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A Review of Fecal Sludge Management in 12 Cities

Annexure A.7
Dhaka, Bangladesh

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FINAL DRAFT

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Link to full report: http://www.susana.org/en/resources/library/details/2212

A.7 Dhaka, Bangladesh

All data sourced BMGF (2011b) except where shown.

A.7.1. Summary

Population (millions)	16
Percentage of households using on-site sanitation or open defecation	80%
Percentage of total fecal waste (sewage and fecal sludge) safely managed	2%
Percentage of sewage safely managed	12%
Percentage of fecal sludge from OSS safely managed	0%

FSM Framework	Poor
FSM Services	Poor
City Type	1

The sanitation service in Dhaka is extremely poor with virtually all of the fecal waste generated being reused/disposed of unsafely to the environment. The sewer network covers only a small proportion of city and due to dysfunctional sewerage and treatment all but a fraction of the sewage is discharged untreated to the Buriganga River. There is no FSM service chain; the majority of households use a mix of pits, septic tanks and cess pits which are connected/overflow to the river via Dhaka Corporation's storm sewers open drains or local sewer networks.

A.7.2. Institutional framework

Brief summary of who is responsible for urban sanitation in the country and in the city if different…

The statutory responsibility for the sanitation sector in Bangladesh is vested in the Ministry of Local Government, Rural Development and Cooperatives (MoLGRD), while the functional responsibility is delegated to the Department of Public Health Engineering (DPHE) in all rural and urban areas except Dhaka and Chittagong (GoB, 2008).

In Dhaka, the institutional framework for delivery of WASH-related services is complex, with responsibility split between two municipal entities – Dhaka North City Corporation (DNCC) and Dhaka South City Corporation (DSCC) – and Dhaka Water and Sewerage Authority (DWASA) an agency which reports directly to national government. DWASA is an autonomous public body under the MoLGRD, with the mandate to provide water supply and sewerage services to Dhaka's residents; meanwhile the DNCC and DNSCC are responsible for solid waste management, surface drainage and implementation of on-site sanitation in their respective areas. However, while solid waste and surface drainage services are managed, neither Corporation discharges its responsibility for on-site sanitation; consequently there is no organisation within the city that is responsible for disposal of fecal waste generated by those who do not have a sewer connection – estimated to be 80% of the 16 million population. Responsibility for environmental monitoring falls under the auspice of the district office of the Department of Environment but their focus remains restricted to drinking water quality and air quality monitoring and they pay little attention to pollution of surface water bodies by fecal sludge.

A.7.3. The FSM scorecard

Description of key points in SDA scorecard….

Urban sanitation policy in Bangladesh is focused on ensuring access to a sanitary latrine for all households by 2015 using technology options from pit latrines to water borne sewerage (GoB, 2008). However, while it is widely acknowledged that urban sanitation is currently unsatisfactory the management of FS downstream of the latrine is not covered by policy and there are no targets set for improving its management. The GoB focus is primarily on promotion of latrine use and improving coverage rates with little planning or capital investment downstream of the household level.

The FSM scorecard for Dhaka highlights how poor the FSM service delivery is. Looking down the scorecard the scores are very low, and looking across this is true for all aspects of the service chain. There is no investment planning or budgetary allocation at the national level and there is little indication that the MoLGRD is taking steps to improve the situation. Therefore, the sector remains undeveloped and any FSM service operates in Dhaka (and other cities) without regulations, laws, ordinances or bye-laws.

A.7.4. FSM along the sanitation service chain

A brief description of each part of the chain….

Containment:

It is estimated that 1% of the population of Dhaka practice open defecation while 20% are connected to the DWASA sewer network. The balance use a mix of pit latrines, septic tanks and cess pits which are connected to open drains and crude informally-constructed sewers. Owners have modified these containment systems so that rather being “on-site” facilities the fecal waste overflows when the container is full and is carried to the river via open drains and local sewers (and even the Corporation storm sewer network) so there is little or no demand for desludging.

Emptying:

There being little demand for emptying only 10% of non-sewered households use an emptying service. The majority of these (90%) use manual emptiers who bury or dump the sludge in the local environment (BMGF, 2011b and confirmed by Tayler, 2013).

Mechanical sludge emptying is provided by two non-governmental organisations (Dustha Shystha Kendra (DSK) (since 2001) and Population Services and Training Centre (PSTC) (since 2009)) with financial support from WaterAid, Bangladesh. They use small mechanical emptiers known as ‘Vacutugs’ that can access the narrow lanes along which many poor households in the slum areas are situated. However, each NGO only has one machine and it is estimated that less than 1% of fecal waste generated in Dhaka is emptied by this method.

Transport:

The NGOs report that since there is no fecal sludge treatment or disposal facility they discharge fecal sludge to the Corporation’s storm sewer network at locations agreed with Corporation officials. This material therefore also remains untreated and is disposed of unsafely to the environment. There are no private operators who use mechanical pit emptying vacuum type trucks in Dhaka.

Treatment:

There is no fecal sludge treatment plant in Dhaka and it is reported that none of the exhausted sludge is taken to the city’s only wastewater treatment plant at Pagla.

Reuse/disposal:

There is no formal reuse of fecal sludge or wastewater in Dhaka.

A.7.5. Outcome

An overview or summary of the situation (i.e. poor FSM service delivery, limited FSM service delivery or partial FSM service delivery)

Overall the management of fecal sludge in Dhaka is virtually non-existent - all of the fecal sludge emptied from pits remains untreated and the remainder which is not emptied overflows from the various containment systems to be unsafely reused/disposed of to the environment.

References

GoB (2008). *Sanitation in Bangladesh. Bangladesh Country Paper prepared for SACOSAN-III (Third South Asian Conference on Sanitation)*. Government of Banngladesh.

BMGF (2011B). *Landscape Analysis and Business Model Assessment in Faecal Sludge Management: Extraction and Transportation Models in Bangladesh - Final Report*.

Tayler, W. K. (2013) *Personal communication*.

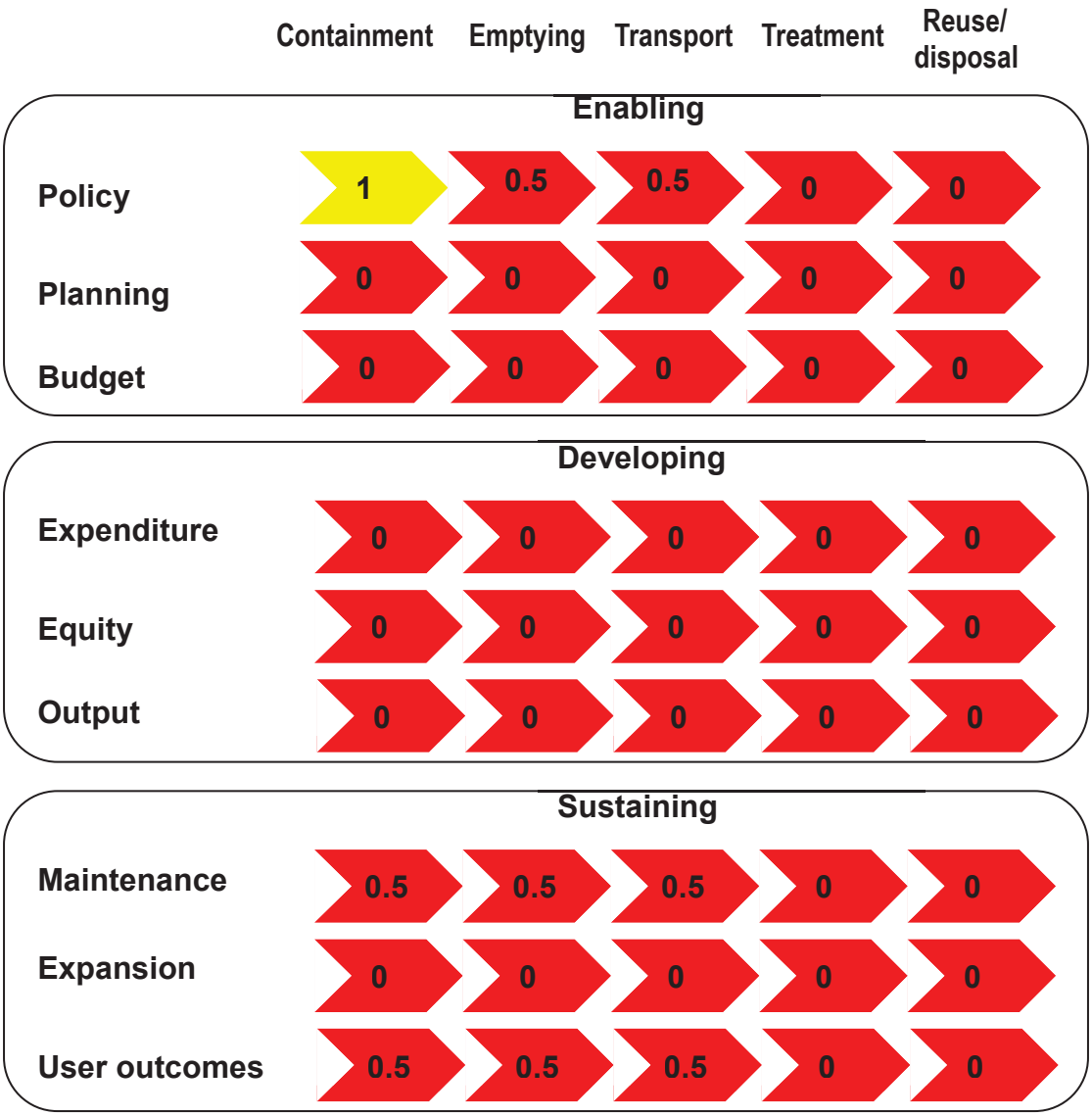


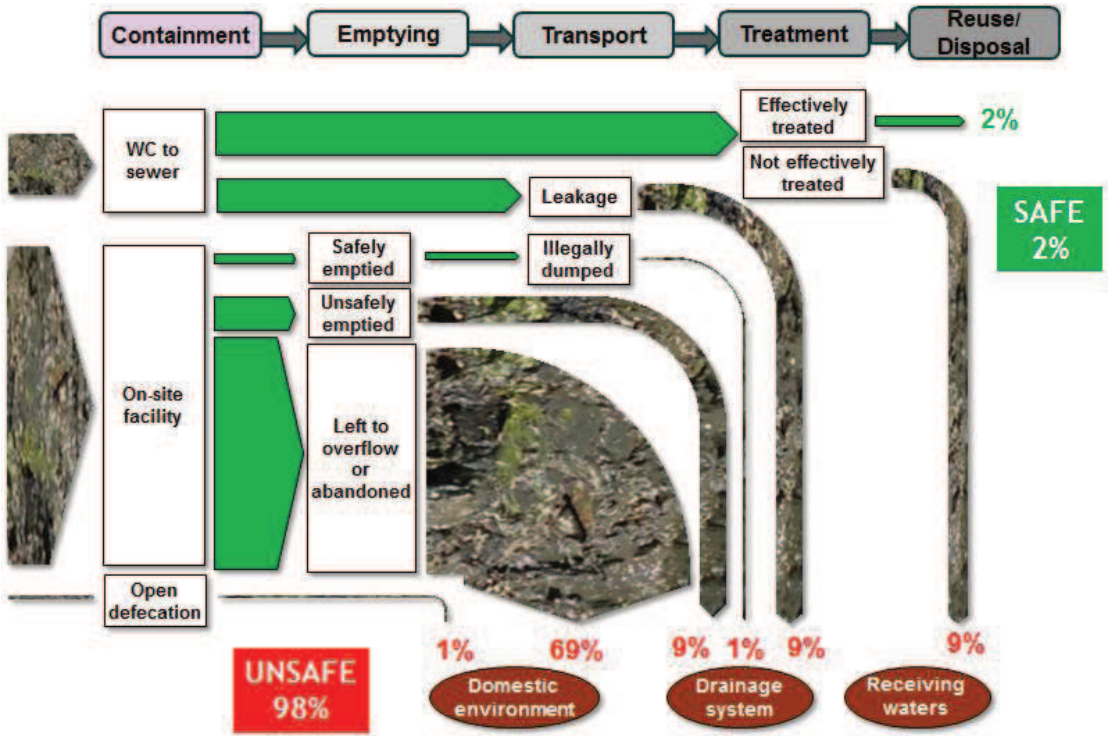
Figure 39: FSM scorecard for Dhaka, Bangladesh

Fecal waste flow matrix Type of system	*% of FW*	*of which safely collected*	*of which safely delivered*	*of which safely treated*	**Safe: 2%**
Sewered (off site centralised or decentralised)	20%	100%	55%	18%	**2%**
On-site containment - permanent/emptiable	79%	1%	0%	0%	**0%**
On-site containment - single-use/not emptied/safely abandoned	0%	100%	100%	100%	**0%**
Open defecation	1%	0%			
Unsafe: 98%		**79%**	**10%**	**9%**	
Affected zones		*local area & drainage*	*drainage system*	*receiving waters*	

Notes:

1: All sources shown in waste flow diagram below.

Figure 40: Fecal waste flow matrix for Dhaka, Bangladesh



Sources: BMGF (2011B) unless stated otherwise.
Open defecation: 1% (BMGF, 2011b and JMP, 2012 for urban Bangladesh)
Sewered 20% (BMGF, 2011b); dysfunctional sewered 45% of production; treatment 12% of sewered (Tayler, 2013)
Non-sewered population: 78%; emptied by NGOs 1% of production; manual emptying 10% of production; not emptied and overflows to environment 89% of production (BMGF, 2011b and Tayler, 2013).

Figure 41: Fecal waste flow diagram for Dhaka, Bangladesh