

MAPPING SANITATION SOLUTIONS

A REPORT IN COLLABORATION WITH LSHTM AND DOMESTOS

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MAPPING SANITATION SOLUTIONS

Introduction: talking about toilets

We all like to think about food; we eat in restaurants, spend much of our income in food shops, and look forward to what we are going to eat tonight. But who thinks about the other end, what happens as a result of all that eating? We hide the sewer system beneath ground, we put cleaning products at the back of the cupboard and it's not polite to talk about toilets. Yet for a billion people, this reluctance to face the problem of sanitation means that they have no toilet at all. Men and women, the young, the sick and the elderly have to defecate in the open, day-in day-out, at night, in the sun, in rain and the mud, in fields, by roadsides and in vacant city lots. Another 1.5bn people, more than a third of the 7.1bn people alive today do not have a safe toilet. Without toilets girls cannot go to school when they are menstruating. Without toilets hospitals, markets, workplaces are sources of infection, and without sanitation the environment is assaulted by millions of tonnes of human waste.

So what should be done? Thankfully, huge numbers of organisations have started to talk about toilets, and investment in sanitation is becoming a priority for the international community. Yet, because the topic has been so neglected, we still do not have very many good solutions, certainly very few that have worked at a large scale, and we do not know enough about what works and what does not. New approaches and new solutions that should have been tried and tested long ago are only now starting to find the support that they need to be brought to scale. Business-led solutions, which promise true sustainability without the need for subsidy, aid or government grant have been particularly neglected.

This document attempts to survey emerging solutions which have the potential to teach us something about sanitation solutions, especially from the perspective of sanitation as a business. We ask what was currently happening in the sector. What are the models that are currently being deployed around the world? What is their current reach and what is their potential for scaling up via the market? We wanted to 'know what we know' about sanitation models and approaches that are already in the field. Hence this report.

In some areas of public health it is possible to carry out systematic reviews into interventions that have worked, however, one of the problems of the sanitation field, vital as it is for public health, is the lack of academic attention and rigorous evaluation. This review has hence had to be based on non-independent sources, largely from the implementing organisations themselves and their reports of their activities. We conducted a rapid horizon scan of existing sanitation approaches in Asia, Africa, Latin America and South East Asia, searching for existing reports, working papers, fact sheets, handbooks, and website material from relevant NGOs, International Organisations, Private Sector Business and Research Institutes, as well as personal correspondence with sector actors. This search produced a total of 41 approaches to sanitation (see table).

We then selected 19 of these models to feature in this compendium, either because they used an interesting approach to demand creation, or because they had managed to show that they could have impact at a large scale. We agreed to focus more on methods and approaches to sanitation as a commercial enterprise and not on the many new products and toilet designs that are currently under development and testing. Neither did we look at Government and para-government large scale city sewerage programmes, since the role for commercial business in such enterprises is limited.

With our target list we contacted the organisations that were responsible and asked them to provide information about their models, as well as collating what was available from public sources. Not all organisations provided all that we asked for, but we here feature the 19 models for which we were able to collect significant information, all collated in a common template.

This following pages of this document therefore contain collated details about the models coupled with a final page of reflections, conclusions and further questions that need answering.

It is our hope that this document will be widely used by the 'sanitation world'.

	MODEL NAME	RATIONALE FOR SELECTION		PAGE
		INTERESTING DEMAND APPROACH	HAVE ACHIEVED SCALE	
1.	BORDA	✓		6
2.	BRAC WASH		✓	8
3.	CATS (UNICEF)		✓	10
4.	Clean Team	✓		12
5.	CLTS	✓		14
6.	Community Health Clubs	✓		16
7.	E-Kutir	✓		18
8.	Gram Vikas	✓		20
9.	Gramalaya		✓	22
10.	IDE-Sanmark		✓	24
11.	PeePoo toilets	✓		28
12.	3SI		✓	30
13.	Sanergy		✓	32
14.	Scaling Up Rural Sanitation (WSP)	✓		34
15.	Selling Sanitation (IFC)		✓	36
16.	Sulabh International		✓	38
17.	WASH United	✓		40
18.	WaterShed		✓	42
19.	WSUP/Wateraid SanPlat programme	✓		46

Other models which appeared in our search but were not selected are listed below in alphabetic order:

- | | | |
|---------------------|---------------------------------|--------------------------|
| 1) Arkin Creations | 8) Gulper technology | 15) Saraplast |
| 2) Autotarky | 9) Honeysucker | 16) Solar International |
| 3) Banza | 10) Mohan Rail (MRCPL) | 17) Together Association |
| 4) East Meets West | 11) Parishudh | 18) Toilet academies |
| 5) Ecotact | 12) Paulee CleanTec / Ashpoopee | 19) Waste enterprisers |
| 6) Eram Scientific | 13) Potty Project | 20) Water For People |
| 7) Gates Foundation | 14) Sanishop | 21) WaterLife |

Model components key



Disclaimer: This resource is a synthesis of good practices. While every effort has been made to obtain permission for the inclusion of materials and to verify that information is from a reputable source, checks have not been possible for all entries. Therefore, users are encouraged to follow up with the original references when considering using sections of this document. The information, numbers and costs quoted are correct at time of going to press (November 2013). This resource is for information only and all examples of commercial products included within it are for learning purposes only and do not suggest endorsement by the authors and co-publishing organisations.

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1 BORDA
Asia: Afghanistan, Cambodia, India, Indonesia, Laos, Nepal, Philippines, Vietnam.
Africa: Lesotho, South Africa, Tanzania, Zambia
Latin America: Mexico

2 BRAC
Asia: Bangladesh

3 CATS (UNICEF)
Africa: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo Brazzaville, Côte d'Ivoire, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Gambia, Ghana, Guinea Bissau, Guinea Conakry, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, Senegal, Sierra Leone, South Sudan, Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe.
Australasia: Kiribati, Papua New Guinea, Timor Leste, Solomon Islands.
Asia: Afghanistan, Bangladesh, Cambodia, China, India, Indonesia, Lao, Myanmar, Nepal, Pakistan, Philippines, Vietnam, Yemen.
Latin/Central America: Bolivia, Haiti.

4 CLEAN TEAM +WSUP
Africa: Ghana

5 CLTS
Asia: Afghanistan, Bangladesh, Cambodia, China, India, Indonesia, Kiribati, Lao PDR, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Papua New Guinea, Solomon Islands, Timor Leste.
Middle East: Yemen.

Africa: Angola, Burkina Faso, Benin, Cameroon, Chad, Cote d'Ivoire, DRC, Djibouti, Egypt, Eritrea, Ethiopia, Gambia, Ghana, Guinea Bissau, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Nigeria, Sierra Leone, Sudan, South Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe.
Latin/ Central America: Bolivia, Haiti.

6 COMMUNITY HEALTH CLUBS
Africa: Zimbabwe, Namibia, East Africa: Uganda, Rwanda, Sierra Leone, Guinea Bissau
Asia: Bangladesh, Vietnam
Caribbean: Dominican Republic

7 E-KUTIR
Asia: India

8 GRAM VIKAS
Asia: India (Odisha)
Africa: pilot in Tanzania and Gambia



9 GRAMALAYA
Asia: India (Tamil Nadu)

10 IDE-SANMARK
Asia: Cambodia, East timor, Laos, Bangladesh, Nepal
Africa: Zambia and Ethiopia (pilots)

11 PEEPOO
Africa: Kenya
 South Africa, and Bangladesh (Pilot tests).
Emergency Camp: Pakistan, Kenya, Haiti and New Zealand.

12 3SI
Asia: India (Bihar)

13 SANERGY
Africa: Kenya

14 SCALING UP RURAL SANITATION
Africa: Ethiopia, Kenya, Niger, Senegal, Tanzania, Uganda
Asia: Cambodia, India, Indonesia, Lao, Pakistan, PDR, Philippines, Vietnam

15 SELLING SANITATION
Africa: Kenya

16 SULABH INTERNATIONAL
Asia: India, Afghanistan and Buthan

17 WASH UNITED
Africa: South Africa, Kenya, Uganda,
 Lesotho, Ethiopia, Tanzania, and Ghana
Asia: India

18 WATER SHED
Asia: Cambodia

19 WSUP-Wateraid
Africa: Madagascar



BORDA - Decentralised Wastewater Treatment Systems (DEWATS)

What is it & for whom

BORDA (Bremen Overseas Research & Development Association) is a non-profit expert organisation, established in 1977, working on poverty alleviation and sustainable protection of natural resources. Its mission is to improve the living conditions of disadvantaged communities and to keep the environment intact through decentralised sanitation, water and energy supply as well as wastewater and solid waste disposal. Among the technologies promoted by BORDA are: Decentralised Wastewater Treatment (DEWATS) on Community Based Sanitation (CBS), as well as Decentralised Solid Waste Management (DESWAM) and Decentralised Water and Energy Supply. Here, the DEWATS systems connected to communal sanitation centres (CSC) are discussed.

KEY PARAMETERS

- Selling price / toilet: varies according to context
- Longest installed toilet: First biogas toilets implemented in 1978

Partnership ecosystem

Since 1977 more than 1,000 projects have been undertaken in 13 countries in cooperation with government ministries, local governments, NGOs, communities, small and medium-sized enterprises (SMEs) and public facilities (schools, hospitals, and prisons).

Sustainable business model

Demand responsive: only those communities/ households willing to participate in planning and training activities and to manage the costs and O&M of the DEWATS technology are selected. BORDA's approach employs:

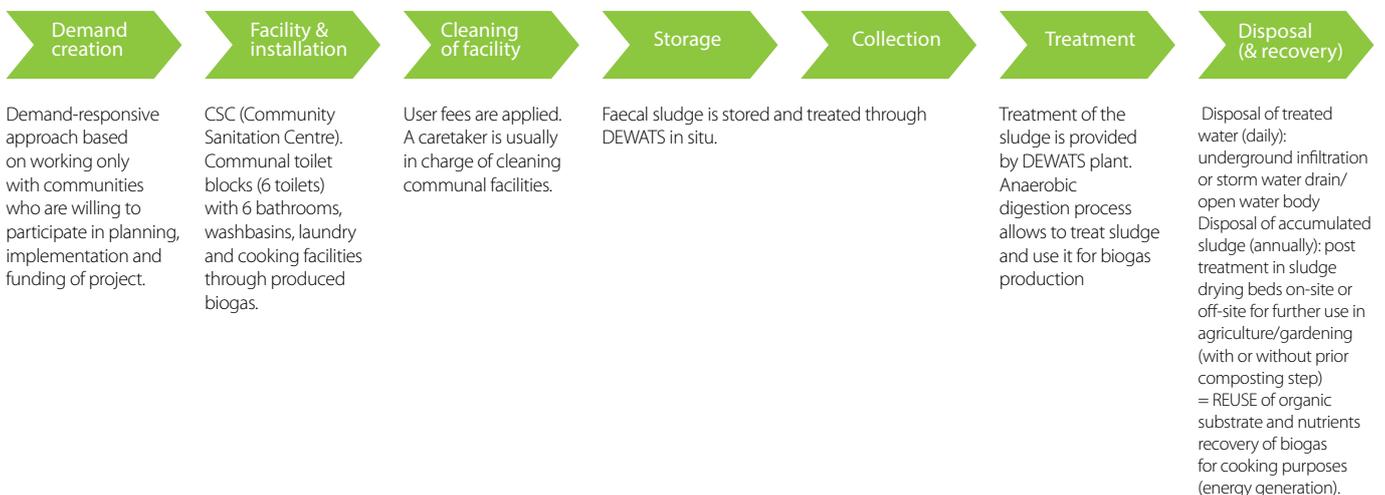
- **Rapid Participatory Assessment:** beneficiaries identify conditions in the community and assess users' needs and willingness to pay for the technology.
- **Community Contribution Plan:** contributions in kind (labour and material) and in cash (users fees collection equal to 2-5% of the investment costs).

- **Community Action Plan:** Communities select the most appropriate technology choice among the options proposed
- **Capacity Development:** Implementers provide technical and financial training as well as health and hygiene education activities.

Safety & environment

DEWATS are decentralised, modular wastewater treatment technologies, which are resource-efficient and non dependent on energy. DEWATS solutions present low operation and maintenance costs, as their integrating parts work without energy inputs (gravity fed). DEWATS allows resource recovery through wastewater re-use in agriculture and harnessing of energy through biogas generation.

How does it work?



Current & potential reach

BORDA facilitates projects for the provision of DEWATS in :

Southeast Asia: Cambodia, Indonesia, Laos, Philippines, Vietnam

South Asia: India, Nepal

Central Asia: Afghanistan

Southern Africa: Lesotho, South Africa, Tanzania, Zambia

Latin America: Mexico

Funding

BORDA programmes are supported by the BMZ (German Federal Ministry for Economic Cooperation and Development), the CEU (Commission of the European Union), the Free Hanseatic City of Bremen and WSP (Water and Sanitation Program). BORDA provides its services to a range of organizations like GIZ, AUSAID, IDRC, ADB and UNDP.

Communities contribute between 2-5% of the total investment costs both in cash and kind. Local authorities support projects financially.



STRENGTHS

Community ownership is fostered through demand responsive approach

DEWATS technology linked to communal toilets requires little energy

Materials used for construction are locally available

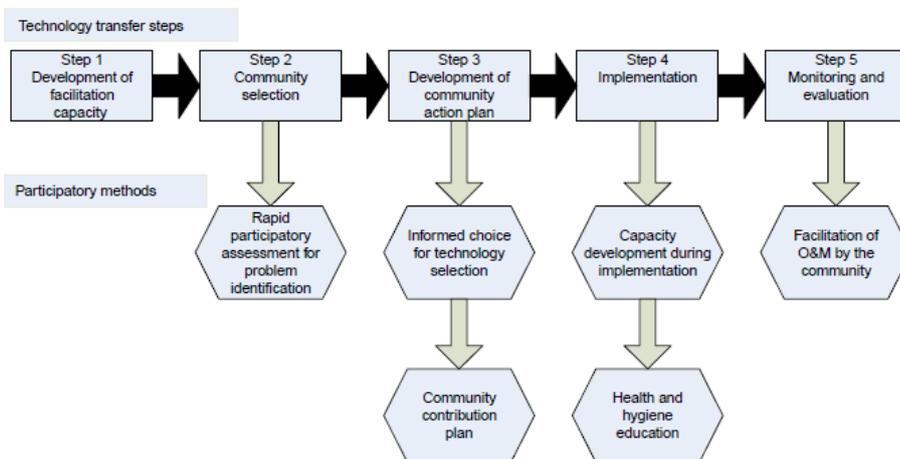
Low Operation and Management costs

MOU (Memorandum of Understanding) between local NGO and the community on O&M (Operation and Management)

CHALLENGES

O&M can be problematic if facilitators and caretakers are not sufficiently trained.

Success depends on commitment of communities and local authorities post-implementation



What would it take to scale this model?



- City wide sanitation planning.
- Removal of barriers e.g. South Africa: restrictive discharge regulations for open water bodies apply same concentration limits (e.g. nutrient level) as for large scale plants. ■

Further information & key contacts

Website: <http://www.borda-net.org/>

Key contact: Stefan Reuter, Director
Email: reuter@borda.de

BRAC WASH Programme



What is it & for whom

BRAC (Bangladesh Rehabilitation Assistance Committee) was established in 1972 and now operates in 10 countries on poverty alleviation issues.

BRAC's Water, Sanitation and Hygiene (WASH) programme, which began in 2006, seeks to provide sustainable and integrated WASH services in rural and peri-urban areas of Bangladesh.

KEY PARAMETERS

Latrine costs:

- 28 USD (very poor)
- 55 USD (poor)
- 200 USD (non poor)
- 480 USD (rich)

Service costs per year:

- 1.7 USD (very poor)
- 2 USD (poor)
- 4 USD (non poor)
- 6 USD (rich)



Partnership ecosystem

BRAC works in partnership with the Bangladeshi Government, NGOs, Civil Society and international donors (e.g. EKN, Bill & Melinda Gates Foundation, DFID, IRC International Water and Sanitation Centre).

Sustainable business model

BRAC's WASH programme aims to ensure demand for and use of latrines by all community members.

Demand generation activities:

- Assessment of existing WASH conditions in the villages and identification of issues that need urgent action.
- Village WASH Committee (VWC) monitor latrine usage and maintenance
- Identification of ultra-poor households eligible for BRAC and Government grants.
- Selection of poor households for micro-loans for sanitary latrines and tube wells.
- Orientation of opinion leaders, religious leaders, school teachers, School WASH committees (SWC), and students.

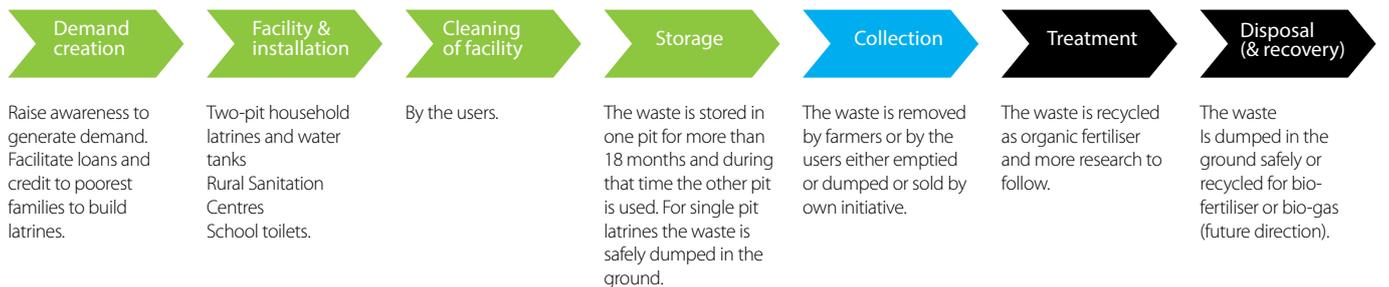
Latrine construction activities:

- interest-free loans to local entrepreneurs to produce latrine parts,
- training and technical support on proper site selection and design
- latrine construction materials including superstructures and mini water tanks free to ultra-poor families.

Safety & environment

- **Water Requirement:** The toilets are mostly water-sealed and pour flushed. After defecation, people use one badna (2 liter capacity) of water for cleansing. 450 litres per HH per week (considering 6 members per HH) are used.
- **Waste management, reuse and safety:** In single pit latrines waste is safely disposed by being buried under ground after covering with ash. In double vault pits, when one pit fills up the second pit is used. After more than 18 months the waste from the first pit is used as organic fertiliser.
- **Research:** With the financial assistance of Bill & Melinda Gates Foundation, BRAC sought to develop micro entrepreneurship skills for marketing organic fertiliser produced from faecal sludge.

How does it work?



Current & potential reach

Rural and urban Bangladesh.

- Converted/changed water seal of 2,111,825 unhygienic latrines to hygienic sanitary latrines.
- Established 1,684 Rural Sanitation Centres.
- Constructed 4,037 latrines in secondary schools for Girl Students with menstrual hygiene facilities.

Funding

Government of Bangladesh, Bill and Melinda Gates Foundation.

STRENGTHS

Grants available the poorest of the poor to access to WASH facilities

Local and national government support and collaboration regarding sanitation

BRAC's nationwide channel

High political commitment for sanitation

CHALLENGES

Model developed and implemented in Bangladesh only

Natural disasters, Geo-Hydrological Challenges (i.e. floods)

Long term financial support is required to reach sustainability

Further information & key contacts

Website: www.brac.net/

Dr. Babar Kabir, Senior Director,
BRAC WASH Programme
BRAC Centre (8th Floor),
75 Mohakhali, Dhaka-1212,
Bangladesh. E-mail: info@brac.net

Mary Garvey, Chief Executive,
Waterbridge House,
32-36 Loman Street London SE1 0EH
Tel/fax: 00 44(0) 20 7922 7722.
E-mail: info@bracuk.net

What would it take to scale this model?

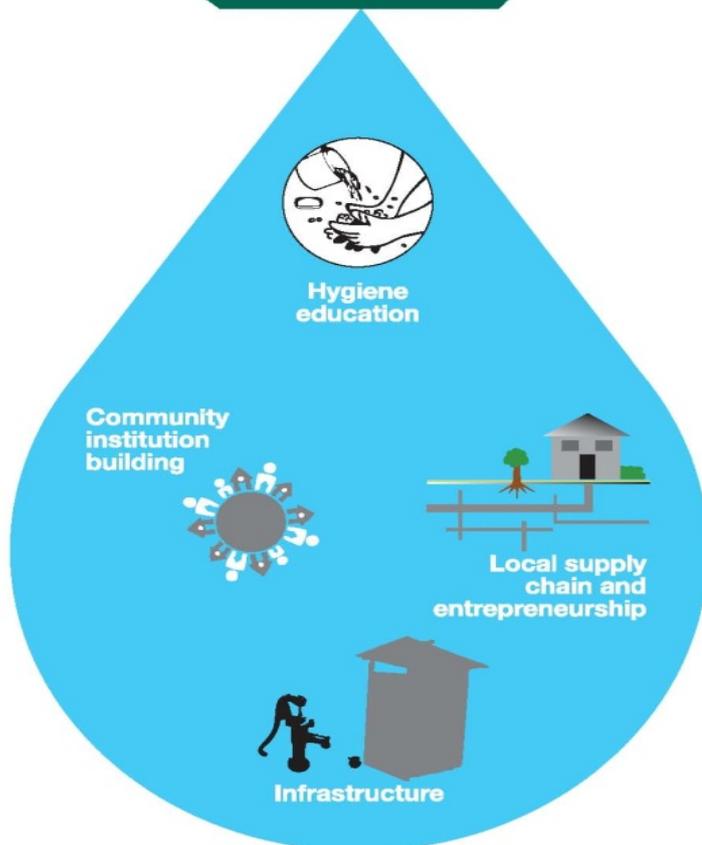


For global scale up:

- Change in socio economic status, culture and values.
- Partnership with national and local governments, NGOs, international organisations.
- Alternative technologies, which respond to local conditions, are needed.

Barriers to scale:

- People's motivation to invest in sanitation.
- Affordable options for different economic groups. ■



Community Approaches to Total Sanitation (CATS)



What is it & for whom

CATS (Community Approaches to Total Sanitation) aims to eliminate open defecation by changing people's behaviour and promoting community demand for sanitation. Through the use of simple, shocking demonstrations, facilitators highlight the link between open defecation and diseases, to foster change in sanitation practice and encourage toilet building.

UNICEF has programmes aimed at eliminating open defecation in 54 countries, mostly in South Asia and Sub-Saharan Africa.



©UNICEF/Ghana13/Quarmyne.

Partnership ecosystem

- Government:** strategies/policies for eliminating open defecation.
- Natural Leaders & Facilitators:** Trained to facilitate and deliver CATS.
- Community:** Participation in triggering and post triggering.

Sustainable business model

- Trained facilitators enter a community and map where people are defecating in the open and demonstrate the negative consequences.
- Household opt to build their own toilets with local materials.
- Subsidies – whether funds, hardware, or other forms – are not provided. Community rewards, subsidies, and incentives are only acceptable when they encourage collective action in support of total sanitation and where they facilitate the sustainable use of sanitation facilities.

Safety & environment

- **Water:** No water is needed as toilets are primarily holes in the ground with lids, with a superstructure of clay, bamboo or cement.
- **Waste:** Waste goes directly into the soil; it is not treated or recycled. Ash from cooking is used to minimize odours.
- **Energy:** No electricity is required



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How does it work?



Demand creation
Trained facilitators lead behaviour change sessions with members of the community. Natural leaders emerge to help ensure families build toilets and utilize improved sanitation practices. Communities spread the word through broad-based community networks & sanitation marketers.

Facility & installation
Toilets are shallow holes in the ground with a lid over them. Superstructure traditionally made from clay, bamboo or cement. Handwashing stations can often be found outside the toilet.

Cleaning of facility
Cleaning is not needed as toilet is a hole in the ground. Individuals clean themselves with leaves or their hands. Ash from cooking or leaves are placed over faeces to control odour.

Storage

Collection

Treatment

Disposal (& recovery)

Current & potential reach

Through UNICEF's direct support, 25 million people are living in over 40k open defecation free (ODF) communities. Additionally, 88 million people are living in ODF communities as a result of UNICEF's indirect support.

CATS has been implemented in:

Africa: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo Brazzaville, Côte d'Ivoire, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Gambia, Ghana, Guinea Bissau, Guinea Conakry, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, Senegal, Sierra Leone, South Sudan, Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

Australasia: Kiribati, Papua New Guinea, Timor Leste, Solomon Islands.

Asia: Afghanistan, Bangladesh, Cambodia, China, India, Indonesia, Lao, Myanmar, Nepal, Pakistan, Philippines, Vietnam, Yemen.

Americas: Bolivia, Haiti.

Funding

Supported by the Unilever Foundation and Domestos since 2012.

STRENGTHS

Effective at changing behaviour and norms related to sanitation.

Community members are actively involved in the process and feel pride to build their own toilets.

Handwashing stations are often found outside the toilet indicating people understand the link with handwashing.

Sanimarts provide opportunities for distribution of products and services.

CHALLENGES

Lack of expertise in CATS and an insufficient number of facilitators.

Buy-in and support from Government.

Government subsidies for sanitation can dissuade individuals from building toilets with their own resources.

As UNICEF cannot endorse any one product, alternative approaches to Sanimarts as distribution networks are needed.

Further information & key contacts

Website: http://www.unicef.org/wash/index_43109.html

Contacts: Therese Dooley, Sr. Advisor Hygiene & Sanitation
tdooley@unicef.org

Louise Maule, Sanitation & Hygiene Specialist, WASH
lmaule@unicef.org

What would it take to scale this model?

- Appropriate national and local sanitation policies
- Sufficient human resources capacity
- Mainstreaming messaging in schools, health centers ■

CATS: 5 SIMPLE STEPS





Clean Team partnership with Water and Sanitation for the Urban Poor (WSUP)

What is it & for whom

The Clean Team is an independent company incorporated in Ghana, and owned by Water and Sanitation for the Urban Poor (WSUP), a UK based NGO. Clean Team is a for-profit social business providing portable chemical toilets to households and a waste collection service 2-3 times per week, in return for a subscription fee.

Clean Team was developed in low-income areas of Kumasi Ghana, and designed to be financially sustainable and scalable using private capital. Clean time has currently installed 450 toilets and has a team of over 20 employees..

KEY PARAMETERS

- Service price / toilet / wk: 5.8 GHS @ 2 x a week service
8.1 GHS @ 3 x a week service
10.5 GHS @ 4 x a week service
- Production cost / toilet:

Partnership ecosystem

Unilever worked with WSUP and Clean Team during the pilot phase of the Clean Team business and Unilever Open Innovation is providing pro-bono support during the scale up phase. IDEO used a "human-centred" approach to design the toilet. The toilet is currently manufactured in China.

Sustainable business model

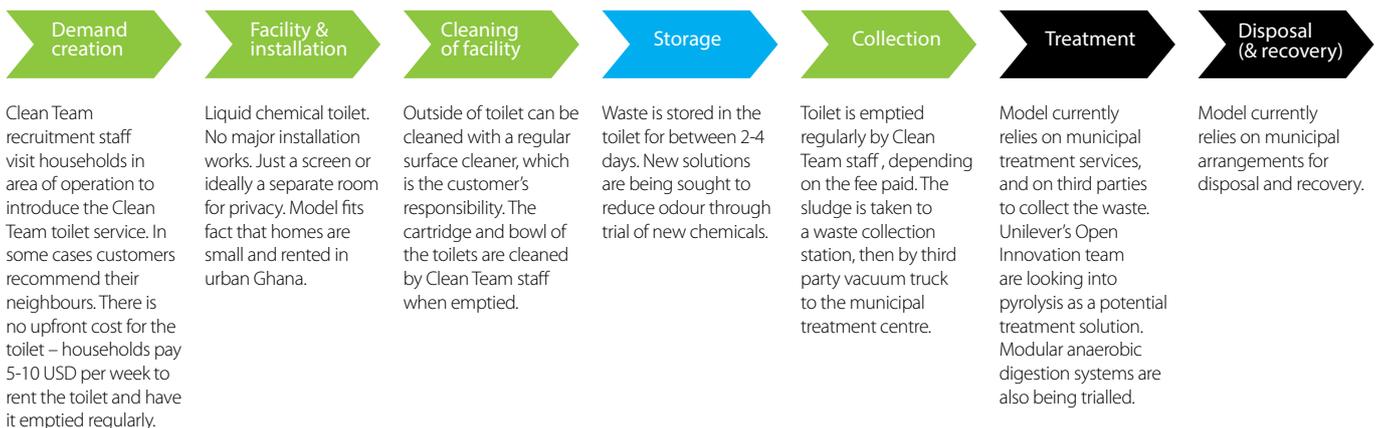
Clean Team's revenues are generated through users' subscription fee for the service and the sale of hygiene products. The cost of the toilet mould was funded by Unilever. There is no up-front toilet cost for the households, as the toilets remain the property of Clean Team. Toilet cost is targeted for recovery via subscription over 36 months. Depending on the service level, households pay 25, 35 or 45 GHS / month for the toilet. This compares to 60 GHS / month for a public toilet.*

Safety & environment

- Safety: Clean Team have rigorous Occupational Health & Safety protocols set up for staff handling human waste.
- Water: Chemical toilets so water use is minimal. Some water is used for cleaning and hand-washing.
- Waste: Liquid waste is produced and contained in sealed cartridges to minimise health risks. Several initiatives are underway to re-use waste but this is not yet operational.
- Energy: No electricity is required. The toilets are made from ABS & HDPE plastic.

*Based on family of 7 each using public toilet once a day paying 30p per use.

How does it work?



Current & potential reach

Pilot 106 families in Kumasi, Ghana in 2012. The project aims to reach 500 families by the end of 2013, 1,000 by mid-2014 and 10,000 in 2015.

Opportunity to use across Africa & Asia, selling to families, but also companies, local governments, schools etc.

Funding

Funding in the scaling up phase came from Stone Foundation, DFID and further funding for the expansion phase will come from impact investors.

Further information & key contacts

Website: www.cleanteamtoilets.com

Andy Narracott, CEO Clean Team:
anarracott@wsup.com

Lisa Hawkes, COO Clean Team:
lisa.hawkes@unilever.com

STRENGTHS

No water required (although desirable for hand-washing)

No upfront 'capital' investment or installation expertise required of HH's

Minimal space required so suitable for densely populated settings

No requirement for mains sewerage or physical alteration of home

Strong customer relationship that could be leveraged to sell products

CHALLENGES

Seasonal bad odour from toilet currently an issue being worked on

Urine is not collected & treated, but diverted to gutter

Currently relies on municipal services for waste treatment & disposal

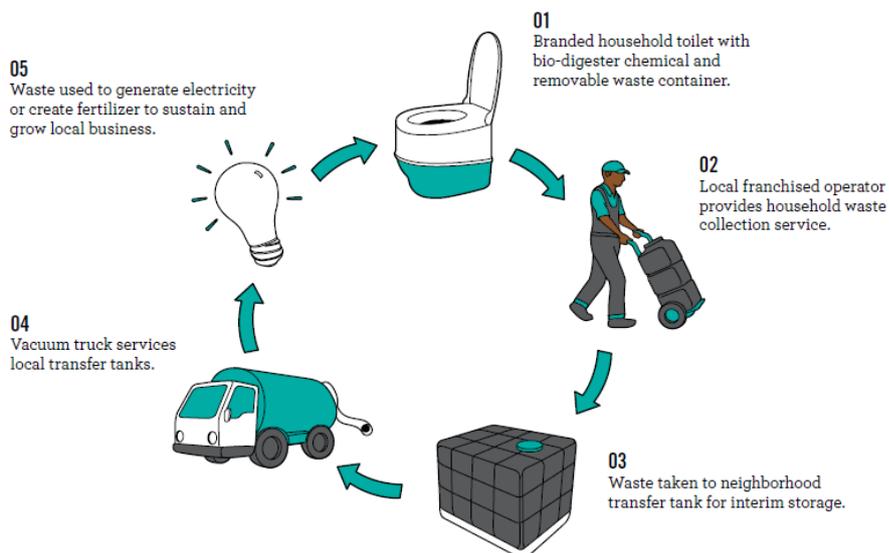
Health & safety risks relating to waste collection

Sales of cleaning & hygiene products are not included in the price



What would it take to scale this model?

- 
 • Partners: Government (local and central), waste treatment partners, local supply chains for chemical & toilet manufacture, entrepreneurs to run the franchised business.
- Alternative technologies: Chemical cost reduction and odour control, toilet product improvement and cost reduction.
- Funding: self funding at 1,000 toilets with donor funding for assets.
- Barriers: Waste treatment solutions, regulatory environment. ■



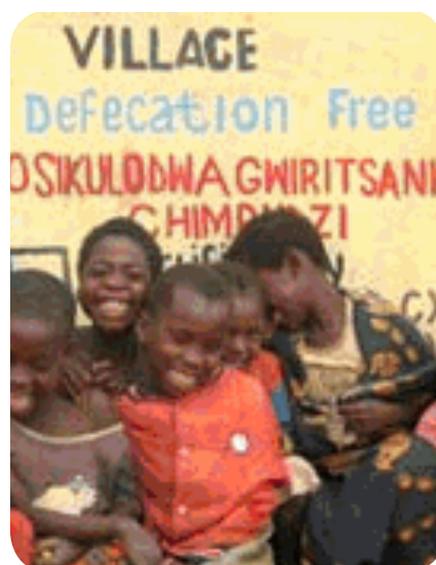
Community-Led Total Sanitation (CLTS)



What is it & for whom

The CLTS approach was pioneered by Kamal Kar in 1999 in Bangladesh. The approach developed participatory tools for empowering local communities to analyse their sanitation profile and hygiene behaviour, internalise the public health impacts and initiate local action for collective behavioural change. CLTS aims to empower communities to collective hygiene behaviour change and to go Open Defecation Free (ODF). The achievement of ODF paves the way for further upgrading of sanitation facilities and management of solid waste.

- Pre-triggering**
 - Selection of a community
 - Introduction and building a rapport
- Triggering**
 - Participatory sanitation profile analysis
 - Ignition and ODF planning
- Post-triggering follow up**
 - Activities planned by community, such as construction of latrines, hand washing stations.
 - Follow up and monitoring, verification, ODF declaration
- Post-ODF activities**
 - Training and capacity building of Natural Leaders (NLs) and Community Consultants (CCs).
 - Engaging NLs and CCs to scale up CLTS in other areas.
 - Use ODF villages as learning experience for other communities
 - Facilitate empowerment process to cover, waste management, food security, livelihoods.



Partnership ecosystem

International/ national NGOs, government ministries/departments and training institutions provide training on CLTS.

Governments ensure an enabling environment for CLTS to work e.g. in national sanitation strategy, move from counting 'toilets constructed' to 'ODF communities', and offering rewards and incentives for sustaining ODF communities.

CLTS champions for scaling up across districts, regions and nation.

Local entrepreneurs are encouraged to build low cost new latrines using locally available materials based on community's newly generated demand.

Sustainable business model

No standard business and technology model is prescribed by CLTS. Trained facilitators use participatory tools to help participants to analyse their sanitation and hygiene profiles, which triggers them to plan and initiate collective local action to stop open defecation urgently through behaviour change.

Safety & environment

Awarding of ODF status takes place in communities followed by external verification and certification. External verification teams often comprise a government committee, NGOs staff, Natural Leaders from neighbouring communities, teachers, etc. Verification activities include: visits to former OD sites, inspections of latrines, verification of monitoring activities in the community, conversation with key members. The basic ODF criteria include: i) no shit in the open, ii) all latrines are fly proof, iii) all latrines have handwashing facilities (soap or ash).

Demand creation

Triggering tools generally used in CLTS are:

- Open defecation area mapping
- Open defecation area transect walks with the community
- Focus group discussions
- Shit calculation
- Calculation of household medical expenses and economic losses on diarrhoeal diseases
- Water and shit, food and shit (mapping of faecal-oral contamination)
- Children's slogan against OD
- Encouraging emergence of community engineers, leaders and community consultants

The triggering / ignition moment may come at any stage of the facilitation process, which leads the community to develop a collective action plan to stop OD by adopting affordable sanitation. Post triggering follow-up actions by facilitating agencies encourage and reinforce the enthusiasm and spirit of the community to achieve ODF status. Communities create demand for technology hardware (latrine infrastructure) and local initiatives originate to meet this demand: sanitation entrepreneurs, local suppliers, NGOs, self-help groups.

How does it work?



Demand creation
 Trained facilitators use participatory empowerment techniques to increase awareness of risks of open defecation. During an ignition phase, community realise the importance of changing behaviour and sanitation practices.

Facility & installation
 Facilitators are discouraged from teaching, prescribing / promoting a particular toilet design or subsidising hardware

Current & potential reach

Since the first pilot in 1999, CLTS approach has been adopted in many countries. Asia: Afghanistan, Bangladesh, Cambodia, China, India, Indonesia, Kiribati, Lao PDR, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Papua New Guinea, Solomon Islands, Timor Leste.

Middle East: Yemen.

Africa: Angola, Burkina Faso, Benin, Cameroon, Chad, Cote d'Ivoire, DRC, Djibouti, Egypt, Eritrea, Ethiopia, Gambia, Ghana, Guinea Bissau, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Nigeria, Sierra Leone, Sudan, South Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

Latin/ Central America: Bolivia, Haiti. In some African countries CLTS is the national recommended approach for the National Sanitation Campaign.

Funding

Many including UNICEF, WaterAid, DFID, Plan International, World Bank (WSP), Irish Aid, WSSCC (Water Supply, Sanitation Collaborative Council) and GSF (Global Sanitation Fund).

National governments are also active funders of CLTS approach.

STRENGTHS

CLTS has proven to be applicable to different context (rural and urban) and continents

CLTS encourages local entrepreneurship as it does not rely on cross-subsidies

The process of triggering and demand creation involves the overall community and not just few households

CHALLENGES

CLTS works best in communities where there are no subsidies for sanitation hardware

The impacts of triggering depends on the quality of training and facilitators

Needs objective evaluation

Further information & key contacts

Website: www.cltsfoundation.org

CLTS Foundation, Kolkata, India
 Tel: +91 3340651168
 Email: cltsfoundation@gmail.com



The Community Health Club Model



What is it & for whom

- The Community Health Club (CHC) Model was first piloted in Zimbabwe in 1995, to generate demand for sanitation using health promotion activities.
- CHC assumes that most parents seek the welfare and survival of their children. CHCs enable parents to understand disease prevention, knowledge which is reinforced by peer pressure for hygiene.
- A membership club is formed of representatives 50-150 households, who attend weekly community participatory health and hygiene sessions over a six month period. These meetings are open to all of the community and are facilitated by a community health worker trained in environmental health. Participants learn ways to improve household and community health and certificates are awarded to those who complete all sessions, but no other incentives are given.
- CHCs have been implemented in thousands of rural and urban communities in Africa, Asia and Caribbean.

- 1) Community mobilisation
- 2) Formation of a community health club
- 3) Base line survey
- 4) Health promotion sessions (using participatory activities)
- 5) HIV/AIDS prevention
- 6) Home hygiene improvements
- 7) Construction of protected water supply
- 8) Building appropriate latrines

KEY PARAMETERS

- Cost per person per year: under 2 USD per person



Partnership ecosystem

There are three main CHC implementation Models:

Government: CHCs are institutionalised through government, usually with NGOs working through Ministry of Health (MoH) which has a national programme. In Rwanda CHCs have been started in almost all of the 15,000 villages as part of public health surveillance through MoH community health workers.

Government & NGO: Local implementing organisations initiate the CHCs but work with MOH and use their Environmental Health Technicians as facilitators to supervise the CHCs. NGOs provide support to MoH facilitators in form of transport and allowances.

e.g. Zimbabwe where 23 NGOs are running over 5,000 CHCs

NGO only: In cases where MoH lacks capacity to provide field workers the NGO may go it alone, and train their own project officers, who run CHCs through locally trained facilitators (mostly in emergency programmes. e.g. In Uganda IDP camps).

Sustainable business model

There is no business model as such. CHCs are free voluntary community based organisations, which vary in size (40-150 members) depending on density of population.

Creation of demand for Sanitation: The power of the Community Health Club is that, as a group, people decide that everyone must have latrines. This elicits demand for sanitation. In Zimbabwe in two years 3,600 VIP latrines were built in 2 years (with minimal subsidy) this was 1/5 of all latrines built through the country in 2001. In Sierra Leone in six months, the sanitation coverage in 50 villages rose from zero to 57%; In Uganda in 8 months sanitation coverage in IDP Camps rose from 11% to 47% with the community constructing 11,800 latrines with minimal support.

villages rose from zero to 57%; In Uganda in 8 months sanitation coverage in IDP Camps rose from 11% to 47% with the community

constructing 11,800 latrines with minimal support.

Solid Waste Management: In the past five years, Zimbabwe AHEAD has used CHCs in the urban environment to transform small towns, using the CHC members to organise clean ups and recycling working with the local council to ensure sustainability.

Current & potential reach

CHCs were first piloted in 1995, then scaled up to 3 districts in Zimbabwe. Experience shows that 50% of all CHC members may build/improve their latrines, and zero open defecation can be achieved in 6 months. The model has been replicated in:

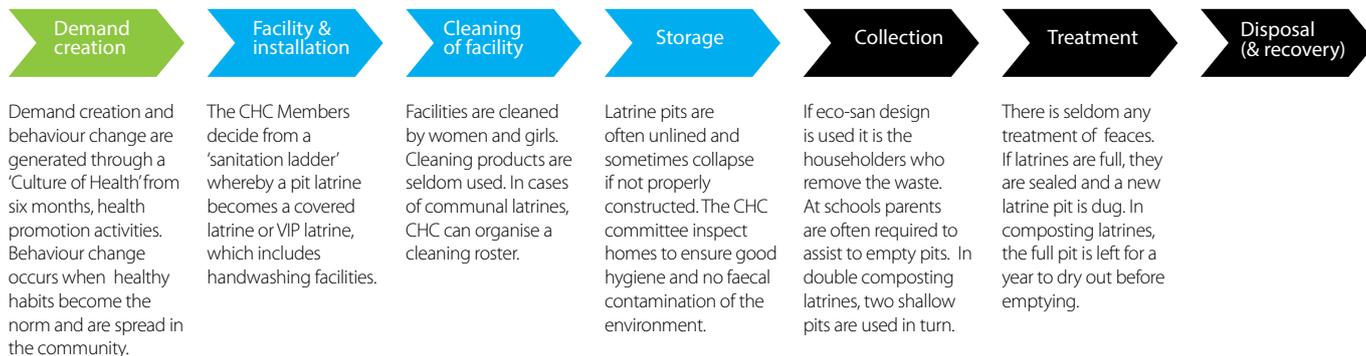
- Southern Africa: Zimbabwe, Namibia
- East Africa: Uganda, Rwanda
- West Africa: Sierra Leone, Guinea Bissau
- Asia: Bangladesh, Vietnam
- Caribbean: Dominican Republic

Funding

Direct Funders include Unicef, DANIDA, DFID, New Zealand Aid, EC, Bill and Melinda Gates Foundation, USAID.

Implementing partners with Africa AHEAD & Zimbabwe AHEAD include: OXFAM, Mercy Corps, ACF, GAA, IRC, World Vision, WaterAid, Red Cross.

How does it work?



Further information & key contacts

Website: www.africaahead.org

Dr. Juliet Waterkeyn: Founder and Director



STRENGTHS

Women's empowerment and increase in social status

Increase of community social capital and long term sustainability of improvements

Community monitoring of progress increases learning and ownership.

CHALLENGES

Donors perceive six months of health education to be excessive.

Hygiene is seen as woman's work, so there is a need to increase male participation in CHCs

A National Toolkit and manual is needed for each country and this may delay start up

What would it take to scale this model?

- The CHC Model could be implemented at global scale by institutionalising the approach through government (as has already been done in Zimbabwe and Rwanda).
- The CHC approach does not focus on type of technology but on the attitude of people using the technology.
- The CHC Model has been implemented in many countries and depending on the scale it costs from as little as 50c per person to no more than US\$5 per person to achieve zero open defecation in a CHC area.
- The CHC model assumes that people are capable of providing for their own basic needs once they are convinced of the priority of safe sanitation.
- The barriers to scaling this approach are lack of support/funds for advocacy to governments throughout the developing world. Wherever there has been advocacy (Zimbabwe/Vietnam/Rwanda) the MoH has successfully adopted the CHC Model. Currently The Gates Foundation is conducting a Randomised Control Trial to test the claims of the CHC Model to minimize diarrhoea and other preventable diseases. ■

E-Kutir Sanitation and Hygiene programme



What is it & for whom

E-Kutir is a social venture aiming at providing new products, services, and sustainable model at the BoP (Base of Pyramid) market. E-kutir sanitation and hygiene programme offers access to hygiene products and opportunities for investing in low-cost sanitation facilities, through the development of one-stop-shop franchises. These franchises operate with support of entrepreneurs and ICT-based analytical tool, called Sani-tool. E-kutir model is based on PLE, Participatory, IT enabled, Entrepreneurial driven Social Business.

For Households and Landowners:

Last Mile Delivery
Sanitation Solutions
Labour force

For Social Entrepreneurs:

Initial Training
Sani Tool
Business Plan

For Service Providers:

Distribution and Advertisement

Partnership ecosystem

World Toilet Organization: Share expertise, develop and manage the programme. ICT companies (i.e. BOP Connect Social Venture): Sani Tool development. Research and Education Institutes (i.e. KIIT School of Rural Management) establishment of a centre of excellence in Social Business and Research. Local organisations (i.e. ACC, Sikka, CERA, Vlshaka) implementation of E-kutir's model and services. Other partners: government, NGOs and international organisations.

Sustainable business model

E-Kutir business model provides services and products to different consumer segments:

Last Mile Delivery: rural householders are provided with hygiene products through hubs, door-to-door and sales events and in one-stop-shops within a 15 km radius from the household's village. Product price: 5% less than local market.

Sanitation solutions: Step-by-step sanitation solutions are offered through a portfolio of 5 products and building materials are provided in one-stop-shops within a 15 km radius from the village.

Labour Force: Households are connected with the labour force necessary to facilitate toilet construction.

Sani Tool: An ICT-enabled application embedded into a mobile device is made available at affordable prices to local entrepreneurs to support them in assessing and managing the deterrents to toilet adoption. Recommendations are provided to households. These may be a financial loan, a subsidy, hardware for toilet, motivational training, or an alternative toilet design.

Training and Business Plan: Business plans are provided to allow Last Mile Social entrepreneurs living in villages to develop their own business and provide continuous training about ICT and Sanitation and Hygiene.

Distribution and advertisement: Support service provided through creation of new channels. Last mile entrepreneur directly link with suppliers in remote areas to sell their products and to support them with product advertisement.

Safety & environment

- **Environmental safety:** Pits are built 100ft distant from water source
- **Water requirement:** 25 litres of water required per day
- **Waste:** No transport, treatment or, recycling is envisaged. Waste is contained in pit.
- **Power requirement:** solar light is used.

Current & potential reach

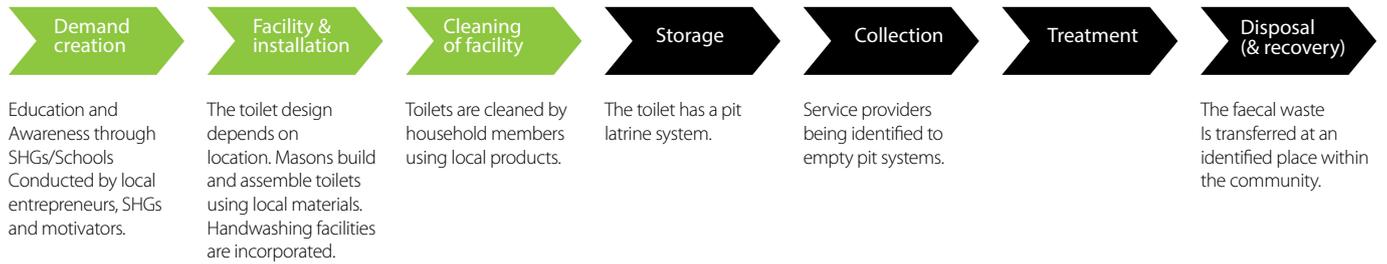
Pilot was done in 6 locations of Odisha (District of Balasore, Cuttack and Puri), where more than 400 toilets have been installed. 12 Sani Shop hubs have been implemented.

The model is being scaled up to 10 more locations in India and the initial results are satisfactory. The scaling up plan aims to cover Odisha and Maharashtra.

Funding

Supported by supported by Hindustan Lever's toilet cleaning brand, Domex.

How does it work?



Further information & key contacts

Website: www.ekutirsb.com

K.C.Mishra, eKutir founder
Phone- 0674-2555550

STRENGTHS

- Collaborative approach
- Market approach
- Integration of ICT
- Local entrepreneurs engage with households

CHALLENGES

- Training and skills development
- Branding and communication
- Participation of companies in the value chain
- Financial assistance



Gram Vikas (Village Development)

What is it & for whom

Gram Vikas originates from The Young Students Movement for Development (YSMD), which supported villages devastated by a cyclone in Odisha in 1971. YSMD has since become Gram Vikas, which addresses poor water and sanitation and public health issues in poor rural areas of India. The programme fosters the ability of communities to independently sustain their own sanitation and water systems through cooperative contribution and management, including financial training, construction skill building, and hygiene education workshops. An equitable financial and institutional approach ensures that all members of the village benefit from the intervention.

As of March 2013, Gram Vikas achieved water and sanitation coverage in 1040 villages in India (60,700 households and a total population of 365,487). Standard facilities include 24 hour piped water supply and a separate toilet and bathing room for each household.

MANTRA
(Movement and Action Network
for the Transformation of Rural
Areas)

100% Inclusion Cost-Sharing
Social Equity Sustainability
Gender Equity

KEY PARAMETERS

- Overhead cost / installed toilet: 6,000 INR
- Longest installed toilet: 18 years ago

Partnership ecosystem

Many partners have supported and contributed to the growth of Gram Vikas, including the Government of Odisha, Christian Aid UK, the Skoll Foundation, Global Giving, GTF Fansa, Arghyam, Bangalore.

Sustainable business model

Gram Vikas' vision is the MANTRA approach, whose principles are the following.

- **Inclusion:** all members of the community and households, including the most marginalised, play an active role in the programme.
- **Social equity:** All villagers, regardless of caste or economic status, are equally represented in the Village Executive Committee (VEC), the community's self-governing platform for decision-making.
- **Gender equity:** women and men are equally represented in the development process.
- **Cost Sharing:** Households leverage funds for the project while also applying for additional support from government schemes. The self-governing model allows poorer households

to cross-subsidise better-off families, thus ensuring equity. Families contribute 60% of the cost of sanitation infrastructure and the rest is mobilised from Government schemes and other contributions. Additionally, families contribute an average of Rs. 1000 in cash for the corpus fund.

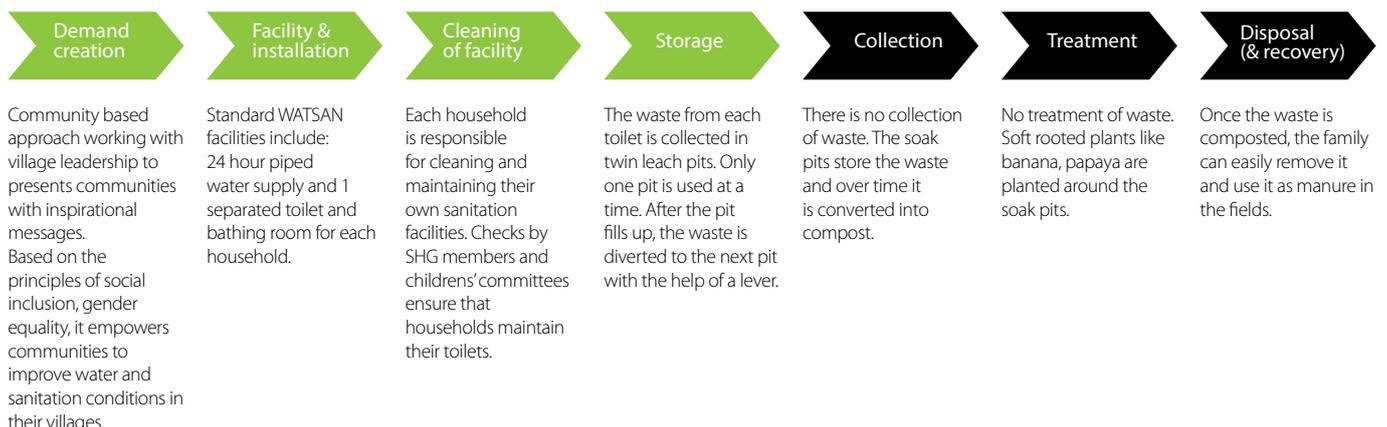
- **Sustainability:** The programme provides mechanisms to ensure that the facilities are properly maintained by villagers.
- **Strong village leadership:** The success of the model depends on the collaboration of village leadership and their ability to mobilise all community members.

Safety & environment

Gravity-flow water systems transport water from a higher elevation to village beneficiaries, requiring zero energy. Water supply is obtained by recharging the catchment area through water harvesting and intake wells.

Waste recycling is encouraged in some areas by supporting families in planting soft-rooted plants around the soak pits of their household toilets.

How does it work?



Current & potential reach

As of March 2013, Gram Vikas achieved water and sanitation coverage in 1,040 villages in Odisha (60,700 households and a total population of 365,487). The model is currently being piloted in Tanzania and Gambia.

Funding

Community members contribute to the project either in cash or in kind, whilst applying for financial support from the local government. A common fund is established at an average rate of INR 1,000/- per household, with the poorest families contributing less. The fund is invested in a local bank and interest is used to subsidise new villagers to build their own facilities.

STRENGTHS

Empowers community members independently of caste and social status

Women play a major role

CHALLENGES

Model may not work beyond India

Based on villagers' ability to leverage funds from governments and donors

Depends on strong village leadership

Further information & key contacts

Website: http://gramvikas.org/index.php?act_id=2&page_id=16#

Joe Madiath, Executive Director;
Sojan K. Thomas, Manager, MANTRA
Ms. Urmila Senapati, Manager, Tribal development

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What would it take to scale this model?

- ↙
 - The MANTRA Model can be scaled up in Asia, Africa and Latin America where sanitation coverage is low or where people practice single point defecation. The model entails an integrated approach, linking sanitation with clean water and transforming the waste disposal habits of the entire community. However Government or NGOs would need to incentivise sanitation promotion and coverage in addition to household contributions.
 - Partners would include local organisations with strong community networks/ linkages, Governments of the concerned countries including local governments, academic institutions and agencies involved in supplying construction materials.
 - Depending upon the geographical location and the infrastructure, the toilet design would vary. In high water table areas toilets have to be raised above ground level. Other construction using local materials would need to be explored. If electricity is not available, then gravity or solar powered systems for water supply would be an option.
- In India, depending upon the regions, the toilets promoted by Gram Vikas costs Rs. 20,000 - 25,000 INR per unit. The piped water supply system is costed at an average of 22,000 INR per household. Part of the cost needs to be supported by Government. Households can also avail of bank loans or any other financial systems to meet the cost of the sanitation infrastructure.
- Barriers to scaling this model include the ability to convince 100% of families to be included in the programme. The skills of staff and community mobilisers need to be honed to achieve this. Further networking with government agencies is crucial as the model needs to be accepted and funds mobilised from the concerned government agencies. ■

Gramalaya



What is it & for whom

Gramalaya was established in 1987 to work in rural development. Since then Gramalaya has been operating in the rural areas and slums of Tamil Nadu, working on health and hygiene education, promotion of self-help Groups among tribal women, construction of low-cost latrines and safe water supply through micro-credit. Gramalaya established Guardian (Gramalaya Urban and Rural Development Initiative and Network) as a micro credit institute to provide loans for Water and Sanitation infrastructures to poor households.

KEY PARAMETERS

- Selling price / toilet: 0 to 14,000 INR (for more complex models, i.e. Ecosan).
- Longest installed toilet: 288 mths (installed in 1989 -90)

LOAN MECHANISM

A detailed survey of area is carried out by the Credit Officer (CO) to estimate the number of target households, number of toilets, water connections.

COs conduct village meetings to sensitize the people about their products.

Individual applicants make verbal proposals for a loan. A combined loan application to Guardian is prepared at group level.

Loan applications are approved by the LC. Applications are rejected if the group members are close relatives, client's age is more than 55 years or if have more than one other borrowing. Presence of monitoring staff is compulsory.

Loan application is prepared by the COs who visit applicants' houses to ensure that all details are correct. COs then appraise and propose loans on the basis of income and cash flow.

Partnership ecosystem

Partners in Gramalaya WASH programmes include local and national government (e.g. the Ministry of Drinking Water and Sanitation, Government of India), community based organisations and international NGOs/Donors (e.g. Arghyam, Bangalore, WaterAid UK and Water.org, USA).

Sustainable business model

Gramalaya works through Guardian to provide loans to newly formed Joint Liability Groups for building toilets, which are repayable in instalments with annual interest rate of 21%.

Guardian lends only for Water and Sanitation projects and has developed operational systems and policies for loan appraisal, collection practices, loan tracking and financial planning.

Guardian has an outreach of 11,944 active borrowers with total loan portfolio of Rs 638.7 lakh (as of 31 March 2012).

Community based organizations (CBOs) are responsible for planning, implementation and monitoring of WASH programs, as well as taking up the loans. CBOs include female self-help groups, panchayat-level federations, AWASH committees, children self-help groups, SHE (Sanitation and Hygiene Education) Teams; Village Water and Sanitation Committees (VWSC) and Village Development Committees. CBOs.

Safety & environment

Safety and environmental assessment:

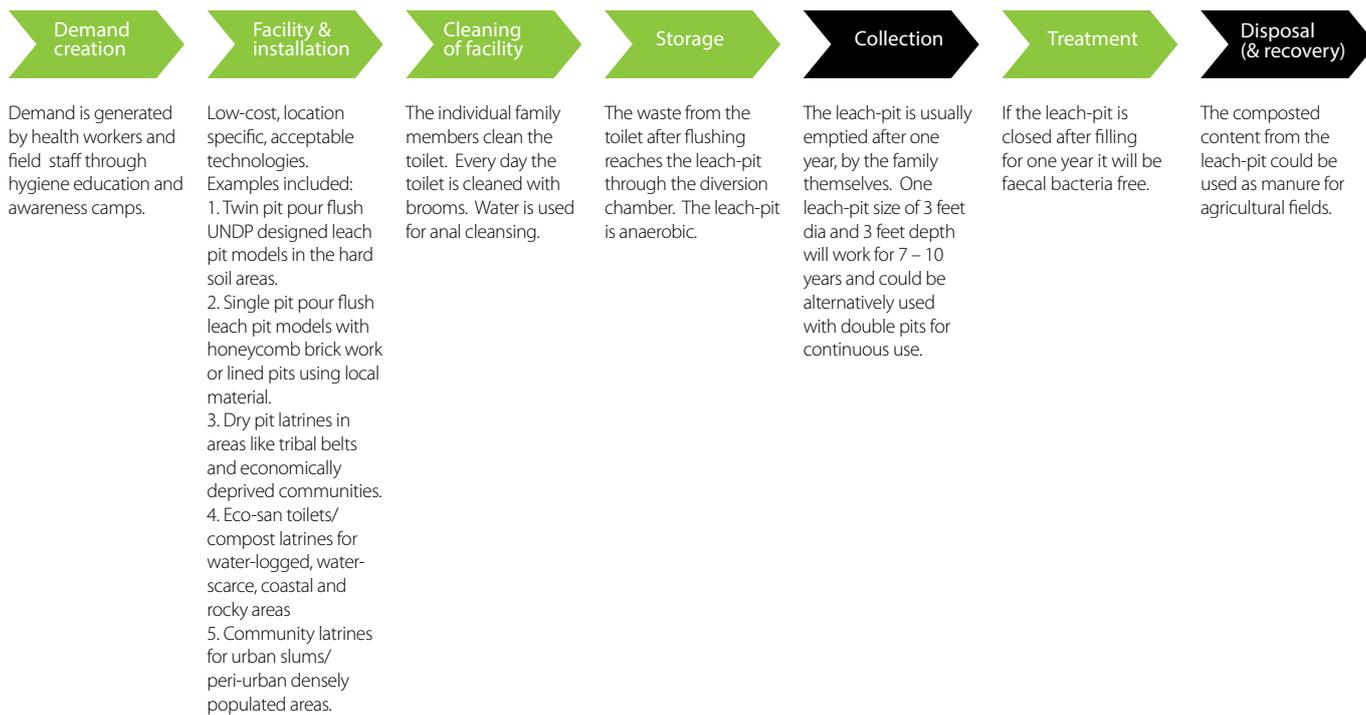
The toilet designs are leach-pit types in the dry areas and eco-san models in water logging areas. The leach-pit toilets are constructed by maintaining a safe distance of 10 - 15 metres from the drinking water sources. The toilet designs recommended by Gramalaya are of UNDP approved design with twin-pit pour flush latrines.

Water requirements: For every single use, one bucket of water is required to flush which requires 10 litres per day and for a five member family.

Power: No power supply is required.



How does it work?



Current & potential reach

Gramalaya has built more than 100,000 toilets, 70% of which are still in use. The model has been replicated in rural, peri-urban areas in more than three locations. The model has been scaled up in other areas, where lack of WASH facilities affected the population's health. Successfully maintained by the families.

Funding

Funds have been provided by WaterAid, UK Water.org, USA and Arghyam, Bangalore.

STRENGTHS

Loans which allow 100% repayment

CHALLENGES

Raise loan capital for lending to households

What would it take to scale this model?

Gramalaya microfinance sanitation model, provides loans for toilet construction with a repayment system, where 100% recovery is ensured. The only barrier to scaling up this model is loan capital to provide lending to beneficiaries who want to build toilets for their homes. ■

Further information & key contacts

Website: www.gramalaya.in
www.guardianmf.org

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IDE-SanMark



What is it & for whom

IDE (International Development Enterprises) works to stimulate and strengthen sanitation markets in rural areas by improving product options, developing innovative and effective sales, promotion, and finance strategies, and building the capacity of the local private sector to manufacture and sell affordable latrines at a sustainable profit.

KEY PARAMETERS

- Suggested retail price for underground: 35-50 USD
- Production cost / toilet: 30-45 USD
- Installation cost: 0-15 USD for underground only

IDE BUSINESS MODEL



Depending on market conditions, iDE's involvement can range from market facilitation to market participation. In Cambodia iDE facilitates the market, contributing upfront R&D resources for product design, marketing, enterprise training, and finance facilitation. Production and sales (market participation) are left to existing local enterprises.

Partnership ecosystem

iDE's front line partners are the small-scale enterprises that serve rural populations. iDE also collaborates with government and with other NGOs working in the WASH sector. Major WASH organizations meet periodically, sharing experience and lessons in an effort to improve implementation models, enhance efficiencies, and to avoid conflicting approaches and messages in the same area.

Sustainable business model

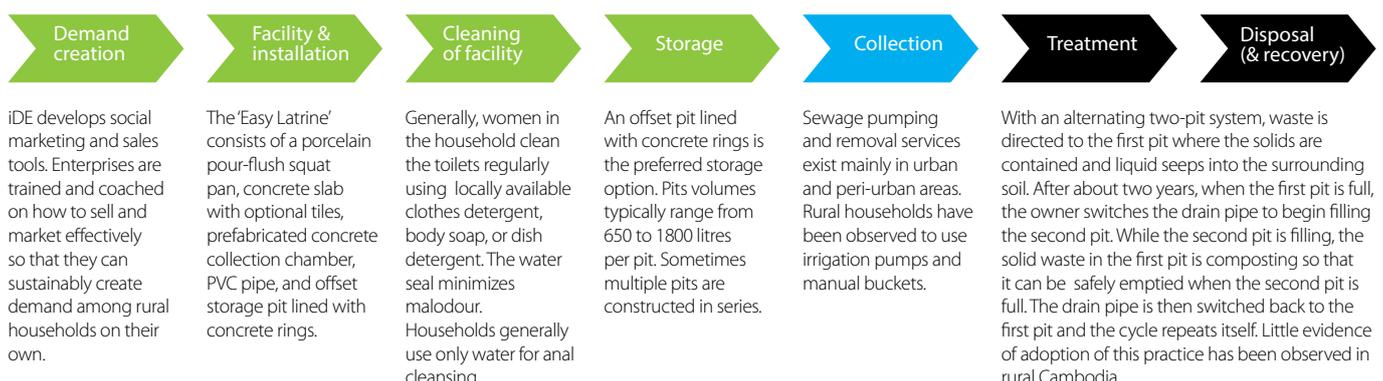
- The approach involves design, training, and marketing.
- Human-Centered Design develops aspirational, affordable and accessible latrine options that rural customers want to buy and rural enterprises want to build. New designs are typically based on adaptations of locally available options. No hardware subsidies are provided.
 - Strengthens the rural sanitation supply chain by providing training in production, business management, and ethical, solution-oriented sales skills to local enterprises.
 - Direct sales and mass marketing campaigns focus on emotional drivers of behaviour change and increase the priority of a latrine purchase.

Safety & environment

- The Easy Latrine design is suited to areas where: 1) it is possible to dig a 1.5m deep pit, 2) soil is permeable, and 3) the seeping waste will not contaminate drinking water sources. Households are instructed to install the latrine at least 15 m away from any water source.
- Pour-flush latrine requires water, hence not ideal in water scarce areas.
- An alternating pit-scheme can be used to address waste, although this is not yet common practice in Cambodia.



How does it work?



Current & potential reach

As of August 2013, iDE has facilitated the sale of 70,000 latrines benefitting an estimated 350,000 people in Cambodia. iDE is currently scaling the Sanitation Marketing approach in seven countries and developing strategies for integrating other WASH products.

Funding

Funded by the Bill & Melinda Gates Foundation and the Stone Family Foundation, with technical and financial support from the Water and Sanitation Program of the World Bank.

Further information & key contacts

Website:
<http://makingsanitationeasy.com/>

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 cjacks@ide-cambodia.org

Tamara Baker (Co-Director)
 tbaker@ide-cambodia.org

What would it take to scale this model?

N iDE has field-tested a method for transferring the SanMark approach to new countries through a process of listening and adaptation. Local knowledge is combined with the principles and lessons learned elsewhere to develop context-specific strategies for achieving large-scale sanitation improvements. With each new project, iDE continues to learn and improve on the approach. ■

STRENGTHS

Efficiency ensured by leveraging the comparative advantages of the private, government, and non-governmental sectors

Sustainability of intervention due to self-perpetuating mechanisms of the market -the profit-motive

Capacity-building model leverages presence of existing businesses and supports sustainability

CHALLENGES

Effective and timely coordination among actors in all sectors

Demand creation is limited by capacity and motivation

Lack of control over the sales process can undershoot sales potential



Continued overleaf...

IDE-SanMark



IDE's Theory of Change states that strengthening supply chains, consumer demand, and an enabling environment will lead to greater uptake and use of WASH products and services, resulting in reduced mortality, improved health, and financial gains for rural populations.


Target Populations
 Poor, rural households

- Changes in:**
- Increase in number of people living in households where water is safely treated and stored, sanitary latrines are available, and/or hand-washing facilities are present
 - Increase number of government-identified poor households adopting appropriate WASH products
 - Significant carbon reduction due to a decrease in deforestation


Change Agents
 Latrine Business Owners,
 Hydrologic Social Enterprise,
 Micro-finance Institutions, Other
 NGOs in the WASH sector

- Changes in the:**
- Increased ability to sustainably supply rural households with access to the full suite of affordable and appropriate WASH products (latrine, latrine shelter, ceramic water filter, and hand-hygiene device)
 - Increased capacity of MFIs to provide financing for the purchase of WASH products
 - Improved understanding of IDE's approach to WASH market development and experience with innovative solutions to remaining WASH challenges.


Delivery Teams
 iDE Cambodia and Partners

- Changes in:**
- Evidence base and experience with effective and efficient WASH approaches including: Sanitation Marketing, WASH financing, bundled WASH products, shelter and hand-hygiene technology, and collaboration with social enterprises
 - Relationships and learning networks between government, NGO partners, and research organisations
- Core deliverables:**
- Capacity building products and services for local private sector change agents, including:
 - Improved sales and promotion tools
 - Business and sales training and tools
 - Expanded product lines (latrine shelter product, hand-hygiene product)
 - Appropriate financing models
 - Bundled WASH product business model
 - Internal and external knowledge products and event participation

The Easy Latrine



PeePoo Toilets



What is it & for whom

Peepoo sanitation is a single-use, self-sanitising, fully biodegradable toilet that collects urine and faeces. It is a slim bag with a wide, foldout funnel and works as a micro-treatment plant that sanitises human waste that in turn can be used as fertiliser. Peepoo is developed and patented by Peepoople AB, a Swedish for-profit company, which aims to enable access to dignified and hygienic sanitation to everyone. Its main areas of activity are those where water or sewer connection is not available and hygiene conditions are most challenging, such as urban slums, schools, emergencies and refugee camps. Peepoople AB has further developed the "Peepoople Humanitarian Response Model" for use in emergency aid operations.

KEY PARAMETERS

- Retail price / per Peepoo in slums: Sold in Kibera at 3 KES per Peepoo (compared to 5 – 10 KES for public toilets). Distributed free in schools, financed by donors. A refund of 1 KES is offered at the collection point.
- Longest installed toilet: Available and used in Kibera slum since November 2010.

Partnership ecosystem

- In urban slums the Peepoo solution is implemented in close co-operation with the inhabiting community and national government (e.g. Ministry of Public Health and Sanitation in Kenya)
- To create awareness during the pilot project, Peepoople Kenya cooperated with CBOs, NGOs (MSF, Carolina for Kibera, Umande Trust) as well as local and national radio stations.
- Peepoople Kenya is conducting research together with the University of Nairobi on how to best transform the Peepoos bags into to a commercial fertiliser.
- In emergencies the Peepoo is implemented with NGOs or agencies like Oxfam GB, UN-Habitat Pakistan, Red Cross and IRC.

- Sales representatives buy Peepoos bags from Peepoople Kenya at a lower wholesale price and earn a commission/margin on every Peepoo sold.
- Peepoos are collected at drop points in the community and transported daily to temporary storage, then kept for four weeks until they are sanitised and processed into safe fertiliser. Collectors are refunded Ksh1 for each bag collected. If the number of Peepoos sold/collected is less than 200 bags/day, a subsidy of Ksh 200 is offered.
- School attendants assist children and manage the collection in schools. They receive a fixed minimum wage and also act as the sales representative in the area, thereby increasing their income.



Sustainable business model

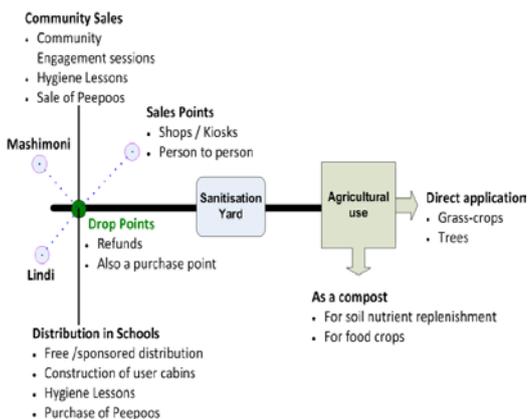
- Peepoos are distributed to schools and sold in the community through micro-entrepreneurs, groups of local women and/or in kiosks. Most of the sales are made during sanitation training sessions conducted by community health workers.
- Peepoo users, sellers and collectors are provided with training on hygiene and sanitation; the sanitation value chain; business skills; basic bookkeeping and know-how on home gardening with used Peepoos.
- Micro entrepreneurs, recruited competitively after advertisement in the community, include sales representatives, school attendants and Peepoo collectors.

Safety & environment

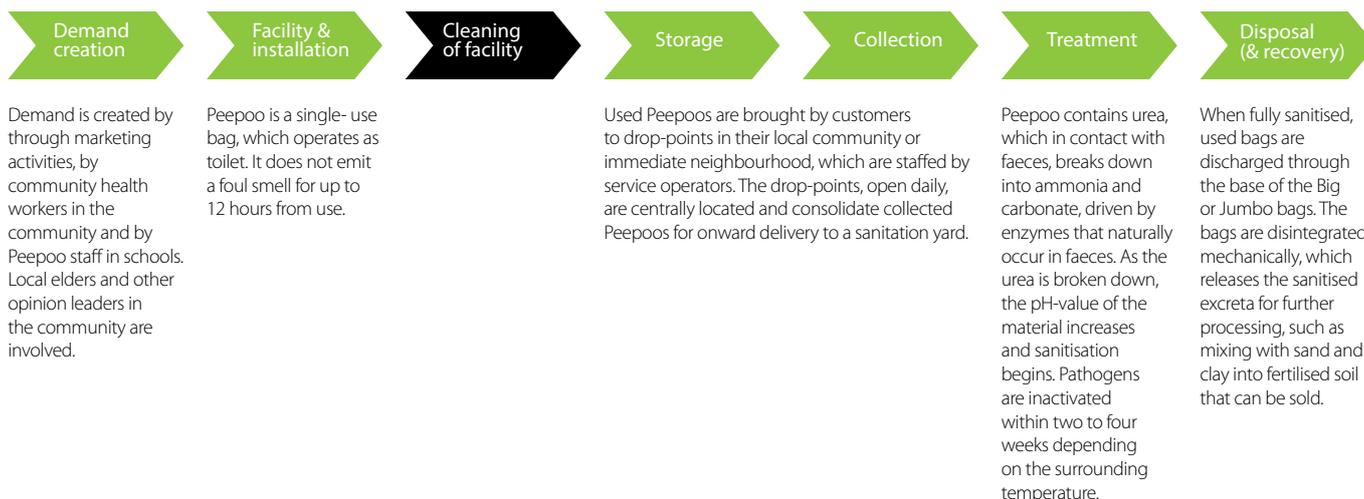
Formal safety / environmental assessments:

the ammonia based sanitisation technology used in the Peepoo toilet was developed with the Swedish University of Agricultural Science (SLU). The polymer material used in the bag is certified according to EU standard EN13432. Studies from University of Nairobi show that used Peepoos have a rich nutrient content for crops, Nitrogen, Phosphorous and other micronutrients which make it a good fertiliser. Coffee seedlings are being grown with Peepoos and sold to farmers and Peepoople Kenya is working with Greenbelt movement in planting trees using Peepoo fertiliser. The hope is that the income from the Peepoo fertiliser will feed into the value chain and cut the costs selling one Peepoo for Ksh 3 and offering a refund of Ksh 4. **Water and power requirement:** Peepoos do not require any water except for handwashing. No power is required for any aspect of the system.

Waste management: Faeces and urine are contained in the Peepoo bag after defecation, preventing it from any contact with the environment. Peepoo is self-sanitising: a dose of urea inside the Peepoo reacts with an enzyme in the faeces, developing ammonia that inactivates all pathogens. After use, Peepoos are collected in larger bags and kept closed for four weeks to secure complete sanitisation, before the content can be used as fertilizer.



How does it work?



Current & potential reach

Urban Slums: Kenya (Kibera) : As of 2013 there are 20,000 PeePoo regular users, including 10, 000 school children in more than 60 schools. Pilot Tested in Boxwood slum, Durban, South Africa; Novib Slum areas in Mymensingh, Bangladesh.

Emergency Camp: Sindh, Hyderabad; Balochistan, Pakistan with UN-HABITAT reaching 5,000 people; Nyando, Kenya; Port au Prince, Haiti and in Christchurch, New Zealand.

Funding

The pilot project in Kibera, managed by Peepoople Kenya (NGO), was funded by the Dutch NGO Simavi and by the Swedish government agency Vinnova. In emergencies, the partner organisation purchase Peepoos and supporting products (seat, tent and larger collection bags). Implementation training and support is provided by Peepoople AB.

STRENGTHS

Self-Sanitising

Mobile, usable at home or any private place

Protects the environment from pathogens in human faeces

Does not need infrastructure, water or electrical power

CHALLENGES

Acceptance of human waste-based fertilizer

Foul smell during processing for agricultural use

The sanitisation yard: space in slums is difficult to find.

Research on how to process the faecal sludge and transform it in to fertiliser is underway

What would it take to scale this model?

Peepoos have been tested in different parts of the world, with high user acceptance (around 90 – 95 %). The Peepoo can be implemented rapidly in first phase of emergencies, but also be distributed as an every day toilet. It weighs 10 grams so can easily be distributed both in slums or in emergencies. Currently, 500,000 Peepoos are produced every day in Europe. Other production lines would be needed if new markets are identified.

Required funding:

Economy of scale is critical to get production costs down. To reach sustainability in urban slums 20,000 daily users or more in an area

are needed. Launching in a new market requires investment in demand creation and development of the value chain.

Barriers to scaling this model:

Using human waste as fertiliser might be a challenge in some countries, both culturally and operationally.

In slums there is very little space. A nearby storage area for processing of the Peepoo fertiliser is needed.

Since the low price of the Peepoo is critical in slum settings cost of VAT and duty in some countries could cause problems. ■

Further information & key contacts

Website: www.peepoople.com

Contact: Peepoople Alsnögatan 3 116 41 Stockholm Sweden +46 8 641 04 01 Email: info@peepoople.com



3SI: Supporting Sustainable Sanitation Improvements in Bihar through Supply-Side Strengthening

What is it & for whom

3SI used market research to develop 2 business models that consider what makes investment in household sanitation attractive to consumers and investment in sanitation businesses attractive to the private sector. Emphasis is placed on meeting customer needs and preferences, including increased access to financing.

The project will cover 8 districts in Bihar State, India with a population of about 23m.



Partnership ecosystem

PSI and its partners, Water For People, the Monitor Group, and PATH together form the 3SI team, with funding and support from the Bill & Melinda Gates Foundation.

PSI works with the private sector to create and grow markets for health products and services for the poor. Water For People provides technical expertise in sanitation as a business. The Monitor Group advises on strategy and market research. PATH provide support on commercialization of sanitation and product design.

Sustainable business model

Two models will be piloted for their ability to increase sanitation coverage and attract private sector investment. **1) A TurnKey Solution Provider (TSP) model** in which businesses will supply consumers with products and services related to toilet construction at a specified quality and price. PSI will support TSPs through capacity building, including marketing/sales, and access to credit **2) A Dispersed Model** which mimics the existing value chain and where consumers

independently purchase input materials from suppliers and hire labour to construct toilets. PSI will monitor quality in the value chain and provide support to NGOs/microfinance institutions (MFIs) to market /sell toilets and coordinate value chain functions.

Market research indicates that the consumer price for 3SI toilets should be set between 7-10,000 rupees (115-170 USD), including the superstructure. Prices will vary based on the toilet model and local market pricing. The business model includes a component to leverage government subsidies for household sanitation as well.

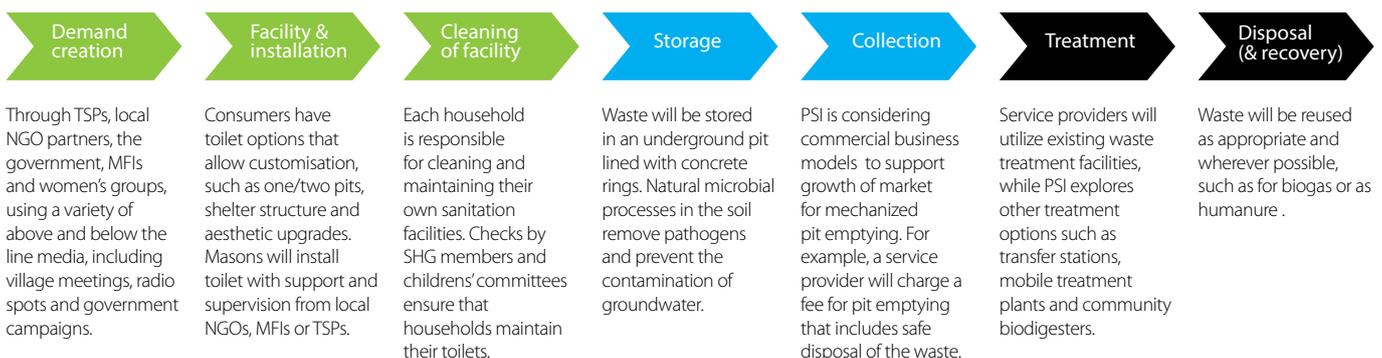
Safety & environment

Pans require a small amount of water to flush. Water creates a seal which reduces odours and fly nuisance.

Waste is contained in an underground pit lined with concrete rings.

Pits will take a minimum of 5 years to fill; project will eventually include provision for emptying.

How does it work?



Current & potential reach

The project aims to increase sanitation from 33% to 44% of households in the 8 target districts of Bihar State, India.

The pilot is scheduled to launch in August 2013; 3SI aims to increase sanitation coverage by 490k latrines over 4 years

Funding

Donor funding from the Bill and Melinda Gates Foundation.

STRENGTHS

Strong government support

Leveraging experience of partner organizations and using best practices

Standalone latrines do not require sewer connection or physical alteration of home

Market-based in collaboration with private sector

Newly designed product offering based on consumer insights

CHALLENGES

Poor access to finance for households

Social norm of open defecation

Socio-cultural challenges stemming from caste system

Fragmented supply chain

Lack of existing infrastructure for waste treatment

Further information & key contacts

Website: www.psi.org

Chief of Party: Shankar Narayanan shankara@psi.org.in

PSI WASH Technical Advisor:
Katharine McHugh
kmchugh@psi.org



What would it take to scale this model?

- Funding to incubate businesses outside of pilot areas.
- Increased access to finance for consumers from MFIs and savings and loans groups, including bridge finance for Government of India subsidy.
- Continued support from public sector partners for coordinated demand creation.
- Additional investment in faecal sludge management to grow market for pit emptying, ensuring quality collection, transport and treatment by service providers, and investment in disposal/treatment facilities. ■

Sanergy



What is it & for whom

SANERGY is a business idea originating from students at Massachusetts Institute of Technology (MIT) school of management. Sanergy's long term goal is to build a viable sanitation system in the slums of Nairobi to franchise low-cost toilet units to local entrepreneurs, and then collect the waste for conversion to fertilizer and electricity.

The public pay (3-5 KES) per use. Currently developed in Kenya with 173 Sanitation centres through 90 franchisees.

KEY PARAMETERS

- Selling price / toilet: 550 USD 1st and 350 USD thereafter
- Price per use: 3-5 KES (0.03-0.05 USD)
- Longest installed toilet: 18 months (estimate)



Partnership ecosystem

- Winner of MIT 100K competition in 2011
- Acumen Fund, SpringHill Equity Partners, and Eleos announced a growth stage investment in 2013
- Local entrepreneurs who invest in Sanergy franchise
- Franchisees are financed through Kiva
- Sanergy is a non profit funded through donor grants

- **Process** the human waste into biogas / electricity / fertilizer through industrial scale anaerobic digestion process.

Franchisees pay \$550 for toilet, waste collection, and support and \$350 for each additional toilet (generally takes 3-6 months to pay back loan from Kiva); Franchisees are responsible for securing land.

Safety & environment

Safety: Entrepreneurs and waste collection staff are trained and equipped for safe waste handling

Water: Dry system; sawdust used after each use

Waste: Waste transported currently 3-5 kilometres to service site where sludge is combined with organic materials in boxes to compost for 2-3 months; future site for composting planned 30k away

Energy: energy generated

Sustainable business model

At each of 4 steps the approach creates jobs and opportunities:

- **Build** a network of low-cost Eco SAN sanitation centres in slums, Each provides hot showers and clean toilets for 77 people.
- **Franchise:** earn income through pay-per-use fees, membership plans, and sales of complementary products
- **Collect** the waste produced. Sanergy employees collect the full containers of waste from operators and provide them with clean empty containers daily. Full containers are brought to a central processing facility.

How does it work?



Current & potential reach

- Pilot: 173 units through 90 franchisees.
- Proof: Successful pilot in 1 location - Mukuru, Nairobi.
- Significant investment for scale up by Acumen Fund, SpringHill Equity Partners, and Eleos.
- Scale: In planning phase.

Funding

- Seed money from MIT 100K USD in 2011.
- USAID's Development Innovation Ventures - 100K USD in 2011.
- Winners of several innovation awards (Lemelson Foundation, SIDA, Draper Richards Kaplan, Echoing Green).

STRENGTHS

Proven end to end solution for Urban non slum

Buyer for waste product (fertilizer)

Investors ready to take Sanergy to growth phase

Selling FMCG products as another revenue stream

CHALLENGES

Waste management process requires human intervention (some health risks)

Fertilizer as a product requires local policy and regulation on use of human waste as fertilizer

Expansion of business depends on Sanergy's ability to find local entrepreneurs willing to invest in franchise (i.e. overall model is partially subsidized)

Behaviour change may be an added cost in countries without a habit of paying for use of toilet

Further information & key contacts

Website: <http://saner.gy/>

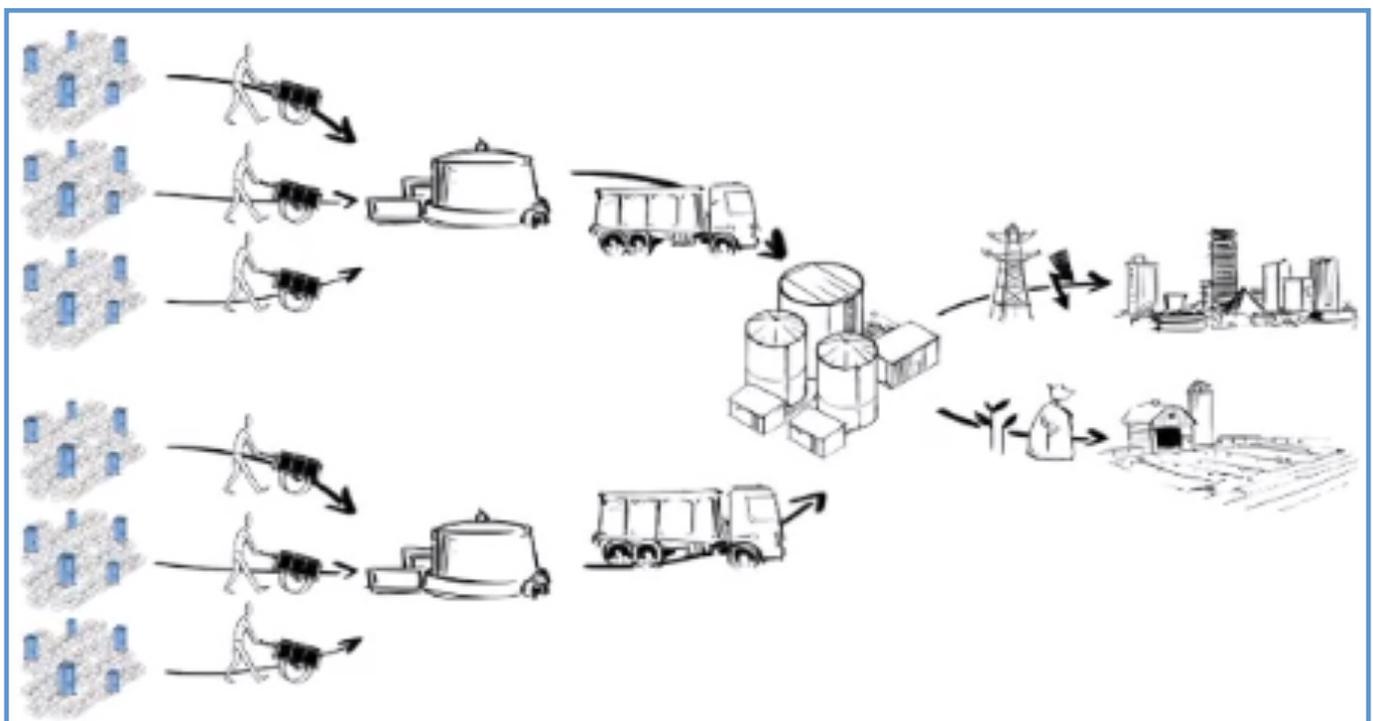
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What would it take to scale this model?

- The model is successful in Nairobi slums, thanks to existing habits of paying for using sanitation facilities.
- Front end model is scalable; Back end composting requires space (lots of land to lay out composting boxes) ■



Africa: Ethiopia, Kenya, Niger, Senegal, Tanzania, Uganda

Asia: Cambodia, India, Indonesia, Lao, Pakistan, PDR, Philippines, Vietnam

Scaling Up Rural Sanitation (Water and Sanitation Program)

What is it & for whom

- Approach for scaling up rural sanitation involving strengthening the enabling environment, creating demand and supply for improved sanitation and facilitating effective knowledge and sharing
- Initially tested in 3 countries as Total Sanitation and Sanitation Marketing (TSSM), approach is now being implemented in 14 countries with technical assistance from WSP
- Target audience is rural population with particular emphasis on the poor (bottom 40% income brackets)

- Enabling Environment
- Demand
- Supply
- Learning and Knowledge

Partnership ecosystem

- WSP provides technical assistance (such as conducting formative research, training CLTS trainers, or developing BCC tools).
- Program is implemented and funded by government.
- Other organizations (NGOs, development agencies) also implement or co-fund.

Sustainable business model

- Business models to date have focused on toilet acquisition by household
- As this is not a NGO-led implementation program there is no single business model being pursued or supported. Emphasis is on supporting or developing capacity of local businesses/enterprises /supply chain so that they can make a profit from selling on-site sanitation to rural households.

Safety & environment

National standards for safety are adhered to.



How does it work?



Current & potential reach

- Pilot: The approach was initially tested in East Java (Indonesia), Himachal Pradesh and Madhya Pradesh (India) and Tanzania, contributing to 9 million households improving their sanitation from 2006 to 2010.
- Scale: The approach has since expanded to 11 additional countries for a total of 13.

Funding

WSP provides technical assistance (for example to support policy reform and develop capacity of CLTS facilitators). Funding for implementation comes from governments themselves. In some areas, NGOs bring additional funding and support.

STRENGTHS

Integrated approach (enabling environment, demand, supply, learning and knowledge)

Works within existing government structures and budget to ensure program sustainability and scale

CHALLENGES

Sequencing demand and supply strengthening interventions.

Capacity and resources may not be sufficient control over implementation

Further information & key contacts

Website: www.wsp.org

Eduardo Perez, WSP,
Email: eperez1@worldbank.org



Selling Sanitation (IFC/ WSP)

What is it & for whom

The Selling Sanitation program is a joint initiative of IFC (International Finance Corporation) and The World Bank Water and Sanitation Programme (WSP) that aims to help millions of people across Africa get access to the household sanitation products they want and can afford. The approach is currently being piloted in Kenya, with planned expansion to other African countries by 2014.

Despite the urgent need for sanitation, very few affordable products and services exist for low-income households looking to upgrade from a poor quality latrine or build new sanitation facilities. Initial market assessments indicate a potential Bottom of the Pyramid (BOP) consumer base of about 1.9 million households, and potential revenue from plastic latrine slabs of 104 million USD in Kenya alone. This opportunity has proved largely untapped for private businesses due to a range of market barriers. Selling Sanitation works with the private and public sectors to remove these market barriers.

- Business Development Support
- Consumer Awareness
- Market Intelligence
- Public Sector Engagement
- Pro-poor Financing

KEY PARAMETERS

This is a market transformation program and as such, is not involved in direct provision or funding of products or services. Businesses involved in the manufacturing, distribution, installation and maintenance of the new consumer-driven designs offer a range of product and service options. Options for BOP segments are expected to retail at between 6-88 USD.

Partnership ecosystem

The program is a part of a wider IFC and WSP advisory programs in water and sanitation. The key clients are the Government of Kenya (Ministry of Health) and private sector firms.

Sustainable business model

Selling Sanitation works with manufacturers, distributors, consumers, financial institutions, and governments to catalyse the sanitation market through:

Business Development Services to remove first-mover barriers to market entry by supporting businesses to develop new affordable sanitation products and distribution channels to reach underserved consumers.

Consumer Awareness to support governments to develop and deliver national communication campaigns reaching millions with behaviour change messages and consumer information on available low-cost product options.

Market Intelligence to demonstrate the viability of the market by providing data on market size, consumer preferences, key target segments and current trends. Market intelligence helps manufacturers, distributors and other businesses understand market opportunities and make informed decisions.

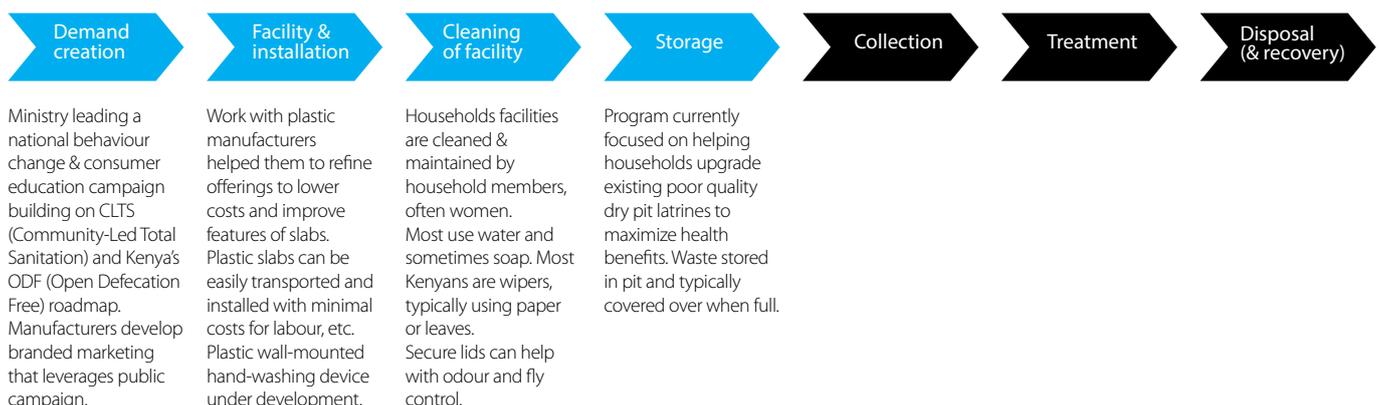
Public Sector Engagement to improve the enabling environment for sanitation by working with government at all levels to increase demand and uptake of improved hygienic latrines, and to facilitate and regulate a self-sustainable consumer market for sanitation.

Pro-poor financing to address financial constraints and bottlenecks for both consumers and businesses.

Safety & environment

- A set of quality assurance tests ensure product quality at factory.
- The program is working with Kenya's Ministry of Health to develop minimum standards to ensure that all latrine facilities deliver health and hygiene benefits. New plastic options will need to comply with these standards.
- Once the standards are set, the program will explore options for accreditation/quality seal for products that meet criteria to help consumers make informed decisions.
- A health impact evaluation is planned for new plastic collar and retrofit options.
- For rural BOP consumers, most plastic manufacturers will offer a range of dry pit latrine slabs that do not require water or power. When pits fill up, these slabs can be relocated to a new pit. The filled pit is typically covered with dirt and left to decompose.
- Some manufacturers also offer plastic biogas units, but these are priced for wealthier segments and are not likely to have high uptake by the rural BOP segment.

How does it work?



Current & potential reach

- **Market Assessment:** The program has assessed the opportunity, attracted first-mover firms, helped them design suitable products and distribution strategies, and worked with MOH to design campaign.
- **Pilot:** The project is moving into the pilot phase, with several manufacturers entering production and MOH preparing to launch national campaign.

Funding

The Selling Sanitation Initiative is a part of wider IFC and WSP advisory services programs in the water and sanitation sector run in partnership with Australia, Austria, The Bill and Melinda Gates Foundation, Canada, Denmark, Finland, France, Ireland, Japan, Luxembourg, Netherlands, Norway, Sweden, Switzerland, United Kingdom, United States and The World Bank.

Further information & key contacts

Website:
www.ifc.org/sellingsanitation

IFC: Will Davies, SSAWA Program Manager, wdavies@ifc.org
 WSP: Yolande Coombes, Senior Sanitation & Hygiene Specialist, ycoombes@worldbank.org

What would it take to scale this model?

- Program anticipates scale up across Africa, with a pro-poor focus on base-of-pyramid consumers.
- Applicable where market assessment indicates sizable near-term opportunity, competitive technology solutions, & evidence of industry-wide market barriers.
- IFC, WSP, World Bank group have global reach. All efforts support government and private sector clients.
- Support to businesses to develop competitive products could be provided in other markets if this is identified as a market barrier.
- Selling Sanitation approach requires minimum catalytic donor finance. ■

STRENGTHS

High scale potential. Support from the national government, established private sector clients & existing value chains

Pure commercial business models. No subsidy of individual businesses for capital or operations

Effectively leverages strong track record and convening power of IFC & WSP

Complements and builds on CLTS (Community-Led Total Sanitation). Aligns closely with government policy and links to social safety nets for the poor

Cost-effective, aid-effective, not reliant on continued donor finance

CHALLENGES

Requires substantial lead-time for market assessment. Can result in 'no go' decision if market pre-requisites are not met

Depends on presence of far-sighted private sector firms willing to enter untested markets.

High ambiguity in early demonstration phase (will not be such an issue after Kenya pilot)

Historical and current sanitation subsidy distorts consumer demand and private sector incentives

Plastic Product Examples

Latrine slab designs are based on detailed market analysis and an iterative human-centered design process to ensure they meet the most commonly cited problems with existing latrine products among BOP consumers – affordability, durability, cleanliness, and ease of use. By offering a range of aspirational products, manufacturers and retailers are able to capture a larger segment of the market.

Further insights

- Success is defined as market transformation: new sanitation solutions manufactured at scale, sold and distributed through new channels, reaching underserved consumers that are most in need.
- IFC and WSP are committed to investing in initial market transformation activities, but real long-term success will be the moment in which catalysing activities are no longer needed: when a robust sanitation market is in place and effectively linking consumers to businesses, and when appropriate enabling environments are in place to support and regulate this market.
- Work to improve enabling environments and transform markets offers benefits to the sector as a whole, and can be leveraged by NGOs, agencies, businesses and other stakeholders. By their nature, these activities must think and start at scale.



Sulabh International

What is it & for whom

Sulabh International is a non-profit social organisation, founded in 1970 by Dr Pathak, and inspired by Gandhi's ideology of emancipation of scavengers in India.

- Sulabh promotes the construction and use of a two-pit, pour-flush compost toilet known as Sulabh Shauchalaya. Sulabh toilet model, implemented in 1.3 million houses in India, has helped emancipate over 1 million scavengers from the hazardous job of human waste collection.
- Sulabh promotes the construction and maintenance of toilet complexes in public areas and slums, based on a 'pay & use' scheme. Sulabh has built and maintained over 8,000 public toilets in India, 200 of which are linked to biogas plants.
- Sulabh operates in 25 States of India, for a total of 1689 towns.

The organisation's target audience are:

- Urban areas: middle and low income groups, who either do not have a toilet or want to upgrade from existing toilets (bucket latrines).
- Rural areas: poor people with no toilets.
- Public areas: schools, Panchayat houses, community centres, hospitals, railway stations, religious places.

KEY PARAMETERS

- Selling price / toilet: from Rs. 1,500 (\$25) to Rs. 55,000 (\$900) depending on models
- Public toilets pay-per use fee: Rs.1-2
- Service price per toilet: 20%
- Production cost / toilet: Based on rates from Government of India and State Government
- Overhead cost / installed toilet: 15% - 20%
- Longest installed toilet: The first household toilet built in Arrah, Bihar in 1973 and the first public toilet in Patna, Bihar, in 1974 and it is still in use.



Partnership ecosystem

Sulabh operates in strong collaboration with the State Governments, Central Governments, local bodies, development authorities, central government organizations/ agencies; international organisations (e.g. British Council, USAID, BORDA, Commission of the European Union) and the private sector (Indian Railways, Tata).

Sustainable business model

Sulabh Public Toilet Complexes: Sulabh business model expects the capital cost of public toilet construction to be sponsored by the local and State governments. Operation and maintenance of toilet blocks' costs is met through the pay per use scheme. A 30 year maintenance guarantee is offered by Sulabh. These complexes feature separate enclosures for men and women, bathing and urinal facilities, as well as other services (public telephone, primary healthcare, etc.). Sulabh public toilets have electricity, constant water supply and soap powder is supplied for free. Children, disabled persons and those who cannot afford to pay the fee are exempt from payment. In case of toilet complexes located in slums and less developed areas the maintenance of such toilet complexes is cross-subsidized from the income generated from toilet use.

Household Toilets: a two-pit, pour-flush compost toilet model is proposed. Household members can upgrade/ choose amongst different models depending on their financial availability. Household toilets are maintained by the household owners.

Job creation: Sulabh action plan has provided job opportunities to 66,000 people and has contributed to make 440 towns in India scavenger free.

Safety & environment

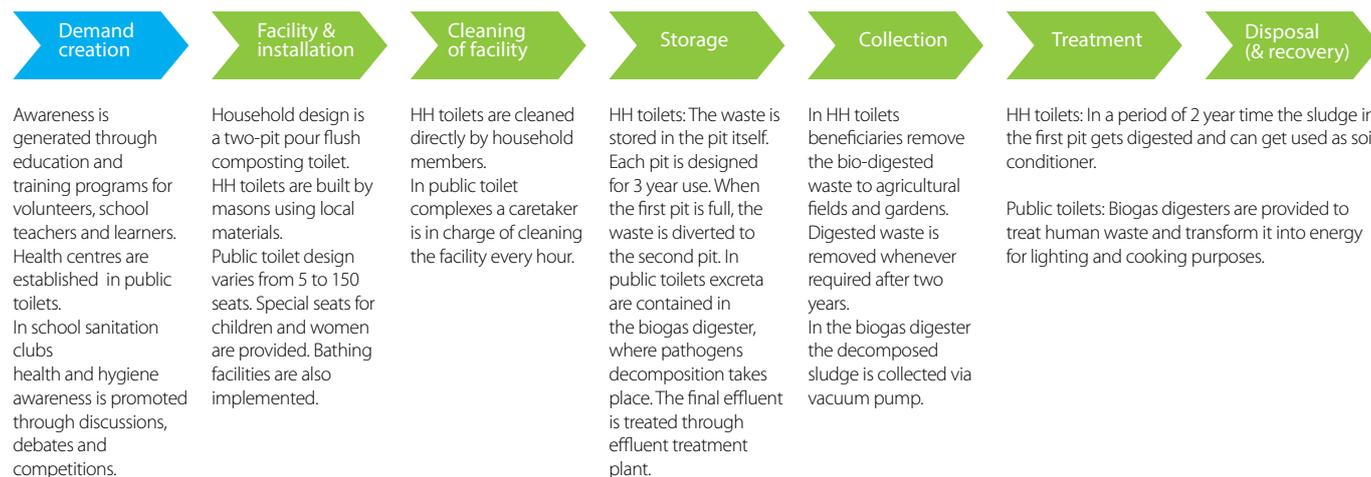
Toilets are usually built at a distance of 30 feet from open wells, 15 feet from tubewells and 15 feet from piped water supply. Sulabh toilets require 1 to 1.5 litres water to flush per single use.

In Sulabh two-pit pour flush toilets, pits are used alternately. When the first pit is full, the user switches to the second pit, leaving the content of the first pit to decompose (approximately for two years).

Biogas from Public Toilets: Biogas plants are linked to public toilets. Only excreta with flush water are allowed to flow into biogas plant for anaerobic digestion. For biogas generation no manual handling of excreta at any stage is required. The biogas produced is used for cooking, lighting mantle lamps, and electricity generation.

Effluent Treatment System (SET): Sulabh developed a technology by which the effluent of the biogas plant is turned into a colourless, odourless and pathogen-free liquid manure. The technology is based on filtration of effluent through activated charcoal followed by ultraviolet rays. The filtration unit makes it colourless, odourless, free from organic particles and reduces BOD (Biological Oxygen Demand) and COD (Chemical Oxygen Demand) significantly. The treated effluent is deemed safe for aquaculture, agriculture gardening or discharge into a water body. It can also be used for floor cleaning of public toilets in drought prone areas.

How does it work?



Current & potential reach

- Constructed and maintained over 8000 public toilets and 200 biogas plants;
- Provided/converted two-pit pour flush toilets in 1.3 million households in India.
- Trained over 8,000 women volunteers in India to work in health and hygiene promotion .
- It operates in Bhutan and Afghanistan (5 public toilet complexes built).
- Sulabh model adopted in China, Bangladesh, Burkina Faso, Ghana, Kenya, Mali, Nigeria, Senegal, Tanzania and Zambia.
- Provided training of Sulabh technologies in Africa (Ethiopia, Mozambique, Uganda, Cameroon, Burkina Faso, Kenya, Tanzania, Cote d' Ivorie, Mali, Ghana, Rwanda, Senegal and Zambia)

STRENGTHS

Help eliminating the practice of scavenging in India

Strong involvement of women in sanitation and hygiene.

Collaboration with local municipalities

CHALLENGES

Funding

Funding

National Government of India, local municipalities, private sector and international organisation.

Further information & key contacts

Website: www.sulabhinternational.org

Sulabh Bhawan, Mahavir Enclave, Palam Dabri Marg, New Delhi, India
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Email: sulabhinfo@gmail.com



WASH United



What is it & for whom

WASH United is an award-winning international social impact organization that pioneers the use of fun, sports star ambassadors, interactive educational games, and innovative campaigning formats to increase awareness of sanitation & hygiene (hand-washing and menstrual hygiene) and to facilitate behaviour change at scale. The goals of the WASH United Clubs are to:

- Make toilets sexy & inspirational: working to raise awareness on the importance of sanitation.
- Advocate hand-washing with soap at critical times and facilitating hand-washing behaviour change.
- Bring the most neglected of WASH issues, menstrual hygiene management, into the spotlight.
- Lobbying high level decision-makers for human rights to water and sanitation (HRTWS).

The main methods are:

- Participatory, game & fun based schools / youth football club curricula, that engage students and teachers to learn the importance of WASH and facilitate behaviour change.
- Innovative campaigns designed to reach the general public, and specifically the poor and marginalised, around WASH issues in an engaging, effective and efficient manner through communications channels such as TV, radio, press and social media.
- Sport based and social media campaign to create awareness around WASH issues in the global north.

- Tailor-made solutions for specific programmes
- WASH United customised material with stakeholder logos translated into local languages
- Free access to WASH United materials for local NGOs, Schools, local authorities

Partnership ecosystem

WASH United has strategic partnerships with UWASNET, WASH Ethiopia Movement, and TED Lesotho to implement project activities. It works closely with international partners such as GIZ, WSSCC, WaterAid, German WASH Network, World Toilet Organisation, Government of India, WSP, End Water Poverty, UN Special Rapporteur on Human Rights to Water and Sanitation, Argyham, Sanergy, Ecotact. Also works with the sports sector, e.g. Street football world, FC Bayern Munich, Olympic Marseille, CECAFA. WASH United also seeks strong relationships with local authorities, such as the Kampala City Council in Uganda.



WASH In Schools (World Toilet Cup)

Sustainable business model

Three types of solutions for stakeholders' various needs.

- Free online access and download of existing material for local NGOs, schools & local authorities.
- Customised material where Wash United tools are only adapted to local languages and needs.
- Tailor-made products to suits specific programmes and campaigns.

How does it work?



Training & campaigns using famous sport (football and cricket) stars, games and positive messages to create awareness of sanitation, hand-washing with soap, MHM and HRTWS.

Current & potential reach

The first WASH United campaign began in 2010 in conjunction with the FIFA World Cup in South Africa to work in Africa and was registered as non-profit organisation in Germany in 2011. Since then, WASH United has established offices in Delhi, India and Nairobi and Kenya and works in cooperation with local partners in Uganda, Lesotho, Ethiopia, Tanzania, and Ghana. WASH United has successfully transferred the approach from football to cricket in India, has implemented the Great WASH Yatra campaign that reached 230 million people and trained 8,414 children.

Funding

Bill and Melinda Gates Foundation, Swiss Development Cooperation, German Ministry for Economic Development, German Ministry of Foreign Affairs, GIZ, Norwegian Foreign Office, French Foreign Office, WSSCC.

STRENGTHS

Innovative and effective WASH in schools (WinS) approach, campaigns and communication materials

Interdisciplinary work using communication, PR and design expertise

Attracts new actors from sport to engage in WASH

CHALLENGES

Support from key decision makers is needed to successfully implement the approach

Lack of enabling infrastructure in schools / youth football clubs

Women are not always able to attend events

Further information & key contacts

Website:
www.wash-united.org/home.html

Chief: Thorsten Kiefer
 Email: info@wash-united.org



Handwashing in schools during the Yatra.

What would it take to scale this model?

WASH United recognises that a wide range of organisations in the WASH sector and the nonprofit space could benefit from having access to high quality, proven and innovative tools and communication materials. To give as many actors as possible access to these, WASH United will develop a delivery platforms for off-the-shelf (free), mass-customized (low fee), and tailor made products. (A product catalogue is currently under development and will be available by end 2013). ■



Campaign Materials from Uganda

WaterSHED (Water, Sanitation and Hygiene Enterprise Development)

What is it & for whom

WaterSHED aims to foster a dynamic rural marketplace for WASH products and services. The model address a market failure that inhibits mass adoption of improved latrines related to lack of demand and a corresponding low supply response.

The Hands-Off approach to WASH marketing, pioneered by WaterSHED, has emerged as a value-chain development success story. Integral to this success has been the relationship between NGO-facilitator, the private sector, local government, and BoP households, assisting small local businesses to create and supply demand for low-cost sanitation products and services.

In three years, the program has scaled business and sales networks to reach a consumer base of nearly 3 million people (650,000 households) and sold over 54,000 latrines in Cambodia.

- Enterprise Development
- Social Marketing
- Government Engagement

KEY PARAMETERS (June 2013)

- Selling price set by individual suppliers & varies based on input costs and delivery: average core latrine 45 USD
- WaterSHED program cost/toilet sold: 18 USD
- Longest installed latrine: 4 years
- Number purchases since Jan 2011: >54,000 latrines
- Knock on impact ratio: For every 1 latrine sold by a project supported enterprise another latrine is installed

Partnership ecosystem

- Stimulate **small and medium scale local businesses** by demonstrating a viable business proposition.
- Empower **rural households** to be active, informed consumers of WASH products and services and appropriate financing options.
- Engage **local government** as partner to enable unfettered, unsubsidised market transactions.
- Create **government and non-government partnerships** for innovation in social marketing, such as the national "Stop the Diarrhoea" campaign tools

Sustainable business model

WaterSHED's Hands-Off approach to sanitation focuses on supporting local businesses to recognise and capitalise on the local sanitation market opportunity. They:

Break down barriers

- Introduce lower-cost, easy to purchase products based on insights from market research
- Bring products to rural communities through door-to-door and village based sales events
- Introduce the concept of sales agents, training and equipping them with motivational sales and marketing activities and tools
- Promote a core latrine as a DIY package
- Include delivery, sales and marketing costs in the advertised price
- Use simple, product promotional brochures
- Ensure consumers experience a trustworthy and easy purchase process

Motivate adoption

- Embed social marketing approach within the sales pitch
- Engage consumers in a decision-making journey towards latrine purchase or construction

Oversight and brokering...

- Local authorities encourage businesses to actively market and sell their local products and services and provide confidence for consumers to enter into transactions.

Safety & environment

- Cambodia has less than 25% sanitation coverage in rural areas
- There is no national specification or minimum standard for latrine design
- There are no environmental standards for latrine waste handling or disposal
- Latrine design meets JMP standards of complete separation of waste from human contact

- Consumers have a district preference for water seal, ceramic squat pans. Consumer source water from the village supply i.e. pond, river or well
- On-site treatment and disposal and viable business models for waste transport, treatment and reuse are being explored.

Elements of the *Hands-Off* Approach

Enterprise Development

- Introduce lower-cost, easy to purchase products based on market research insights
- Develop workable business models and identify existing best-fit businesses
- Train enterprises in use of simple sales and inventory tracking tools
- Provide targeted one-on-one business management support based on an enterprise's needs
- Design and field test simple marketing tools and tactics
- Train sales agents in door-to-door and village level sales

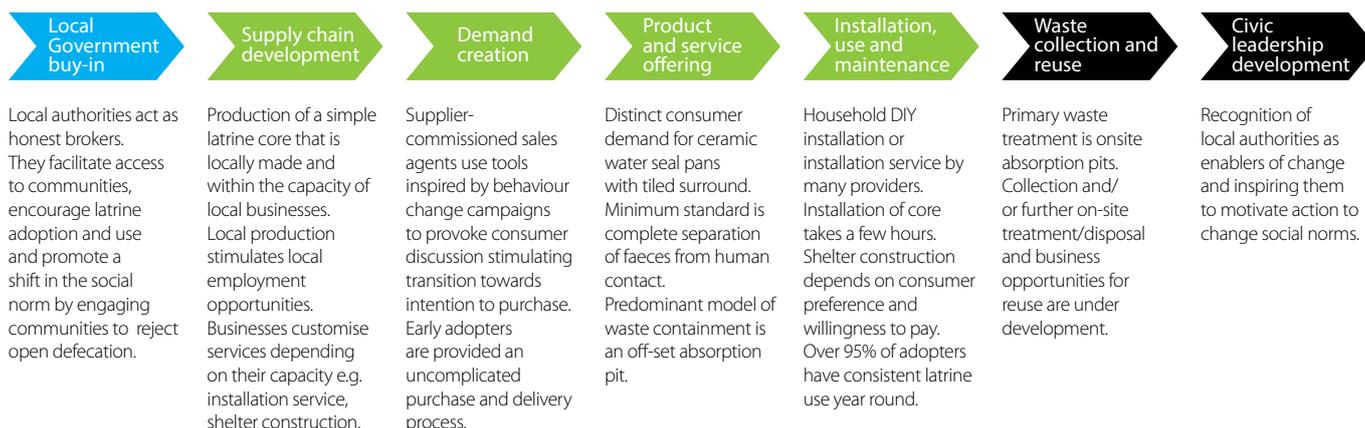
Social Marketing

- Develop social marketing messages to inspire behaviour change
- Work with national government and sector stakeholders to develop nationwide behaviour change campaigns
- Link social marketing activities with commercial purchase opportunities

Government Engagement

- Target sub-national officials to act as sanitation champions
- Support commune-level staff to become sales and promotional agents
- Train provincial staff in sanitation coverage monitoring
- Consumer protection: support government staff to act as 'honest brokers' between consumers and suppliers

How does it work?



Current & potential reach

- Model implemented in Cambodia
- 159 local sanitation enterprises trained and supported.
- 323 sales agents doing village-level promotions.
- 53 districts covered by marketing and sales events.
- Over 54,000 toilets sold by enterprises since January 2011.
- Market opportunity in current areas has an estimated worth of 25M USD or 500,000 households without a latrine.

Funding

- 1. Proof of concept** including supply and demand R&D and field testing of approaches – funded by USAID, consortium of UNC at Chapel Hill, Lien Aid, WTO, iDE, 17 Triggers Ltd.
- 2. Replication and expansion** scaling up from 4 districts to 60 districts – funded by The Stone Foundation, USAID, The Diageo Foundation, The Waterloo Foundation.

Program cost per latrine installed < 18 USD

STRENGTHS

Keeps barriers to market entry low, engages existing business, understands that sanitation can be a complementary product line within a larger business

Encourages transparency (e.g. no hidden extras in the product price)

Reaches the consumer through door-to door and village sales mechanisms

Identifies appropriate exit strategies for the market facilitators (often NGOs)

Embedding the local authority as sanitation champions & honest brokers

CHALLENGES

Businesses may have other higher margin opportunities

Finding the balance between low price and business incentive (unit margin)

Demand outstripping supply

Still need low-cost options for difficult geographical conditions (e.g. Flood zones)

Pervasive subsidy environment can lead to consumer purchase delay

Further information & key contacts

Website:
<http://www.watershedasia.org>

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What would it take to scale this model?

- The Hands Off business model relies on a deep understanding of the local consumer preferences and business environment and has the ability to adapt accordingly. The potential is only limited by the market opportunity.
- Partners with an understanding of local business engagement are critical to customizing the approach based on local conditions.
- Latrine technologies need to be grounded in local law, local preferences and geographical factors.
- Cost can be separated into the establishment costs, including R&D, and implementation. Implementation cost could be in the order of 4-5 USD per person. Those project that scale efficiently and effectively will be able to drive down the per capita cost.
- Taking this model to scale is limited only by the willingness to embrace a real market-based approach. Major risks include:
 - Wanting all businesses to 'do the same thing'
 - Trying to create entrepreneurs rather than work with those already displaying business acumen.
 - Wanting to control price, product and service
 - Focusing on only demand or only supply
 - Assuming that cost is the only barrier or that consumers will be attracted to the cheapest product.
 - Expecting businesses to lower profits
 - Failing to support local authorities to embrace their leadership and influencing role. ■

Continued overleaf..

WaterSHED (Water, Sanitation and Hygiene Enterprise Development)



Further insights

WaterSHED is inspired by the significant change in access to sanitation that is taking place in rural Cambodia. In 2009 government authorities mocked the idea of a viable market for sanitation products and services, now they have realised that embracing the market can help to reduce the burden on government providing a viable mechanism reach a large proportion of the 78% of the rural population that lacks access to sanitation.

WaterSHED has also undertaken a number of related studies:

- 1) Consumer demand behaviour research - In depth consumer research was undertaken in 2010 to understand more about households.
- 2) Understanding consumers – in 2012 WaterSHED undertook sanitation adoption study amongst consumers in the sales target area to explore changes in sanitation coverage, to understand more about consumer awareness, preferences, drives and barriers to sanitation adoption and to evaluate customer satisfaction with latrine products.
- 3) Civic Leadership – In 2013 WaterSHED commenced a pilot project to develop, test and compare the effectiveness of two innovative investment approaches to cultivate the emergence of champions in local government and bring sanitation equity and change to rural communities.



WSUP and WATERAID - Sanitation Marketing Programme in Madagascar



What is it & for whom

- The programme aims to use marketing strategy to raise demand for sanitation, as well as strengthening the supply chain for sanitation products and services.
- The Programme stimulates demand amongst households through communication and marketing campaigns, targeted community hygiene/ sanitation events and by providing access to small credit for purchasing hygienic 'SanPlat' latrine slabs and other sanitation products. To support the supply chain, training for SanPlat masons and retailers are provided.
- The programme has been undertaken in 4 peri-urban communes of Madagascar, with a population of about 120,000. The target population are low income communities.

KEY PARAMETERS

Selling Price: 15, 000 MGA (7 USD)



Partnership ecosystem

The partners are WaterAid, WSUP, DFID, USAID.

Sustainable business model

Demand Creation

- Formative research to understand current conditions in the areas of intervention, followed by in depth studies to identify determinants of behaviour change.
- Media and marketing communication campaign based on broad casting stories on radio and TV, puppet shows, posters and fliers distributed on buses.
- Monitoring and evaluation of the sales achieved and the campaign effectiveness takes place in each area.

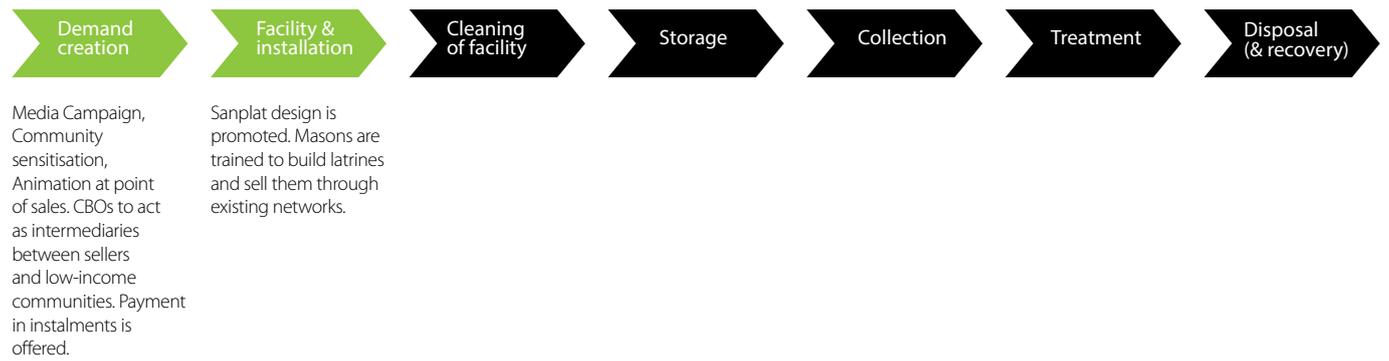
Supply chain Development

- Mapping of local product suppliers and building their capacities.
- Masons in four peri-urban communes are trained to make *SanPlats*, and are given a start-up subsidy in the form of equipment and materials to produce approximately 50 *SanPlats* each.
- Retailers (existing stores selling hardware and/ or building materials) are engaged to sell *SanPlats* to the public.
- Community Based Organisations (CBOs) are engaged to act as intermediaries between retailers and purchasers. CBOs provide catalogues of *SanPlats* designs and details of suppliers, and actively promote both *SanPlats* and improved sanitation and hygiene behaviour. They also hold a revolving fund enabling low-income households to pay for *SanPlats* in instalments.

Demand Creation



How does it work?



Current & potential reach

Current reach: 2023 latrines sold under African Cities for the Future (ACF), Washplus and DFID programme.

Next Steps: Progressive scale up of sanitation programme support at citywide level by 2015.

Target:
Under ACF extension: 1200 additional latrines by end of Sept 14.
Under DFID program: 3000 additional latrines by end of March 2014 (1st year programme).



Further information & key contacts

Website: www.wsup.com

STRENGTHS

Engagement of existing suppliers rather than establish new entities from scratch: suppliers are trusted and build existing market networks

Instalment payments are offered, allowing the poorest of the poor to afford to buy a latrine

CHALLENGES

SanPlat weight (30 Kg)

Lack of/scarcely engagement of local municipalities in building demand for sanitation

What would it take to scale this model?

It is critical that government takes on the role of promoting behaviour change to increase (and sustain) demand for SanPlats. SanPlat sales do not seem to be profitable enough for retailers or masons to be incentivised to invest substantially in marketing their products, at least at current levels of demand. For scale-up to occur, communes would need to step in and play a stronger role in sanitation and hygiene promotion. ■



MAPPING SANITATION SOLUTIONS

CONCLUSIONS

What does this compendium of sanitation models tell us? And, perhaps more importantly, what doesn't it tell us?

First of all, this compendium testifies to the fact that there is now much activity in the sanitation space, and that there are examples of innovation and market-based thinking at every stage in the value chain.

Many of the models show innovation in their approach to demand creation; for example, the Great WASH Yatra organised by WASH United, a mobile fair on the topic of sanitation, has reached millions in India, WaterShed and IDE in Cambodia as well as the Madagascan sanitation marketing programme both use modern marketing techniques for their products and CLTS, CATS and Community Health Clubs have proven their ability to mobilise rural communities for sanitation through vivid demonstration and community action. Several of these approaches show that you can mobilise communities to build latrines for themselves, even without technical and financial support.

A number of approaches aim at being, or becoming, stand-alone business models, for example, Watershed and IDE are successfully marketing toilets in Cambodia, whilst Sanergy, Clean Team and Peepoo are demonstrating that they have the potential to be self-sustaining as they scale up from pilots. Yet none of these models can currently claim to be financially sustainable without public subsidy. PSI's 3SI and the Selling Sanitation approach are now preparing moves into this space - attempting to catalyse a market for sanitation. Donors looking for quick gains from sanitation marketing should note that catalysing a market takes time, patience and long term thinking.

Gramalaya's innovation for success in India relies on arranging finance: a loan organisation helps to negotiate subsidy and toilet acquisition. A number of

the other models suggest that access to finance may have to be considered, especially for the poorest.

Several community based approaches were technology agnostic. There is an opportunity here for sanitation business. Technological solutions are needed that are designed with consumers in mind: toilets have to be attractive, reasonably cheap, come in a variety of shapes and sizes be and easy to transport, use and clean. Consumer centred design and other approaches that design toilets around what people want and need, for example with regard to look and odour, are still in short supply. In other words, a more commercial approach to product design would be helpful. This would ideally be carried out by real commercial entities, and not by NGOs trying to behave like businesses (though this can be a good start).

Whilst most of the models that we reviewed had aspirations to find solutions for waste treatment and final disposal, few had actual solutions working at scale. For rural models this is less of a problem, but for the urban Clean Team, Sanergy and Peepoo examples, solutions are being actively sought. It is possible that the back end of the value chain, waste recovery, could provide revenue that could subsidise sanitation costs. Attractive as it may seem, it seems unlikely that the nutrients in waste are worth more than the costs of transporting them, whatever they are used for. The economic case for revenue from waste still remains to be made.

All of the models reviewed here operate in an ecosystem that involves local and national Government, communities and external support organisations, such as NGOs, who often play the catalyst role. Even when a commercial entity plays the pivot role, they still need to interface with authorities and community organisations. Regulations may need revising or revisiting when they inhibit innovation in toilet design and in waste disposal.

Again, regulatory reform can be laborious and unglamorous work. There is a need for guidance and sharing of best practice to help governments play their role better. The role of the enabling environment is key and more needs to be learnt about how to reduce barriers to market entry for sanitation businesses.

More of the models reviewed here were concerned with rural, and individual, sanitation solutions than with urban solutions. Increasing urbanisation means that these are urgently needed, and space limitations in such settings suggest that communal solutions may be needed, as well as systems that involve waste collection (e.g. PeePoo and Clean Team). Night soil collection is an ancient urban tradition across Asia and Africa, and one that could again become an acceptable business were it made safe and acceptable and were it commodified.

Overall there are rich lessons to be gleaned from looking carefully at existing models. Each model that we have surveyed has at least one area in which they are making real progress. Can all of these lessons be combined into one approach? From a business perspective this seems unlikely—where specialisation, rather than trying to be all things to all men is usually better business. Instead there are many niche opportunities and many business propositions that could help fill them.

Whilst this review is rich in lessons, there are many things that this review does not tell us:

-it does not tell us why sanitation is the norm in some places (eg urban West Africa, some villages in India) and not in others. It would be useful to look into the history of how and why some groups seem to have solved their sanitation problems without any recourse to external help, whilst others have not.

-it does not tell us how some cities have managed to avoid the latrine problem completely and organised

sewerage and house connections for the masses, for example, in many cities in Francophone West Africa and in Latin America despite lack of water, resources and strong local government. Again, it would be useful to better understand where and how this, more convenient, solution has been found, as well as the financial implications. 'Low cost' on-site sanitation may appear to be 'low cost' to cities, but it may actually be 'high cost' to an individual household, which has to build, maintain and empty an on plot toilet rather than just connect to an existing, publically-provided sewer.

-it does not tell us what the findings of a review like the current one would have been had external evaluations of performance, reach and results been available. It is time more attention was paid to objective evaluation in the sanitation sector, so lessons about what works best, and what doesn't, can be learnt and shared.

-it does not tell us whether there are any truly viable financial models for sanitation 'out there'. Hard-nosed business evaluations are needed. At the moment, all of the models need some form of public subsidy, to set up, to run and to maintain the service, or as is the case of India, directly to households to build their toilet. Perhaps there really is no business model. Or perhaps there is, given that 65% of the world's population do have toilets and most needed to no public subsidy to acquire them.

A major conclusion of this work is, then, that we need a far better understanding of the economics and financing of sanitation as a business.

Finally, it is encouraging to see so much activity in sanitation. Patience will be needed to see these efforts come to fruition, but much is being learnt and at last the world is talking about toilets!

GLOSSARY OF TERMS

ADB	Asian Development Bank	MOH	Ministry of Health
ACF	African Cities Future	MOU	Memorandum Of Understanding
AUSAID	Australian Agency for International Development	MSF	Médecins Sans Frontières/Doctors Without Borders
BCC	Behaviour Change Communication	NGO	Non-Governmental Organisation
BOD	Biological Oxygen Demand	OD	Open Defecation
BOP	Base of Pyramid	ODF	Open Defecation Free
BORDA	Bremen Overseas Research & Development Association	O&M	Operation and Management
BRAC	Bangladesh Rehabilitation Assistance Committee	PATH	Program for Appropriate Technology in Health
CATS	Community Approaches to Total Sanitation	PSI	Population Service International
CBO	Community Based Organisation	R&D	Research & Development
CBS	Community Based Sanitation	SANPLAT	Sanitation Platform
CECAFA	Central Africa Football Associations	SET	System for Effluent Treatment
CEU	Commission of the European Union	SHG	Self-Help Group
CHC	Community Health Club	SIDA	Swedish International Development Cooperation Agency
CLTS	Community Led Total Sanitation	SLU	Swedish Institute of Agricultural Sciences
CO	Credit Officer	SME	Small and Medium-sized Enterprise
COD	Chemical Oxygen Demand	SWC	School WASH Committee
CSC	Communal Sanitation Centre	TSP	Turnkey Solutions Providers
DANIDA	Danish International Development Agency	TSSM	Total Sanitation and Sanitation Marketing
DESWAM	Decentralized Solid Waste Management	UNC	University of North Carolina
DEWATS	Decentralized Wastewater Treatment Systems	UNDP	United Nations Development Programme
DFID	Non-Governmental Organisation	UNICEF	United Nations Children's Fund
ECOSAN	Ecological Sanitation	USAID	US Agency for International Development
FANSA	Freshwater Action Network South Asia	UWASNET	Uganda Water & Sanitation NGO Network
FMCG	Fast Moving Consumer Good	WASH	Water Sanitation and Hygiene
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit –former GTZ	WATERSHED	Water, Sanitation and Hygiene Enterprise Development
GSF	Global Sanitation Fund	WATSAN	Water and Sanitation
GTF	Governance and Transparency Fund	WSP	Water and Sanitation Program
HH	Household	WSSCC	Water Supply and Sanitation Collaborative Council
HRTWS	Human Rights to Water and Sanitation	WSUP	Water and Sanitation for the Urban Poor
ICT	Information Communication Technology	WTO	World Toilet Organization
IDE	International Development Enterprises	VWC	Village WASH Committee
IDP	Internally Displaced People	VWSC	Village Water and Sanitation Committee
IDRC	International Research Development Centre	YSMD	Young Students' Movement for Development
IFC	International Finance Corporation		
IRC	International Water and Sanitation Centre		
JMP	Joint Monitoring Program		
MANTRA	Movement and Action Network for Transformation of Rural Areas		
MIT	Massachusetts Institute of Technology		
MFI	Micro Finance Institutions		
MHM	Menstrual Hygiene Management		

CURRENCIES

GHS	Ghanaian Cedi
INR	Indian Rupee
KES	Kenyan Shilling
MGA	Malagasy Ariary
USD	US Dollar

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