

SSP FOR PERI-URBAN TOWN DEVANAHALLI, INDIA

CASE STUDY

General data

Location	Devanahalli, 40 km north of Bangalore, India.
Scope: SSP boundaries and focus sanitation activities	<p>Scope was generally within the municipal boundary of the Devanahalli Town.</p> <ul style="list-style-type: none"> • Liquid waste management (no pipes sewerage – open drain collection system) including use of wastewater by small farmers within and just outside of town boundary • faecal sludge management and use of faecal sludge by farmers • solid waste management
Scale of SSP system	<p>6000 households – approximately 30 000 population.</p> <p>Liquid waste approximately 1.2 million litres per day.</p> <p>Solid waste: 12–15 tonnes per day.</p>
SSP objectives	To identify risks and mitigate sanitation linked health risks for all stakeholders in Devanahalli town and create appropriate partnerships with resource partners to enable the same.
SSP teams	<p>Six members.</p> <ul style="list-style-type: none"> • Karnatka Urban Water Supply and Drainage Board (KUWSDB) (Water and Waste Water Learning Centre) • Devanahalli Town Municipal Council (environment and health officers) • Health expert from a Medical College involved in related health risk assessment in the town • External consultant facilitation and technical support
Key stakeholders	In addition to lead organisations and stakeholders, local farmers, agriculture research institute.
SSP timelines	<p>Initial training: August 2013.</p> <p>Substantial draft: March 2014.</p>
Lead organizations and supporting agencies	<p>KUWSDB</p> <p>Devanahalli Town Municipal Council</p> <p>St Johns Medical College – Department of Community Health</p> <p>Biome Environmental Trust</p> <p>World Health Organization</p>



Grape vines nourished by Devanhali's faecal sludge.

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Washing potatoes before transport to market.

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Pertinent context

This town is representative of many of the 213 towns in the state of Karnataka, India. It is completely dependent on groundwater for all water needs and water is scarce. It has no piped sewage networks or sewage treatment plants. The town has a mix of onsite sanitation systems and wastewater flows in open storm water drains. Solid waste collected in the drains compounds the problems by choking flow of sewage in the drains. Town municipal councils need to find incremental solutions to protect public health until larger investments are made in piped sewage infrastructure.

The sanitation safety planning was conducted in this town as a part of a larger “Resource Recovery and Reuse” Research program driven by IWMI, WHO and Swiss TPH. Biome Environmental Trust was a local partner of this program and facilitated development of all pertinent local partnerships to enable the Sanitation Safety Plan trial in Devanahalli.

Key identified risks

A selection of some of the high risks were associated with liquid wastes:

Sanitation step	Hazard and exposure pathway	Existing controls
Cleaning the solid waste from the open liquid waste drains – lack of segregation of bio-medical waste	Injuries through sharp items	Gloves, boots are provided, but use is suboptimal Tools are provided and are appropriate
Clogged drains lead to flooding in neighbourhood	Range of microbial pathogens with skin contact and accidental ingestion pathways	Maintenance of the drains
Clogged drains lead to water stagnating sites	Vector (mosquitoes and flies)	None
	Microbial contamination of drinking water (intermittent water pipes and groundwater)	Drain maintenance

Interestingly, reuse of waste-water in agriculture and use of faecal sludge in agriculture was found to pose limited risks. Irrigation and composting practices posed the first health risk barrier to farmers. Cultural hygiene practices by farmers (washing of hands, feet and regular baths) were found to be a risk barrier for the farmers. Washing of produce before transport to market and peeling and cooking cultures of agri-produce were found to be risk barriers for consumers.



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Key outcomes and benefits

The most important outcome of the SSP was the new levels of awareness in the town administration of linkages between sanitation and solid-waste management from a health perspective. The town now also recognizes the informal use of these wastes as a resource in agriculture and considers these informal users/uses as a potential part of the solution. However it also recognizes that engagement with these stakeholder is necessary to bring more science to these practices to ensure its complete safety. As a result of the SSP, the town has also attracted other development sector players to make this town a test site for a Faecal Sludge Treatment plant that has already been implemented. This is the first faecal sludge treatment plant in Karnataka. The town is also integrating solid waste co composting into this treatment plant.

Vision for scaling and next steps

The SSP team of Devanahalli already involves key stakeholders of the government. Given that the town has the first faecal sludge treatment plant, it is attracting different kinds of audiences from both the government sector and the private development sector players. SSP will now be applied to the faecal sludge treatment-solid waste co composting plant operations. This will provide a good demonstrative platform to advocate to relevant government and non-government stakeholders on the SSP approach – this platform becomes a spring board to drive larger scaling thought processes.

Enabling policy environment linkages and implications

The above platform is also being used to create new champions for SSP – such as the organisation that has commissioned the faecal sludge treatment plant. Through the above demonstrative platform, the current and new local champions of SSP will continue to advocate the approach with key policy makers – particularly the Directorate of Municipal Administration. This will create a policy discourse that lead to appropriate policy environments.



Devanhali farmers beside the simple pre-treatment pond on their farm.

© Darryl Jackson



Devanhalli vacuum tanker ready for service.

© Darryl Jackson

Success factors

The critical success factors of the trial have been:

1. 3 young professionals formed the core set of “soldiers on the ground” – they cared for the town, they displayed ownership of the process
2. Appropriate partnerships with civil society organisations – facilitating organisation and organisation bringing in the health expertise.

Challenges

1. Time and resource constraints: Municipal officers SSP time constantly competing with everyday work demands and lack of skills related to the potential web based / GIS data tools of the town and area
2. Work pressures: SSP work was perceived as over and above normal work.
3. Lack of incentives for core team members to take in this extra burden.
4. Engaging and bringing on board the elected representatives of the town.



MORE INFORMATION/REFERENCES

SSP manual Example 1.3 & 1.10

<http://brokentoilets.org/article/fecal-sludge-a-local-story/>