Financially Viable Management of Vacutug in Khulna city by Community Development Committee

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Bangladesh
Meeting Target of Sanitation MDG

User Interface → Containment → Emptying → Transport → Treatment → Disposal

- Have toilet (98.7%)
  - Pit Latrine (27.5%)
  - Septic Tank (60.9%)
- Have No toilet (1.3%)
  - No Containment (10.3%)
  - No Soak-well or don't know (54.4%)

Unregulated FSM Service

- Containment:
  - Combined manual and mechanical (0.3%)
  - Completely mechanical (0.2%)

- Emptying:
  - Manual 15%
  - Age >3 yrs and not emptied (9.5%)

- Transport:
  - Constructed <=3 yrs and not emptied (7%)

- Treatment:
  - Disposed in designated site (0.2%)
  - Don't know where disposed (0.2%)
  - Dispose non-designated site (0.1%)

- Disposal:
  - Completely mechanical (0.2%)
  - Combined manual and mechanical (0.3%)

- Water Bodies/Environment:
  - Disposal to drains, surface water body or environment (66.7%)
FSM in Urban Bangladesh
FSM Programme in Southern Bangladesh

1. Awareness and demand for services in different areas of the city
   - Work with People: Community, Schools and Businesses

2. Safe and affordable sanitation services for toilet construction and emptying
   - Investors, KWASA

3. City wide service delivery, regulation, planning
   - Different Government Departments

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

Investors, KWASA
Vacutug Service: Emptying, Transportation & Disposal

1. The vacutug operator and driver arrive

2. The contents of the pit/septic tank are pumped out

3. The sludge is transported 15 km for disposal at designated KCC site
Disposal

It’s already polluted so why travel so far...
Vacutug Actors

- Khulna City Corporation
- Community Development Communities (CDCs)
- Residents in Khulna city
- Public and Privates sector service providers (Emptiers/‘sweepers’)
Objectives of the Study

The main **purpose** of the study is to examine the **ways** the CDC-managed **vacutug operation** in faecal sludge management could be a **commercially viable option** to serve the population in Khulna City Corporation.
Nature of Operational Cost

**CDC Service cost:**
BDT 600/USD 7.6 for 1000L

**KCC Service cost:**
BDT 2000/USD 25 for 10KL but expenses is about BDT 7000/USD 90
<table>
<thead>
<tr>
<th>Month</th>
<th>Total Trips</th>
<th>Total Income</th>
<th>Total Expenditure</th>
<th>Profit/ (loss)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr-Jun 13</td>
<td>9</td>
<td>4,700</td>
<td>12,865</td>
<td>(8,165)</td>
</tr>
<tr>
<td>Jul-13</td>
<td>27</td>
<td>12,500</td>
<td>15,664</td>
<td>(3,164)</td>
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<tr>
<td>Aug-13</td>
<td>14</td>
<td>8,500</td>
<td>13,950</td>
<td>(5,450)</td>
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<tr>
<td>Sep-13</td>
<td>1</td>
<td>600</td>
<td>9,026</td>
<td>(8,426)</td>
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<tr>
<td>Oct-13</td>
<td>29</td>
<td>14,400</td>
<td>10,810</td>
<td>3,590</td>
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<tr>
<td>Nov-13</td>
<td>19</td>
<td>10,000</td>
<td>2,529</td>
<td>7,471</td>
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<tr>
<td>Dec-13</td>
<td>4</td>
<td>2,000</td>
<td>6,798</td>
<td>(4,798)</td>
</tr>
<tr>
<td>Jan-14</td>
<td>16</td>
<td>8,000</td>
<td>9,096</td>
<td>(1,096)</td>
</tr>
<tr>
<td>Feb-14</td>
<td>21</td>
<td>10,500</td>
<td>9,768</td>
<td>732</td>
</tr>
<tr>
<td>Mar-14</td>
<td>27</td>
<td>13,500</td>
<td>11,698</td>
<td>1,802</td>
</tr>
<tr>
<td>Apr-14</td>
<td>14</td>
<td>7,000</td>
<td>12,360</td>
<td>(5,360)</td>
</tr>
<tr>
<td>May-14</td>
<td>6</td>
<td>3,000</td>
<td>13,820</td>
<td>(10,820)</td>
</tr>
<tr>
<td>Jun-14</td>
<td>3</td>
<td>1,500</td>
<td>-</td>
<td>1,500</td>
</tr>
<tr>
<td>Total</td>
<td>190</td>
<td>96,200</td>
<td>128,384</td>
<td>(32,184)</td>
</tr>
</tbody>
</table>

Table 1: Trips, Income, Expenditure & Profit (Loss)
Main Findings

• Number of vacutugs vs the scale of the service area
• Vacutugs model/design vs. dense area/small roads
• Minimum worker’s safety
• Social oriented vs. business oriented
• Tariff vs. O (& M) cost
• Sweepers vs. Vacutugs services
• Mechanism to guarantee proper disposal process
• Trenching vs. proper fecal sludge treatment plant
• Sanitation facilities is not only toilets and septic tanks
Challenges

• Illegal connection to storm water drains
• Poor Enforcement of BNBC- No pressure to clean
• Manual emptying still predominant (and relatively cheaper)
• Proper Pricing for Services
• Long hauling to disposal site
• Lack of coordination between Vacutug Team and authorities
• Customer Awareness
• Registration of Vacutug with BRTA (Bangladesh Road Transport Authority)
• Entrepreneurship- less exposure
Meeting on Vacutug Operation and Management

Group work of the CDC

Result of a group work

Group work presentation

Group work presentation
Vacutug training
Occupational Safety and Health in Faecal Sludge Management

A Study in Khulna City Corporation, Kushtia and Jenaidah Pourashava

for

SNV

Study Conducted by
Bangladesh Occupational Safety, Health and Environment Foundation OSHE)

www.oshebd.org

POST
Participation-Oriented Safety Improvements Training for Faecal Sludge Management Workers

Action Manual for Occupational Safety and Health

SNV
Greater Demand of desludging

- Engagement with manual emptier
- Customers bring customers
- Quicker Response to Desludging
- Smart enforcement
- Behavioural Change Communication
- Stakeholders Coordination (KCC and NGOs)
- Local government led awareness building
- Rationalisation of Service Pricing
Other Recommendations

- Government leadership to establish FSM Regulatory Framework with necessary procedures
- Smart Enforcement of regulation (Incentives & Penalties)
- Ensure greater concern and observance of occupational health and safety measures
- Scheduled Desludging
- Decentralised collection points (STS) & Availability of FS treatment facilities
- Promote resource recovery - endues diversification
Thank you!

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FSM PROGRAMME PARTNERS

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