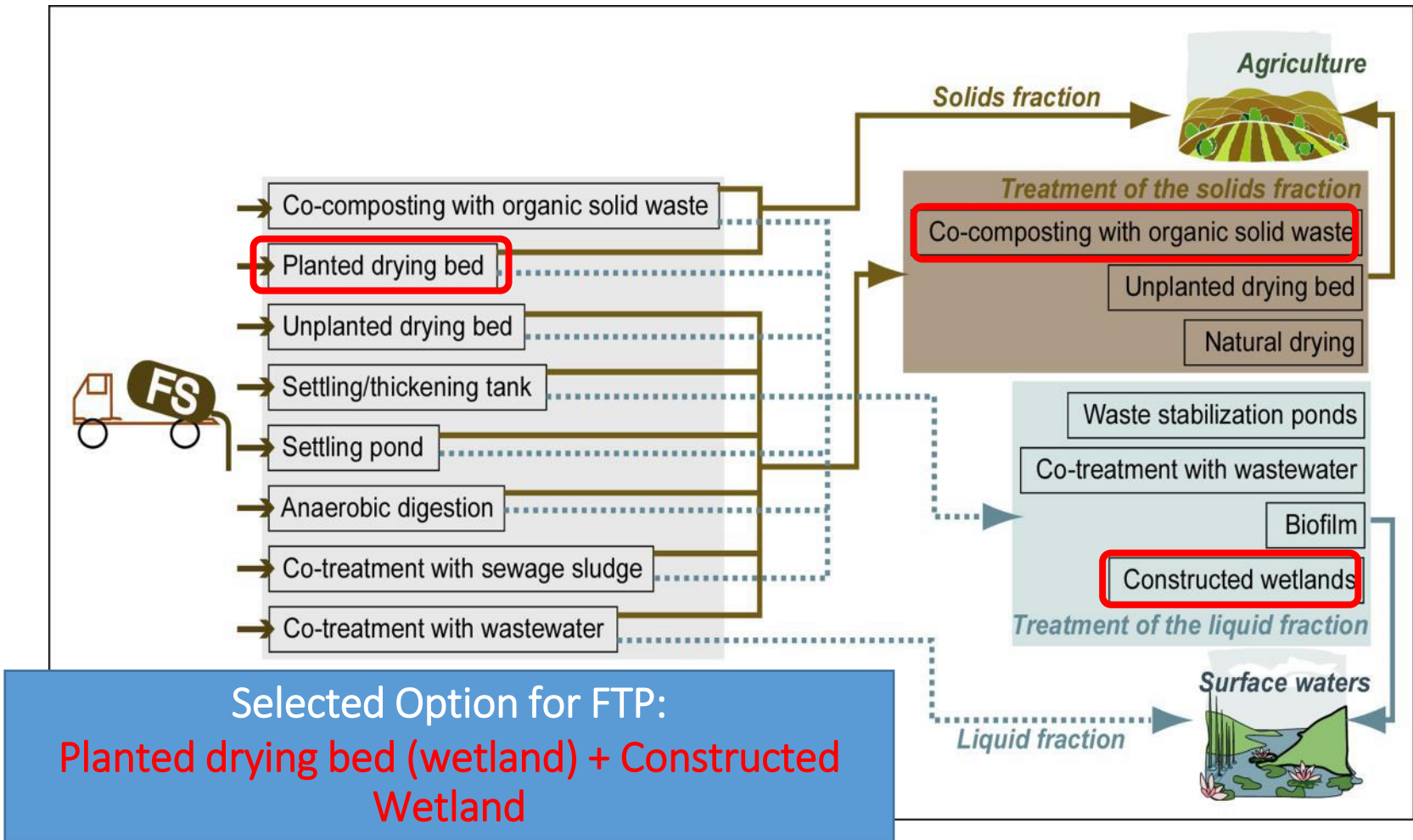
Emptyers and Toilet Builders

4. Informed choice of treatment and re-use
solutions, good
operation and maintenance



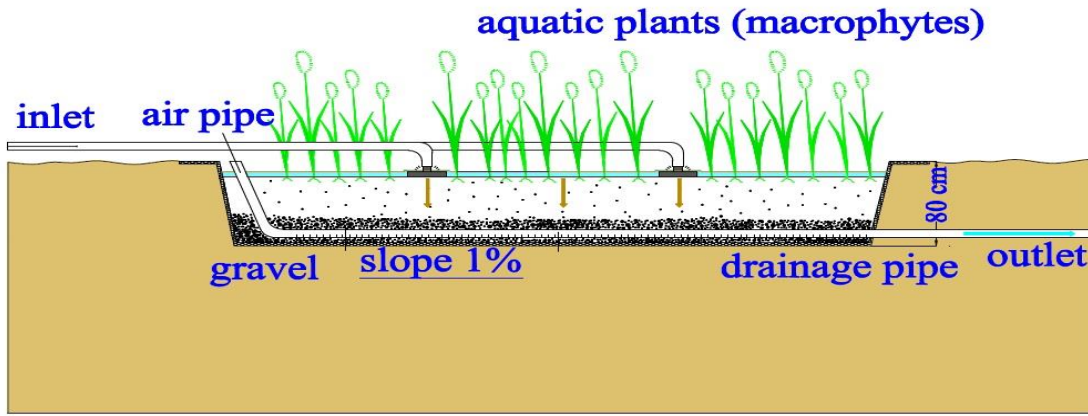
Investors, KWASA

Selected options for FTP

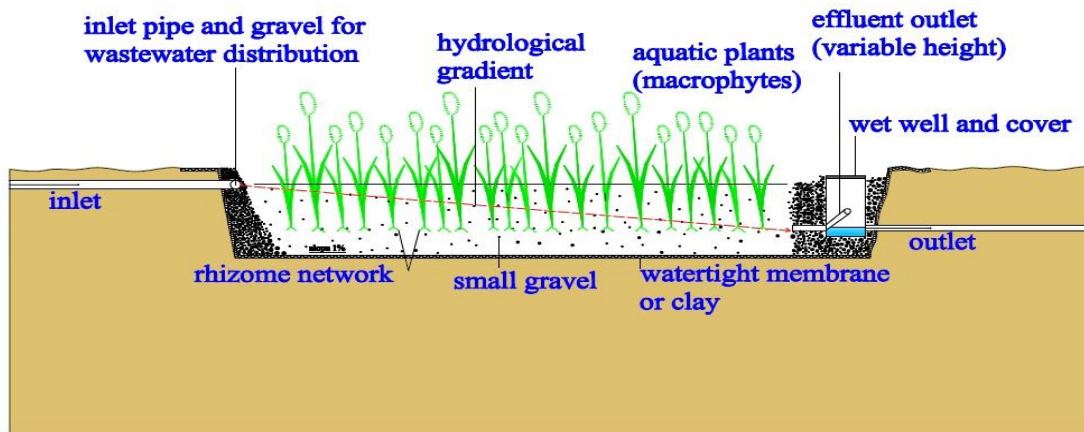


Source: Ingallinella *et al.*, 2001.

Constructed Wetland (CW)



1. Vertical flow Constructed Wetland for Faecal sludge
2. Horizontal Subsurface Flow Constructed Wetland for percolate



Challenges for FTP site



- Scare land
- NIMBY syndrome
- Passive landfill-unstable earth-risks for construction of civil infrastructures

Excavation and Compaction

Test of Soil	Sample-1	Sample-2	Sample-3	Sample-4	Sample-5	Sample-6	Sample-7	Sample-8	Sample-9	Sample-10	Required (%)
Compaction	76	84	84	80	66	76	79	74	80	83	98

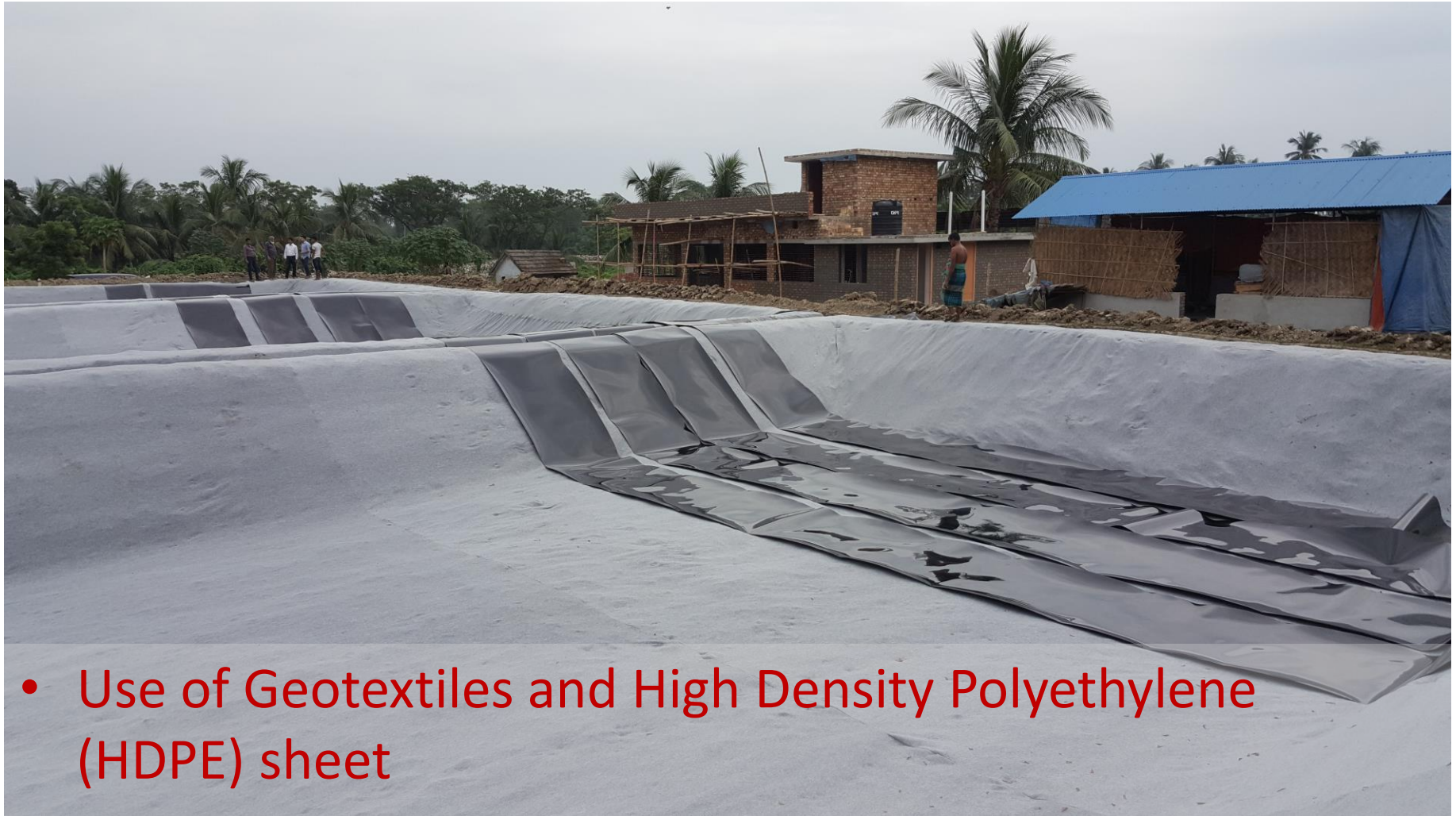


Site Solutions



- Earthen embankments- local expertise available due to massive fishing industries

Site Solutions



- Use of Geotextiles and High Density Polyethylene (HDPE) sheet

Site Solutions



- Distribution and receiving system

Site Solutions



- Filter media: Brick, gravel, reuse of plastic, sand

Commissioning



Implementation challenges

- Lack of competencies for non-conventional infrastructure
- Sourcing of materials
 - HDPE sheet – new in Bangladesh; no skill and material unavailability
 - Filter media- unavailability of filter media for example, stones and shredded PET bottles



Conclusion

- Application of flexible structure like holding pond can be used for FTP approaching on passive landfill site.





Thank-you



For further information please contact at
rmunankami@snvworld.org

