IRRC in Kushtia Municipality: Lessons learned

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IRRC in Kushtia Municipality

- Kushtia Municipality introduced IRRC in 2012 with the help from UN-ESCAP and Waste Concern.
- The IRRC has the capacity of 2 (two) Ton of solid waste per day, and 2000-3000 Liter of faecal sludge per day.
- The IRRC consists of 12 perforated composting boxes, 2 drying bed for Faecal Sludge Treatment and a Coco-pit filter for the treatment of the liquid waste water comes from Vacutug.
- The IRRC has 7.25 acres of land is located about 5 km away from the city centre.
Operation of IRRC in Kushtia Municipality

- The Municipality has outsourced its IRRC to Aprokashi Ltd, a private firm with experience and a license for producing and marketing the produced compost.

- Now, the municipality only ensures that both the organic kitchen/market waste and faecal sludge have been transported to the IRRC through Garbage Truck and Vacutug respectively.

- Manpower involved in the IRRC by Aprokashi Ltd.:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Position</th>
<th>Number</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Manager (Full-time)</td>
<td>1</td>
<td>Male</td>
</tr>
<tr>
<td>2</td>
<td>Environmentalist (Part-time)</td>
<td>1</td>
<td>Male</td>
</tr>
<tr>
<td>3</td>
<td>Supervisor (Full-time)</td>
<td>1</td>
<td>Male</td>
</tr>
<tr>
<td>4</td>
<td>Compost Worker (Full-time)</td>
<td>4</td>
<td>Male-2, Female-2</td>
</tr>
<tr>
<td>5</td>
<td>Security Guard (Full-time), provide by the municipality</td>
<td>3</td>
<td>Male-3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>10</td>
<td>Male-8, Female-2</td>
</tr>
</tbody>
</table>
Solid waste collection under IRRC

- The Municipality has door to door Van service for household organic/inorganic waste collection. It charges only BDT 50/per household per month.

- The Municipality deploy 2 bigger Van in its 2 kitchen market to collect and transport the market waste.

- The Municipality has 6 Garbage Truck to collect solid waste from different transfer station situated within the city.
Faecal sludge collection under IRRC

- The Municipality has 3 Vacutug with the capacity of 1000 Litre, 2000 Litre and 4000 Litre for faecal sludge collection and transport in the IRRC.

- The Municipality does not have enough capacity for both collection and drying of the faecal sludge.

- The municipality has specific service charge system for its Vacutug operation:

<table>
<thead>
<tr>
<th>Sl</th>
<th>Trip/Vacutug Size</th>
<th>1000 Lt.</th>
<th>2000 Lt.</th>
<th>4000 Lt.</th>
<th>Vat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1st Trip</td>
<td>800/-</td>
<td>1000/-</td>
<td>1200/-</td>
<td>15%</td>
</tr>
<tr>
<td>2</td>
<td>Every Next Trip</td>
<td>200/-</td>
<td>300/-</td>
<td>500/-</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Full Empty</td>
<td>500/-</td>
<td></td>
<td></td>
<td>15%</td>
</tr>
</tbody>
</table>

Vacutug Service Charge (In BDT), effective from Aug 2016

Vacutug
Financial analysis of IRRC

<table>
<thead>
<tr>
<th>Expenses (in BDT)</th>
<th>Income (in BDT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries</td>
<td>120,000/-</td>
</tr>
<tr>
<td>Operations</td>
<td>30,000/-</td>
</tr>
<tr>
<td>Maintenance</td>
<td>15,600/-</td>
</tr>
<tr>
<td>Others</td>
<td>15,000/-</td>
</tr>
<tr>
<td><strong>Total Expenses</strong></td>
<td><strong>180,000/-</strong></td>
</tr>
<tr>
<td>Compost</td>
<td>15*15000 kg</td>
</tr>
<tr>
<td><strong>Total Income</strong></td>
<td><strong>225,000/-</strong></td>
</tr>
</tbody>
</table>

**Profit = BDT 45,000/-**
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Steps in Co-composting at IRRC

Regional Workshop on Sustainable Development Benefits of Decentralized Municipal Solid Waste Management in Asia-Pacific Region, Bangkok, Thailand, 30 Nov - 01 Dec 2017
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Positive Local & National impacts of IRRC

- About 10-12 municipalities in Bangladesh are now involved in similar type of waste management who visited the Kushtia IRRC earlier.


- Sanitation Tax has been introduced in the Municipal Model Tax Schedule 2014, earlier it was only conservancy tax (Solid Waste Management).

- The Govt. has engaged Department of Public Health and Engineering in this sector.

- In the early stages, it was very difficult to motivate local farmer/people to use this compost as it comes out from dry faecal sludge, now the demand has significantly increased, especially in last 2 years.

- The number of private entrepreneur trying/thinking to be involved in this sector is significantly increasing throughout the country.

- The amount of open dumping and number of septic-tank illegal connection to drain has significantly decreased in the last 2 years.
Challenges faced by the IRRC

- The trained IRRC labor/staff is not available in the market; every IRRC should have a training centre as well as a mini-lab for its sustainable functioning.

- Marketing of the compost is very difficult as still a significant number of farmer/people trying to think it as an alternative of chemical fertilizer.

- The number of licensed private entrepreneur in Bangladesh is very few due to difficulties in getting it.

- Though the central government has started to work on this, but still it needs to be geared up.

- The present capacity of the IRRC, especially the capacity for faecal sludge management is too insufficient.
Present Concern/Area to work

- Provisioning effective & efficient infrastructure, i.e. Training Centre, Mini-lab, etc. for the IRRC.
- Increase the present capacity of the IRRC, especially the capacity of the faecal sludge management.
- Initiate research activities for different alternative techniques of both solid waste and faecal sludge management.
- Develop a regular capacity building program for the IRRC Labor/Staff.
- Develop a standard guideline for outsourcing IRRC.
Thank You