

## Small-Scale Sanitation Scaling-Up (4S)

Eawag/Sandec is partnering with the Indian Institute of Technology (IIT) Madras, and BORDA, Germany, to carry out the first systematic assessment of small-scale sanitation systems in South Asia. The 4S project is funded by the Bill & Melinda Gates Foundation and its main goal is to develop evidence-based policy recommendations for improved sanitation system design, implementation, operation and maintenance.

### Context

Small-scale sanitation systems are currently at an inflection point. In the past decade they have proven to be a viable alternative to conventional large-scale centralised systems. Some of their most significant advantages are: flexibility, modularity, and cost-effectiveness. An increasing number of small-scale sanitation systems are being installed in India and other South Asian countries, allowing for local water reuse and pollution abatement. Yet, these recent developments have not been informed by an assessment of lessons learned or an analysis of sound system operations and robust business models. There has been little or no research of the enabling conditions and implications for the successful operation and management of small-scale sanitation systems at scale. Small-scale systems often suffer from the lack of proper management and insufficient monitoring schemes. Guidelines on how to invest in and design scaled up small-scale sanitation projects and programmes are lacking. Scaling up such systems entails more than replicating a large number of discrete projects. It requires standardisation, innovative management and institutional schemes, inclusion of the private sector, and innovative financing plans.

### Objectives

Based on the systematic assessment of more than 300 sanitation units, the 4S project seeks to provide sound empirical evidence for future small-scale sanitation sector investments in South Asia. This will allow decision-makers to make informed strategic decisions about sanitation systems and to

accelerate the provision of city-wide collection and treatment services for used water and sludge. The specific objectives of this research are:

- To investigate the technical, financial, management and environmental performance of existing small-scale sanitation systems
- To develop a cause-impact framework for the success and failure of small-scale sanitation systems
- To carry out a simplified comparative cost-benefit analysis
- To determine in which contexts a small-scale approach is optimal and sustainable
- To translate research results into recommendations for project planning, programme development and future investment

### Expected Outputs

The 2.5 year research project will have three key outcomes:

- A landscape study of small-scale sanitation systems in South Asia
- A detailed socio-economic and technical evaluation of more than 300 units in India and Nepal, including an institutional analysis, and an in-depth investigation of selected systems through sampling campaigns
- Policy recommendations to improve the regulatory framework and sanitation system design, as well as implementation and O&M guidelines based on the evaluation findings



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#### Duration:

October 2015 to June 2018

#### Funding:

- › Bill & Melinda Gates Foundation
- › Germany Ministry for Economic Cooperation and Development

#### Partners:

- › IIT Madras, India
- › BORDA, Germany
- › CDD Society, India
- › ENPHO, Nepal

#### Further information:

[www.sandec.ch/4S](http://www.sandec.ch/4S)

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March 2018

