Session 3: Global and National Experience in Water and Sanitation

Inclusive and Climate Sensitive Sanitation System Planning

April 25 - 27, 2023
Structure of Presentation

Three key learnings to share

1. Finding true beneficiaries for containment improvement
2. Optimum system utilization
3. Towards new sanitation system
1. Finding True Beneficiaries for Containment Improvement

Safe containment access for all including marginalized and vulnerable settlements

- Housing structure typology
- Natural drainage density and municipal drainage network
- 100-meter buffer from the river and 30 meters from other waterbodies to settlement areas
- Road network maps with width details and settlement areas
- Location of institutional, high-rise buildings, industries etc. as bulk volume generator

Working towards a paradigm shift in the global south…
1. Finding True Beneficiaries for Containment Improvement

Settlement identification, designing interventions with implementation priority

Illustrations of Sherpur Town Bangladesh, Supported by AIIB and BMGF

Working towards a paradigm shift in the global south...
1. Finding True Beneficiaries for Containment Improvement

Containment Improvements for Community DEWATs

<table>
<thead>
<tr>
<th>No. Beneficiary</th>
<th>461 Nos</th>
</tr>
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<tbody>
<tr>
<td>HHs within DEWATs</td>
<td>237 Nos</td>
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</table>

<table>
<thead>
<tr>
<th>No. DEWATs</th>
<th>6 Nos</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHs within DEWATs</td>
<td>99</td>
</tr>
<tr>
<td>Total LIC HHs</td>
<td>1710</td>
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</tbody>
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Illustrations of Bogura Town Bangladesh, Supported by AIIB and BMGF

Working towards a paradigm shift in the global south…
2. Optimum System Utilization: Safe Collection

Safe emptying, collection and transport to all

Desludging Scheme

- Inaccessible Region (By Electric carts) 13%
- Needs Electric Pump 22%
- Accessible by small capacity trucks 40%
- Accessible by big capacity trucks 25%

Emptying truck types to ensure the access to 100% settlement area

Proposed desludging infrastructure for settlements

Illustrations of Sherpur Town Bangladesh, Supported by AIIB and BMGF
2. Optimum System Utilization: Integrated Operations

Imagining Block level FSTP integrated with transfer stations

9 Nature FSTP
1 OP + 8 Transfer Station

CAPEX - X
OPEX - Y
Life Cycle Cost – Z
4 times plant capacity augmentation scope

Ripple effects of proposed plant (50 KLD) with ample scope of extending services to even nearby 3-4 blocks with increase in working hours (6 to 24 hrs)

Illustrations of Bahadarabad Block, Uttarakhand, Supported by BMGF and NMCG

Working towards a paradigm shift in the global south...
2. Optimum System Utilization: Accessible Public Toilet

**Input**
- Commercial area, non-residential land use,
- Location and WC details of existing toilets, floating population

**Process**
- Ward wise demand calculated and compared with standards (both WC and units) to understand gaps.
- Gaps are reviewed spatially for recommendation

**Output**
- 9 new toilet blocks (including a She toilet)
- Upgradation of 4 units.

Illustrations of Sherpur Town Bangladesh, Supported by AIIB and BMGF

Upgradation, New Block Construction and She Toilet

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3. Towards New Sanitation System

Re-invented sanitation system

- Toilet replaced by S-HRT and treatment system added for medium strength greywater (preferably nature based)
- On-site solid separation and treatment and solid free waste water treated for end-uses
- Adhering to the interception and diversion (I&D) approach with treatment of greywater (community or centralized)
- Long term solutions without need of dedicated sewerage network and related infrastructure
- 80 to 90% cost contributors in conventional sewerage system are network and ancillary infrastructure.
- Climate resilient and sustainable sanitation solutions

Source – GWSC supported research project to BORDA and Innpact
Key Takeaway

- Solutioning need not to be confined to conventional thinking and larger focus should be towards understanding the value propositions.
- CWIS approach adoption is a must task in sanitation planning and service delivery.
- Climate resilient, inclusive and sustainable services are the top priority and non-negotiable.
- Need of contextual sanitation planning in rural, rather than merely duplicating urban experiences.
- Great application of geo-spatial approach (and technology) in both sanitation system planning and managing.
Thank you!

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