Costing of Rural Sanitation Service Delivery: Case studies from India and Indonesia

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Outline of presentation

I. Motivation for study and research questions

II. Background of Scaling up Projects in India and Indonesia

III. Costing Methodology

IV. Key Findings

V. Conclusions
Motivation for study and main research questions

- Little evidence on resources required to scale up access to rural sanitation
- Cost of hardware (sanitation technology) alone is not sufficient

Research question: What does it cost to deliver sanitation services, at scale, in rural contexts?

- Who bears the burden of these costs?
- What are the major cost drivers?
- How much are households willing to invest?
# Total Sanitation Campaign in India, MP

## Government
- **Government-led program** started in 1999
- **Community-led Total Sanitation**: Triggering & follow-up
- **Subsidy to poor households**: (BPL) Rs 2,200 (40 USD)
- **Construction of sanitation facilities**
- **ODF Community Awards**: Nirmal Gram Puraskar (NGP)
- **Behavior Change Communication**
- **Monitoring & reporting**

## WSP
- **Technical assistance**: benchmarking, monitoring, planning, budgeting
- **Capacity building**: CLTS methodology, supply-side strengthening
- **Program management**
- **Support to enabling environment**

## Households
- **Toilet construction & maintenance**
Total Sanitation and Sanitation Marketing in Indonesia (SToPs) East Java, 29 districts

**Government & Community**

- **Community-led Total Sanitation**: Triggering & follow-up
- **Social marketing of sanitation**: informed-choice catalog
- **Behavior-change communication**
- **Sales & construction of latrines**
- **Monitoring & reporting**
- **Meetings & workshops**

**WSP**

- **Technical assistance**: benchmarking, monitoring, planning, budgeting
- **Capacity building**: CLTS facilitators, sanitation entrepreneurs
- **Program management**
- **Support to enabling environment**

**Households**

- **Toilet construction & maintenance**
Costing Methodology
Cost data obtained from 3 sources and combined for analysis

<table>
<thead>
<tr>
<th>Source of cost data</th>
<th>Data collection method</th>
<th>Sample design</th>
<th>Time period covers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 WSP administrative data</td>
<td>Document / records review</td>
<td>100% accounting of expenditures</td>
<td>mid 2007 – mid 2011</td>
</tr>
</tbody>
</table>
2008 – 2009 (East Java) |
| 3 Household | Interviews | Representative sample of households in project areas | 2009 – 2011 (MP)  
2009 – 2011 (East Java) |

- Activity-based costing (ABC) – all inputs (time and resources) required to produce outputs
Sample size

- 2 sub-districts (blocks) and villages (GPs) in each district
- 15 interviews with local government of 352 activities
- 17 interviews with masons & engineers of 120 activities
Sample size

- 3 sub-districts and villages in each district
- 29 interviews with local government and community of 250 activities
- 17 interviews with resource persons of 156 activities
Calculation of costs

On average, how much does it cost each year to run this program reaching this many people?
Key assumptions and data limitations

**Key Assumptions**

- Lifespan of inputs:
  - Direct project support & operating costs annualized over 4 years
  - Capital costs annualized over 10 years

- Value of time:
  - Household time to install latrine valued at GDP per capita
  - Govt. staff time valued using average wages for all project staff
  - Volunteer time valued at equivalent wage of local day-laborer

**Data limitations**

- Costs obtained from interviews with government, community and households rely on respondent recall and are self-reported
Key Findings
How are government, community partners and households sharing costs of sanitation programs?

**Madhya Pradesh ($3.27)**
- Hardware subsidy makes up 72% of all government costs
- Households invest 7 cents (equivalent in time) for every $1 put in by program

**East Java ($1.26)**
- Household contribution nearly equals that of government & community partners combined
- Households contribute 72 cents for every $1 invested by the program
How are government and community partners spending resources? Top cost drivers

**Madhya Pradesh**
($2.94)

- NGP award process $0.05
- Sales & construction non-HH sanitation facilities $0.05
- Oversight of latrine construction $0.15
- Sales & construction of latrines (masons) $0.42
- Triggering & follow-up $0.04
- Hardware subsidy $2.14

93% of costs in India on hardware subsidy, sales and construction of latrines

**East Java**
($0.63)

- Training TSSM $0.03
- Social marketing / BCC $0.03
- Social marketing / BCC $0.03
- Meetings & workshops $0.14
- Sales & construction of latrines $0.17
- Roadshows & socialization $0.10
- Triggering $0.11

43% of costs in Indonesia spent on software support
Majority of costs to govt. and community partners are for time spent on project activities

<table>
<thead>
<tr>
<th>Region</th>
<th>Monetary</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Madhya Pradesh</strong> ($0.83)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional</td>
<td>99.9%</td>
<td></td>
</tr>
<tr>
<td>District</td>
<td>36.8%</td>
<td>63.2%</td>
</tr>
<tr>
<td>Sub-District</td>
<td>10.9%</td>
<td>89.1%</td>
</tr>
<tr>
<td>Village</td>
<td>39.9%</td>
<td>60.1%</td>
</tr>
<tr>
<td><strong>East Java</strong>   ($0.63)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>District</td>
<td>27.0%</td>
<td>73.0%</td>
</tr>
<tr>
<td>Sub-District</td>
<td>16.4%</td>
<td>83.6%</td>
</tr>
<tr>
<td>Village</td>
<td>25.9%</td>
<td>74.1%</td>
</tr>
</tbody>
</table>

* Excludes hardware subsidy
Households report spending up to 30% of a month’s income on average to improve their sanitation.

**Madhya Pradesh**
- Households invest **$59 USD** on average for latrine construction.
- Poor households invest less: only **$25 USD** (non-poor **$111**).
- Investment is 7.5% of one month’s average household income (reported).

**East Java**
- Households invest **$110 USD** on average for latrine construction.
- Poor households invest **$96 USD** vs. non-poor **$115 USD**.
- Investment is 30% of one month’s average household income (reported).
Conclusion
Key Findings

- Choice of service delivery model leads to major shifting of the cost burden:
  - In East Java, a program focused on demand generation results in nearly equal costs between government/community partners and households
  - In MP, burden of service delivery is on government to deliver hardware subsidies resulting in lower cost sharing by household

- Sanitation program in MP spends little on software, putting most resources into delivery of hardware

- Rural sanitation service delivery, whether in MP or East Java, is human resource intensive – bulk of costs for time spent on project activities

- Households, even poor, are willing to invest substantial amount to improve sanitation, reducing burden on government
Next steps for this and future studies

- Cost-effectiveness of the projects on outcomes: reduction in open defecation, latrines constructed, health impacts

- Sensitivity analysis (lifespan of capital inputs, # beneficiaries, etc.) can help to further understanding of these results

- Methods should be replicated in other large scale sanitation programs studies – ideally using prospective costing
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Thank you!

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