

SESSION 1

Financing Change in Personal Hygiene Behaviour and Demand Creation for Sanitation

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Draft as of October 5, 2009*

**Prepared for the KfW Water Symposium 2009
“Financing Sanitation”
October 8 and 9, Frankfurt**

* A final version will be published in the Symposium proceedings

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Table 1	Expected reduction in diarrhoeal disease morbidity from improvements of one or more components of water and sanitation
Table 2	Cost per adopter of different hygiene and sanitation campaigns

Acronyms

CLTS	Community-Led Total Sanitation
GDP	Gross Domestic Product
HBC	Hygiene Behavior Change
MOA	Motivation, Opportunities, Abilities
NGO	Non Governmental Organization
ONEA	Office National de l'Eau et de l'Assainissement (Burkina Faso)
ODF	Open-defecation free
PHAST	Participatory Hygiene and Sanitation Transformation
PPHWS	Public Private Partnership for Handwashing with Soap
SDC	Sanitation Demand Creation
TSC	Total Sanitation Campaign

Abstract

A rapid review of past experiences in developed countries and the evolution of methods used in developing countries, including successes and failures, in changing hygiene and sanitation behaviors are presented. We examine relative costs and impacts where these data are available and consider institutional arrangements and actors, as well as approaches for linking hygiene behavior change and sanitation demand creation (so called software investments) with hardware investments. Finally, we explore considerations and opportunities for development banks and other financing agencies to become engaged in the scale-up of hygiene behavior change and sanitation demand creation approaches which have demonstrated success.

1. Introduction

Investments to improve hygiene and sanitation in developing countries produce substantial health gains (see Annex 1, Table 1) and have been shown to yield important economic benefits¹. **Hygiene behaviour change** (HBC) is essential to valorising the health impacts of improved water supply and sanitation infrastructure while **sanitation demand creation** (SDC) is a prerequisite for sustaining sanitation improvements. This paper provides an overview of sanitation demand creation and hygiene behavior change approaches for low income populations in developing countries. It draws from past and present experiences from different regions of the world. The review seeks to inform development banks' investment opportunities for financing these software sanitation investments in developing countries.

The key domains considered by this paper include:

- 1) creating household demand for (investment in) improved sanitation facilities
- 2) promoting sustained use of improved sanitation facilities (stopping open defecation)
- 3) changing key hygiene behaviors in the home, particularly:
 - hand washing with soap at key times
 - safe disposal of infant feces
 - safe drinking water use and storage

1.1. Useful behavior change background and concepts

Behavior change strategies must consider at least three essential elements: i) individuals making the change must have sufficient **motivation (M)** to change; ii) any necessary materials, tools, information, and ingredients, referred to as **opportunities (O)**, to make and sustain the change must be accessible to individuals; iii) individuals must possess the requisite **abilities, resources, and skills (A)** to take advantage of available change opportunities². The **MOA** framework has value as a flexible diagnostic tool to understand existing sanitation adoption and usage behaviors, habits and routine practices for hand washing, child stool disposal, and safe water use and storage, and as a framework for developing sanitation demand creation and hygiene behavior change programs. Theories and practice from the fields of health behavior, behavior change communications, social science, consumer behavior and economics,

¹ See Economics of Sanitation Initiative reports (WSP-EAP2008) and Cairncross & Valdmanis (2006).

² Rothschild (1999)

marketing, psychology, risk perception, and more recently neuroscience, have and continue to provide knowledge and new insights into individual behavior.

Common ingredients and elements of behavior change approaches for hygiene and sanitation include: communications campaigns, participatory learning, social (mass, community) mobilization, consumer education, health education, and use of incentives and sometimes sanctions. Nearly always for sanitation demand creation, and occasionally for hygiene behaviors, the above elements must also be effectively coupled and coordinated with supply-side strategies to address lack of opportunities and abilities to access appropriate affordable services and products for the target behavior. These might include strategies that: (i) reduce household transaction costs in accessing good products and services, (ii) expand supply chains to reach target populations, (iii) improve the product/service offer to better match identified needs, purchase power, situation and preferences of low income households (e.g., by changing service levels, miniaturizing, changing pricing structures, introducing new payment options, etc), and (iv) provide access to household financing and credit for sanitation.

From a societal or community-level perspective, it may become necessary and effective to add sanctions to the behavior change ingredient mix, such as the use of the law, regulations, and enforcement to achieve desired results. This can be justified when public externalities of non-compliance with the desired behavior are large and the private or personal benefits of changing are insufficient to motivate voluntary change by the target group. However, it is rarely considered effective to use law and sanctions without providing opportunities and assuring abilities exist for target populations to adopt the targeted change.

1.2. Hygiene and sanitation improvement motivations

A considerable amount of work has been done to identify the private benefits of improving hygiene behaviors and sanitation which motivate individual behavior change among low-income populations in developing countries. Motivators for handwashing with soap at key times have been linked to disgust, nurture, social norms, sensory cues, and reduced infectious disease transmission, the latter more pronounced during acute disease threats such as SARS or Swine flu³. Motivators for investment in household sanitation include improved cleanliness, comfort, convenience, disgust, family safety, privacy, status/pride, social norms/pressure, and health improvements⁴. Motivators for treating drinking water or improving quality often concern aesthetic benefits of improved taste, smell and appearance, in addition to status, social norms and reduced disease risk. Infectious disease risk reduction tends to be just one of a set of typically more salient motivators which deliver positive, tangible, immediate and certain benefits, while disease risk reduction can often be uncertain, unpredictable and future-oriented. While private motivations for safe child fecal disposal and safe drinking water use and storage are less studied, non-health benefits including disgust and cleanliness, nurture, status, and social norms, consistently found as motivators of other hygiene and sanitation behaviors, are likely to be important for these as well. It is notable that societal reasons for investing in improved hygiene and sanitation concern mostly reducing disease burdens, public health costs, and improving environmental conditions and deviate considerably from the private non-health benefits of these changes. The power of private non-health benefits should and can be effectively mobilized to achieve targeted behavior changes in low income populations.

³ See Scott et al. (2007) and Curtis et al. (2009) for developing country studies.

⁴ Jenkins & Sugden (2006); Jenkins & Curtis (2005); Allan (2003); Kar (2003).

1.3. Role of education

A consistent determinant of positive hygiene behaviors and sanitation demand is formal education. Good hygiene behaviours in the home closely correlate with education level of the mother. Thus, a recognized long-term behaviour change strategy is to invest in higher levels of education for the poor in developing countries, with particular attention to the educational needs of girls. In the shorter term, behaviour change and demand creation communication strategies must use effective ways to specifically reach less educated poorer population groups.

1.4. Culture, gender and behavior

Important cultural dimensions and taboos are often associated with existing hygiene and defecation practices, norms, and preferences across social groups and settings⁵ and must therefore be given adequate attention in development and adaptation of promising hygiene behaviour change and sanitation demand creation approaches in new settings, to effectively reach poorer less educated segments. Cultural and taboo aspects of hygiene and sanitation behaviors are often intertwined with gender-based roles, power, and responsibilities in the home and community. Women and girls have sanitation and hygiene needs, preferences, roles and responsibilities which often differ substantially from those of men, and these differences need to be understood and addressed early into the design of programs⁶. Thus gender analysis and cultural adaptation are important ingredients for developing effective interventions for hygiene and sanitation behavior change for the poor.

2. Approaches to change personal hygiene and household sanitation behaviour

We begin with a review of historical changes and approaches in personal hygiene and household sanitation from Europe and the USA⁷. Next we examine development of approaches and experiences addressing hygiene and sanitation among low income populations in developing countries beginning in the 1980's.

2.1. Historical approaches and experience from developed countries

Beginning in the 1800s, the *sanitary revolution* in Europe and the USA gained increasing momentum, coming of age in the second half of the century. *Driven in by urban public health concerns* over infectious disease epidemics of cholera, typhoid, yellow fever, and reactions to filth and poverty in rapidly growing cities, the revolution was characterized by major investments in sanitary public infrastructure (city sewers), development of the first public health departments, creation of sanitary services for municipal waste collection, and the passage of numerous sanitary regulations and enforcement, led and funded largely by municipal and state governments and local tax moneys. Premised on scientific misunderstanding of infectious diseases as caused by 'miasmas' from feces and rotting matter, efforts focused on major urban drainage and clean-up of fecal, solid and liquid wastes responsible for the 'putrefying odors' thought to cause infectious diseases. Regulations and municipal services were developed to enforce better on-site sanitation practices, including requirements for pit emptying. Efforts reflected local government initiative and political leadership. Investments relied on local taxes, bonds and the power of regulation and enforcement rather than private household demand.

⁵ Elmendorf & Buckles (1980)

⁶ See for example the review by Pearson & McPhedran (2008).

⁷ This review draws on historical research by J.A. Tarr et al. (1984), Siegert (1980) and Aeillo et al. (2008).

The **hygiene revolution** in Europe and the USA was a more **gradual, evolutionary and decentralized process** that spanned 150 years, reflective of the much more difficult task of changing private personal behaviours often grounded in deep-seated social and cultural norms. Personal hygiene first became the focus of transformation towards the end of the 18th century. Promotion of soap use came much later; its popular consumption for personal hygiene and bathing began to take off towards the end of the 19th century. The hygiene revolution was infused by social and moral up-lift agendas led by new secular and civic groups who popularized links between physical hygiene and moral purity to change social norms, and viewed urban filth, poverty, and disease as intertwined evils. Early examples included the publication of educational self-help literature, emphasizing cleanliness, avoiding bad odours, and hygiene behaviour but initially not soap use⁸. Teachers, clergy, philanthropists and other civil organizations and leaders took up the role of spreading these ideas, influenced by the American philosophy that everybody can and should improve his living conditions.

The **use of cleaning agents** for hygiene can be traced to ancient times. The Romans practiced hygiene using ash and urine as detergents. To support wide-spread use of urine, official urine collection was organized and regulated in many roman cities. Earliest soap use can be traced to olive soap production in the 8th century Arab world and later to Marseille in the 14th century. In most of Europe and North America, soap remained a relative luxury and unaffordable for the poor until the late 19th century when cheaper soap production (Leblanc and Sovay soda processes) was coupled with abundant cheap sources of oil from whale and palm. Reduction and eventual removal of taxes on soap also played an important role in reducing costs and increasing consumption in countries like England.

Transformation of personal hygiene practices accelerated rapidly when commercial soap manufacturing companies entered the scene near the turn of the 19th century. Commercial advertising and marketing to change consumer and personal hygiene behaviour coupled with lower cost soap helped drive the soap revolution. Motivated by profits and a vision, their entry on the scene and subsequent growth in soap consumption was facilitated by increased access to indoor bathrooms⁹ and in-door plumbing, rising household purchasing power, and the on-going social, physical and moral improvement and reform campaigns sweeping Europe and North America. Increasing wealth no doubt played a crucial role; as consumer purchasing power increases, so does soap consumption¹⁰. The German chemist Liebig has suggested that soap consumption provides a good indicator for the increasing wealth of a nation. Rising soap consumption is consistently correlated with declining infant mortality rates across diverse geographies and time frames¹¹.

Rural areas did not always benefit from the above revolutions. In the USA, the rural sanitary and hygiene revolution occurred much later and requiring a separate concerted initiative specifically for rural communities by federal attention and resources. Efforts were aimed at poverty alleviation and improving public health, among other goals, and aided by large federal investments in rural electrification that helped transform rural home life by allowing access to in-

⁸ The German book "Noth-und Hülf-Büchlein für Bauersleute" [Plight and Help Booklet for Peasants] first printed in 1788 is an example. By the early 19th c., it was one of the most popular non-religious books in print with an estimated 400.000 copies.

⁹ In the US, 71% of urban and 33% of rural households had an indoor bathroom in the late 1920s with indoor bathroom; in Germany 20% of households had an indoor bathroom in 1950 (König 2000, p. 240).

¹⁰ Per capita soap consumption in England increased from 3.6 lbs/year in 1801 to 8 lbs/year in 1861, and nearly doubling again by 1891, aided by the reduction in 1833 and complete repeal in 1853 of the British soap tax (Aeillo et al. 2008).

¹¹ Aeillo et al. (2008)

home piped pressurized water and in-door plumbing. Key elements included public sector-funded rural health extension and outreach programs, coupled with commercial supply and marketing of in-door sanitary and hygiene (e.g., washing machines) products and services.

2.2. Origins of approaches in developing countries

To understand approaches to hygiene behaviour change and sanitation demand creation among low income populations in developing countries, it is useful to rapidly review water supply and sanitation development in the post-independence era.

At independence, developing countries *inherited colonial approaches* to sanitation, which often shared a basis in the use of by-laws, enforcement, and sanctions instituted by colonial administrations to enforce sanitary conditions. The colonial legacy can be seen to varying extents and ways. Very high rates of traditional latrine coverage and use in Kenya now, and in Uganda, prior to its civil war, reflect habituation from household latrine enforcement over generations, initiated by the British and maintained after independence. Institutionalized public toilets for the majority of Ghana's population (the corollary lack of household latrines) and dependence upon bucket latrine technology until recently are also rooted in Ghana's colonial legacy but reflect injection of the perverse incentives of post-independence political processes. Typically, colonial administrations invested in limited public infrastructure and low service levels, for example, bucket latrines in urban areas, while largely ignoring hygiene behaviour change and education needs for the large majority of rural poor.

The *1980s International Water Supply and Sanitation Decade*, in large measure, concentrated on fulfilling needs for innovative, new, and more appropriate lower-cost technologies to serve neglected poor populations in developing countries. Major advances were made in new low cost latrine and water supply technologies, especially for rural populations. However, the bulk of investments were put into *supply-driven hardware* construction programs for improving water supply infrastructure, and to a much lesser extent on household latrines. Sanitation demand and hygiene behaviour were largely neglected, with a few exceptions¹².

2.3. Sanitation demand and hygiene behaviour awareness

Awareness in the 1990s of the critical need and value of sanitation demand and hygiene behaviour to achieve impact and sustain infrastructure investments stimulated experimentation and emergence of three new behaviour change and demand creation approaches.

1. **Mass Social Mobilisation** is an action-oriented at-scale communications approach which mobilizes leaders from all sectors and all levels of society, starting at the highest levels, to focus attention and priority on solving a shared social problem using multiple channels and types of communication and social engagement. Implemented in Bangladesh in the 1990s at national scale¹³, it mobilized national attention on the very low and poor levels of sanitation across the country and motivated action by all levels of society to improve it. The approach can be adapted to different scales, including community scale, and complements individual-oriented behaviour change approaches.
2. **Participatory Hygiene and Sanitation Transformation** (PHAST) is a flexible sets of tools for use in a group-based structured process based on participatory rural appraisal and participatory learning theory and methods. PHAST was developed to help rural communities change any number of inadequate sanitation conditions and hygiene behaviours within their

¹² For an excellent review of the decade see Cairncross (1992).

¹³ See Heierli & Frias (2007).

community. Rigorous testing of the PHAST approach was undertaken in the late 1990's, leading to up-take and widespread application in many countries by numerous actors.

3. **Social Marketing**, is a well-established at-scale mainly individual-oriented behaviour change approach used in developed countries that is applied to a single well-defined behaviour or idea and target group. It is the use of commercial marketing techniques to promote the adoption of a behaviour that will improve health or well-being or the acceptance of a social cause or idea for which the benefits of adoption accrue to individuals or society as a whole¹⁴. Social marketing was testing in three projects¹⁵ in the 1990's to varying degrees of rigor:

- **Saniya Project, Burkina Faso (1995-1998)**, to increase handwashing with soap rates of mothers and child caregivers in the city of Bobo-Dioulasso.
- **Padear Project, Benin (1996-2000)**, to increase demand for and installation of household latrines: targeted at rural household heads in three Departments.
- **ONEA Project, Burkina Faso (since 1995)**, to improve on-site sanitation for households lacking a city sewer connection in Ouagadougou, based on a strategic sanitation plan.

Significant successes were achieved with each of the above methods and projects, although scale and scope differed. Bangladesh's social mobilization sanitation campaign, Benin's sanitation social marketing project, and Burkina Faso's ONEA project were each coupled with supply-side strategies to enhancing local provision of low-cost improved household sanitation facilities in response to increased demand. PHAST projects have generally been considerably smaller in scope and scale than mass social mobilization and marketing projects, due to greater face-to-face facilitation and time requirements of the community-by-community intensive participatory learning and action planning process. During PHAST communities sometimes decide to address problems outside the funding mandate or do nothing, creating difficulties for single-focus sanitation and hygiene investment projects.

2.4. Changes in community water and sanitation supply projects

In parallel with the above innovations, changes were undertaken in the design of water and sanitation supply projects during the 1990s, particularly in the use of subsidies for construction:

- latrine construction was sometimes integrated into rural community water supply provision projects, for example, as a pre-condition for getting water supplies,
- social intermediation by Non-Governmental Organisations (NGOs) was initiated to help communities organize and choose water supply and sanitation technology, under a **demand-responsive approach**,
- attention was paid to sustainability of hardware subsidies for sanitation, including creative delivery mechanisms and new partners (see Background Paper 2) ,
- funding for health, hygiene and sanitation education (e.g., PHAST) or demand promotion (e.g., social mobilization, social marketing, and social intermediation) was more frequently included within water and sanitation infrastructure investment projects,

¹⁴ For in-depth understanding & implementation of social marketing see Kolter & Zaltman Roberto (198971), Andreassen (1995), and; Weinreich (1999).

¹⁵ See Curtis et al. (1997, 2001) for the Saniya Project, Reif and Clegbeza (1999) for the Padear Project, and WSP-Africa (2002) for the ONEA Project.

- government-run and operated construction was replaced by private sector provision.

2.5. *Advances since 2000*

The years since 2000 can be characterized as the ‘coming of age’ of demand creation and behaviour change approaches for sanitation and hygiene. The first half of the decade saw increasing experimentation, innovation, adaptation, and learning as 1990s approaches spread. The Millennium Development Goal 2002 sanitation target added crucial attention and momentum to such efforts, including demand for rigorous impact evaluation, cost-effectiveness analysis, and scaling-up. Since the 1990’s innovations of social mobilisation, PHAST, and social marketing, several new promising approaches for achieving sanitation demand creation and hygiene behaviour change have established records of success. These include the following (see details in Annex 6.2):

4. **Community-Led Total Sanitation (CLTS).** From Bangladesh, this innovative community-oriented approach focuses on stopping open defecation without use of hardware subsidies. It has spread rapidly, with Ethiopia (Southern Nations) and India (Total Sanitation Campaign) the most notable examples of CLTS adaptation in terms of scale and impact.
5. **Sanitation Marketing.** Combining social and commercial marketing, this is a coordinated partnership approach to create household demand while simultaneously catalyzing the expansion of market-based supply of sanitation products and services to better meet the needs of unserved low-income populations. It has been successfully implemented in Vietnam and Benin and is currently underway by a number of other countries.
6. **Public Private Partnership for Handwashing with Soap (PPPHWS).** The PPPHWS approach partners government with soap companies to implement national-scale coordinated social marketing and commercial soap marketing to increase handwashing with soap at key times. Evolved from the Saniya Project, it was tested with considerable success in Ghana and has since spread to over eight countries.
7. **Community Health Clubs.** This is broad-based integrated health education and behaviour change approach that includes sanitation and hygiene among other health education themes led by public health staff. It applies participatory group learning methods similar to PHAST with the added structure of ‘club’ membership. Developed and tested in Zimbabwe, it has been taken up in a limited number of relatively small scale projects.
8. **Microfinance and Credit Institutions Partnering.** An important barrier to sanitation uptake for the poor is the difficulty of saving up the capital to build a toilet. This can also be true for purchase of durable household water treatment devices. Partnering with microfinance and credit Institutions is a strategy gaining increasing interest (see Background Paper 2).

2.6. *Examples of large scale implementation*

We review recent and on-going at-scale implementation of different SDC programs, three of them rural, from India, Ethiopia and Benin, and one urban from Burkina Faso. The first two draw on elements of CLTS, while the latter two adapt the sanitation marketing approach.

India’s Total Sanitation Campaign (TSC)

In an effort to reform its long-running Central Rural Sanitation Programme, India launched TSC in 1999¹⁶. Central Rural Sanitation Programme was a supply-driven heavily subsidized construction program without investment in sanitation demand change or hygiene behaviour

¹⁶ This synopsis draws from an evaluation of TSC in five Indian States by WaterAid (2008).

change that resulted in limited overall impact to rural latrine coverage and usage despite its massive size and duration. TSC emphasises awareness creation and demand generation as leading elements to mobilize communities to build latrines on their own. States and local governments use a variety of Information, Education, and Communication methods are used, including conventional posters, pamphlets, mass media, and inter-personnel activities, as well as the Community-Led Total Sanitation (CLTS) methods aimed at creating open-defecation free communities. Hardware subsidies for household toilets continue, often at reduced levels from Central Rural Sanitation Programme and sometimes limited to below-poverty-line households. In adapting CLTS, the entrenched Indian national rural household hardware subsidy program has been difficult to eliminate. TSC also funds rural sanitation marts and productions centres to provide local access to low cost latrine components and materials when unavailable in communities. The latter was used in Bangladesh and catalyzed a competitive rural latrine supply industry¹⁷.

A new element was added to TSC in 2003-04: use of financial incentives, prestigious awards, and competition for communities to achieve open-defecation free (ODF) and sanitized status. It has been highly effective in mobilizing communities and their leadership to accelerate the speed and scale of coverage changes since 2004. Key challenges of the incentive approach remain, including:

- need for independent verification of open-defecation free and sanitised status, to avoid distortions to the behaviour change process,
- need for on-going monitoring and renewed mobilization to sustain open-defecation free conditions and initial levels of latrine usage,
- neglect of accompanying hygiene behaviours such as handwashing with soap.

Rural Sanitation Promotion in Southern Ethiopia

Initiated by the health bureau of the Southern Region, this program mobilized health and local government personnel and rural communities and households to stop open defecation by taking the first step on the sanitation ladder. Southern Regional State with a population over 14 million, has succeeded in raising latrine coverage from 15% to 85% in 3 years (2002-2005), without hardware subsidies or substantial external finance¹⁸. Key strategies included pilot testing, a cascading process of advocacy from top to bottom of the health structure and among politicians and civil servants, achievement of consensus on broad-based high impact low-cost preventive health actions starting with household latrines, use of community volunteer promoters, particularly women, and flexible appropriate technology. Government cadre and community health workers engage in systematic door-to-door promotion to raise awareness, provide technical advice, and promote latrine building without hardware subsidy. Strong political leadership, clear performance targets, close attention to training, supervision and monitoring, and holding government workers and civil servants accountable for performance outcomes have helped make the program a success. The approach is spreading to other areas in Ethiopia as sanitation coverage becomes increasingly a performance indicator for elected local administrators. Questions remain about sustainability of traditional pit latrines that require on-going household investment to maintain.

¹⁷ See Luong (1994) and Heierli & Frias (2007).

¹⁸ WSP-Africa (2007)

National Rural Sanitation and Hygiene Promotion Program (PHA), Benin

Emerging from the 1990's Padear Project, Benin's national program combines sanitation marketing strategies to increase household investment in improved latrines with hygiene behaviour change focussed on 3 outcomes: latrine usage, cleaning, and maintenance; handwashing with soap after defecation; safe drinking water use and storage. The program involves a highly structured tested approach in which government outreach workers engage communities and train and supervise community volunteers to conduct an 18 month sequence of promotional and educational activities within their community. Social marketing messages, consumer technology education, and technical support are used to create demand for sanitation while streamlined PHAST-like participatory tools are used to address hygiene education and behaviour changes. Door-to-door household visits are the core communication channel, supported by limited community mobilization. Supply-side strategies expand local market access to a range of low cost improved latrine options and precede launch of promotion in new target areas. Community monitoring of progress, effective field staff, and close supervision of field activities are key elements of success. Between 2005 and 2007, the PHA program reached approximately 10% of the rural population in 5 Departments with a 10 percentage point increase in improved latrine coverage within the 18 month cycle.¹⁹ National results of hygiene changes are not yet available.

The Ouagadougou Strategic Sanitation Program, Burkina Faso

The National Water and Sanitation Office (ONEA) of Burkina Faso is the lead actor in an innovative concept of going to scale with sanitation in the capital city of Burkina Faso, Ouagadougou. The Strategic Sanitation Program includes components promoting household sanitation using social marketing methods and building a structured market for related goods and services.

ONEA selected NGOs for social marketing activities based on competitive bidding and trained these NGOs. The aim is to convince households to build and improve their own sanitation amenities. Main characteristics are

- Ø **A wide range of choice.** Households can choose among different technical options, e. g. rehabilitation of traditional latrines (average cost 34 EUR), ventilated improved pit latrines (average cost 270 EUR), double pit pour flush latrines (average cost 142 EUR), showers with soak pits (average cost 46 EUR) and soak pits (average cost 43 EUR).
- Ø **Households contract directly with local masons** who have been trained by the program. Due to this direct contractual relation, masons are clearly responsible for the quality of their work.
- Ø Households receive a **voucher to acquire cement**. The program thus subsidises a part of the equipment cost.

Between 1992 and 2008, 110 000 latrines and other sanitary facilities have been built. Access to improved sanitation facilities increased from 5% to 55%. However, half of the households opted for the rehabilitation of existing latrines instead of upgrading to VIP latrines or flush latrines. This limits the overall health impact.

2.7. Incentives and sanctions as strategies

Financial and other incentives to help achieve performance outcomes have emerged as an important strategy, with many variants under India's TSC program, and in Ethiopia for job

¹⁹ Jenkins & Kpinsoton (2008)

performance. Examples of output-based cash subsidies at community, individual household, and producer levels coupled with sanitation demand promotion activities can be found elsewhere (see Background Paper 2). At community level, competitions and awards can be used to achieve multiple simultaneous related outcomes across a range of hygiene behaviors (as in India). Competitive budgetary incentives and sanctions are being tried by national government to motivate district government to improve sanitation performance in Uganda under the decentralization process²⁰.

The final phases of Thailand's rural sanitation program used a combination of sanctions and incentives to help achieve universal latrine coverage²¹. Some districts in Uganda are using sanitary by-law enforcement coupled with Community-Led Total Sanitation to stimulate households to build a basic sanitary latrine²².

2.8. Costs of projects

Systematic approaches for collecting cost information and standard metrics for comparing costs, impacts and outcomes across projects and approaches are sorely lacking to be able to assess cost-effectiveness of investments in SDC and HBC. Rigorous evaluation of cost-effectiveness would greatly assist financing decision-making and greater attention to this issue is needed²².

Limited costing information from a small sample of projects (see Annex 6.1, Table 2) shows the software component cost per "adopter" of changed hygiene behaviour ranged from a low of EUR 1.27 to high of EUR 7 per beneficiary. Across the sample, indicators for hygiene behaviour vary considerably, as do the size of adopter households. Hygiene campaigns change hygiene behaviour only to a certain extent. Some projects focus on "cheap" changes, in particular hand washing, while others try to enhance demand for better sanitation facilities at household level.

A forthcoming World Bank study²⁴ shows sanitation demand-related software costs ranged from 7% to 28% of the costs of the household hardware solution across six large projects (equivalent to USD 6.8 (28% of solution) to USD 144 (20%) per household). Level of service and capital costs of the projects' hardware solutions varied greatly, from an average of USD 17.4 (very basic pit latrine in rural Bangladesh) to USD 568.4 (septic system in urban Senegal).

2.9. Success reaching the poorest segments

Information on success reaching the poorest and least educated segments is not always collected by projects, making this difficult to assess. Most information is qualitative or anecdotal, and limited to sanitation. In most cases across the board, reaching the poorest has been difficult for sanitation, unless demand creation efforts are specifically designed and tailored to the informational and behavioral needs of poor and vulnerable groups, or where hardware subsidies for latrine construction, can be effectively targeted for the poor. Sanitation demand creation programs involving subsidized hardware have tended to preferentially benefit better off segments of the population²³. Ways of targeting subsidies for the poor are addressed in Background Paper 2. Hardware subsidies limited to below-poverty-line households coupled with CLTS in an experimental Total Sanitation Campaign initiative in Odessa District achieved equal

²⁰ Outlaw et al. (2007)

²¹ Luong et al. (2002)

²² The World Bank recently undertook comparative analysis of sanitation financing in six projects of significant size and scope to assess lessons for how best to pay for sanitation improvements (Tremolet et al., forthcoming).

²³ Untargeted hardware subsidies in three traditional supply-driven projects in Ghana were captured by better off households (Rogers et al. 2007). See also Background Paper 2.

or greater coverage increases among poor households²⁴. Vietnam's sanitation marketing program was able to reach the poorest about equally as others²⁵. In Ethiopia, early adopters have tended to be better off households²⁶.

In very poor countries, regular hand washing with soap can constitute an important cost factor for households. A study on hygiene behaviour in Burkina Faso²⁷ estimated annual cost for hand washing with soap of approximately 1 USD (1999 figure) per person, half for water (0.3 litres per hand washing) and half for soap, equivalent to 0.4% of 1999 per capita GDP.

3. Emerging Issues for Discussion

3.1. *Scaling up opportunities and challenges*

Some considerations are put forth for scaling up the current approaches for hygiene behavior change and sanitation demand creation.

Participatory Hygiene And Sanitation Transformation: While PHAST provides a broad-based hygiene learning engagement method that is adaptable to local conditions, the 'one village at a time' approach presents challenges for implementation at scale and ability to maintain quality and outcomes due to its dependence on effective and skilled facilitation and follow-through. Some programs have successfully adapted a sub-set of the most effective PHAST elements into structured programs.

Community-Led Total Sanitation: CLTS concepts and the community shame/disgust/pride approach have proven to be a powerful trigger for self-financed household sanitation and latrine usage at community level. Sustainability of latrine usage and of installed facilities is not yet clear and may be limited where access to appropriate affordable products and services is poor. Success may also be contingent on favorable community conditions²⁸. It is possible community-level financial incentives, such as in India, can overcome this limitation. Like PHAST, CLTS requires effective and skilled facilitation as well as good verification systems. Questions remain on the relevance of CLTS for urban and large settlements. Handwashing with soap has been a neglected element.

Total Sanitation Campaign: The ability to effectively target the poorest for cash hardware subsidy may be unique to India. It is not clear how to transfer this to other settings. Over-emphasis on financial incentives and weak verification systems can distort and undermine the behavior change process. Risks include regression back to open defecation, in the absence of on-going monitoring and stimulus.

Social Marketing: A significant initial investment in formative research and creative communications development makes start-up costs high in a new country without follow-up commitments for scaled-up implementation. To work well, a clearly identified behavior change must be articulated and campaign messages may need to be renewed and refreshed at regular intervals, to maintain momentum after initial efforts. It can be highly effective at scale when linked with improved access to related products and services as shown for family planning and condoms in developing countries.

²⁴ Pattanayak et al. (2009)

²⁵ Frias & Mukherjee (2005)

²⁶ O'Loughlin et al. (2006)

²⁷ Curtis et al. (2001)

²⁸ Reference DFID study document on favorable conditions for CLTS.

Public Private Partnership for Hand Washing with Soap: Historical experience shows the value and benefit to partnering with private sector soap producers and marketers to promote handwashing with soap when such partners can be found. The approach faces the start-up requirements and on-going commitments of social marketing. This may be problematic under project-based funding mechanisms. More attention may be needed to monitor ability and find creative ways of reaching poorer segments.

Sanitation Marketing: In addition to social marketing efforts, investments to improve and extend product/service offer and market access in target areas may require substantial and on-going efforts. Partnerships among government levels, NGOs, private sector suppliers, and microfinance partners are an important feature of this approach and attention given to building these early-on. Coordination and timing of demand and supply strategies among multiple partners in the start-up requires may require a professional coordination team.

Combining complementary approaches, such as CLTS and Sanitation Marketing, to increase impact and effectiveness has emerged. Such integrated programs are underway in Cambodia, Tanzania and Indonesia. Broad-based social and political mobilization was an essential ingredient of success in Ethiopia and Bangladesh, and provides an important strategy for scaling-up and strengthening other approaches.

3.2. Linking to health and education sectors

Stopping open defecation and improving community practices requires addressing school-based sanitation and hygiene behaviors as well as those at household-level. Children have proven to be effective change agents e.g. in some TSC initiatives in India and CLTS in Bangladesh. Thus, engagement with schools is an important program linkage. Furthermore, appropriate school sanitation infrastructure can also prevent premature drop-out of girls from the education system.

Working across ministries on sanitation and hygiene programs can be a challenge. Hygiene education and behavior change are often seen as health ministry domains, while sanitation infrastructure is a domain of rural development, water or other infrastructure ministries, and school infrastructure and programs are within the domain of the education ministry. An evaluation of school sanitation pilot programs²⁹ showed that complex coordination mechanisms that involve many institutions (cf. Zambia) are not very effective. On the other hand, cooperation between the ministry of basic education and a regional water and sanitation NGO³⁰ in Burkina Faso and the cooperation between the ministries of health and education and the national Water and Sewage Company in Nicaragua were quite successful. In all programs, the use and cleanliness of toilets improved considerably, but a reliable water supply, good water quality, hand washing with soap and drainage of used water remained a challenge. Among the success factors³¹ there seem to be: the provision of sanitary and water facilities together with hygiene education, embedding hygiene education in curricula, the participation of school staff and pupils, demand driven subsidies and the adaptation of facilities to local conditions.

Improving school sanitation and water supply infrastructure and behavior change programs to facilitate school-based hygiene behavior change may require separate programs linked to education sector support activities. Without this complement to household and community SDC

²⁹ IRC/UNICEF, 2006

³⁰ Centre Régional pour l'Eau Potable et l'Assainissement à faible coût (CREPA)

³¹ IRC/UNICEF, 2006 ; Snel, 2003

and HBC programs, schools may remain a source of health risks and education will not fully reach its potential impact on hygiene behavior change.

3.3. Similarities, Differences, Lessons and Issues for Discussion

This review has identified a variety of effective approaches available for SDC and HBC, some of which have been implemented at large scale. We examine similarities and differences, and consider some lessons and issues from experiences applying these methods across settings.

- **Target group:** Methods differ somewhat in whether to target whole communities, sub-groups or individual households. Programs also differ in which individuals within households, such as mothers/child caretakers, heads, or children, are the focus of change. For sanitation demand creation, coordinated targeting of whole communities and their leadership (community mobilization) on the public aspects of sanitation and stopping open defecation, while simultaneously targeting individual household needs to build private latrines appears to be important for achieving high coverage.
- **Messages:** In sanitation demand creation, messages based on household non-health benefits and the use of community shame, disgust, and pride appear to be more effective and broadly relevant at motivating personal and community-wide change across cultures and settings than those about disease-risk reduction. Evidence on message content regarding other hygiene behaviors is limited. Disgust may be highly effective in triggering SCD and HBC across domains and diverse populations, as shown in recent handwashing behavior experiments in Australia³². Ghana's PPPHWS campaign found disgust and nurture more powerful than conventional disease prevention messages. Disgust may underlay effectiveness of personalized fecal exposure information (fecal contamination on own hands, in one's own water) compared to conventional hygiene messages in two recent hygiene behavior change experiments³³. Formative research and pilot testing, however, remain essential for developing culturally, gender-based and contextually relevant and effective messages, communications materials, and channels for large-scale SDC and HBC approaches.
- **Methods, channels, and sources of communication:** Evaluations show that word-of-mouth and face-to-face communications are generally the most effective methods for reaching the poor. Mass media and conventional IEC methods such as posters, TV, radio and pamphlets may be important for reinforcement of face-to-face communications and for broadly changing social norms. In Vietnam and India, door-to-door visits and community group meetings were the important sources of information and promotion. Using multiple coordinated channels is more effective than a single channel. Optimal campaign duration and number of contacts with target populations is unclear. Given the gradual and rather long process of changing societal norms and personal behaviors, campaigns will need to be renewed, improved and updated at regular intervals. Sufficient funding for and attention to monitoring and evaluation for campaign renewal should be considered in the development and design of programs.
- **Single vs. multiple behaviors:** The integrated multi-behavior change approaches of PHAST, Community Health Clubs, and health education contrast with single focus behavior change approaches of CLTS, social and sanitation marketing, and PPPHWS. Limited

³² Porzig-Drummond et al. (2009).

³³ See recent hygiene behavior change experiments in Dar Es Salam, Tanzania (web link) and western Kenya (web link).

evidence suggests targeting a single behavior change may be more efficient and easier to accomplish than targeting multiple behaviors at the same time for a given population group. However, this debate has not been resolved.

- **Linkages to water supply:** SDC and HBC programs have increasingly been implemented as stand alone projects with independent funding, in contrast to earlier times when they were integrated or directly linked with water supply projects. This has been generally a positive change, given the very different activities, methods, skill sets, time frames and challenges faced in implementing SDC and HBC relative to water supply projects. However, the recommended sequencing of water supply, sanitation demand creation and hygiene behavior change activities for communities to maximize sustained hygiene behavior change and health impacts remains unclear. Benin's rural sanitation and hygiene promotion program prioritizes villages that have improved water supplies. This appears to make good sense from household and community perspective where water supply is typically a higher priority than sanitation, and from a behavioral perspective where access to sufficient water supplies facilitate sanitation and hygiene behaviors and has been associated with increasing demand for sanitation³⁴. Setting sanitation improvements as a pre-condition for water supply has frequently led to perverse and ineffective behavioral responses.
- **Champions:** Cases of success at scale demonstrate over and over the importance of political will and leadership with an individual champion at state or local government level, driving and creating the framework for success. How are champions created and found?
- **Common elements for success:** Highly dedicated and trained outreach staff and an extensive network of trained community volunteers, with close monitoring and supervision, appear to be essential requirements for successful implementation of most SDC and HBC approaches. A well-structured implementation strategy and program of awareness-creation, face-to-face communications and mobilization activities based on well-designed and tested materials, processes and tools also appears necessary for effective SDC and HBC. Last, SDC approaches typically need to be accompanied by an appropriate consumer-preferred range of technology options, and facilitation, information, and support to households, especially poor and vulnerable groups must be available, to help them choose the technology and features that best meet their needs, preferences, and ability to pay.

4. Role for Development Banks

This review has identified a number of effective approaches for sanitation demand creation and hygiene behaviour change that exist and should be supported by increased funding. Several proposals for consideration are made:

- 1) Finance the development and implementation of extended large-scale national social marketing and mobilization campaigns to change social norms around open defecation, similar in scope to what was undertaken in Bangladesh during the 1990s but adapting community-led total sanitation messages and methods.
- 2) Develop programs with micro-credit finance institutions and partners to provide credit for household sanitation that include integrated sanitation demand creation and outreach components.
- 3) Develop and finance incentive and award programs for local government and communities to achieve open-defecation free and sanitized conditions as part of larger

³⁴ Curtis et al (1995) and Jenkins & Cairncross (forthcoming)

government sanitation promotion initiatives, and assure that sufficient funding for capacity building of independent verification mechanisms and technical and managerial services and capacity building are included for local government.

- 4) Fund the expansion and renewed of campaigns under the Public Private Partnership for Handwashing with Soap program, and explore opportunities to enhance these programs through investment in development and promotion of complementary handwashing devices to support behaviour change among low-income populations lacking in-house piped water.
- 5) Assure that complementary but independently managed hygiene behaviour change and sanitation demand creation programs are funded at sufficient levels within all water and sanitation hardware investment projects, and re-program allocations for household sanitation construction hardware subsidies to instead be used to fund and scale-up sanitation marketing programs.
- 6) Match school construction hardware programs with appropriate funding for improved school sanitation and water supply and behavior change programs.
- 7) Include adequate funding for and attention to monitoring, evaluation and cost-effectiveness analysis in the inception and preparation of programs so that financing for behaviour change can be made increasingly more effective.

Annexes

Annex 1: Tables

Table 1: Expected reduction in diarrhoeal disease morbidity from improvements of one or more components of water and sanitation (Esrey et al. 1991)

	All Studies		Rigorous Studies	
	N° Studies	Reduction	N° Studies	Reduction
Water and Sanitation	7	20%	2	30%
Sanitation	11	22%	5	36%
Water Quality and Quantity	22	16%	2	17%
Water Quality	7	17%	4	15%
Water Quantity	7	27%	5	20%
Hygiene	6	33%	6	33%

Table 2: Cost per adopter of different hygiene and sanitation campaigns

Project / duration	Target group	Activities	Main indicator for behaviour change % Adoption	Cost of campaign / „Adopter“ in EUR (in % per capita GDP)
KfW Rajasthan 10 years	1,05 Million	Sensitisation of decision makers; awareness raising combined with curative health offers for women in form of health camps; health competitions at schools; health and sexual education for girls	<u>Latrine construction</u> Project +18% other +28% (total +46%) baby faeces to latrine +10%	Project 3,34 EUR p.p. (0,7%) all adopters 1,27 EUR p.p.(0,3%)
UNICEF Bobo Dioulassou 3 years	37,319 Mothers	Neighbourhood hygiene commissions with home visits; discussion groups in health centres and neighbourhoods; street theatre, local radio; primary school curricula	<u>Hand washing after contact with baby faeces</u> +18,5%	48 EUR/mother 6,55 EUR/family member (2,3%); (5,03 EUR/ member without start phase(1,7%))
KfW Malawi 3-5 Jahre	308,000	Videos, street theatre, flipcharts and brochures on hand washing, coverage of water and cleanliness of latrines	<u>Safe latrines</u> Project +49% Hand washing Project +14% Cover water Project +19%	7 EUR p.p. (4,4%)
ONEA, Burkina Faso	1,1 Million	Training (NGOs, masons), Promotion (NGOs), Subsidies (slabs and vent bricks), works (masons)	<u>Latrine construction</u>	social intermediation costs relative to average cost of the facilities : 34%

Annex 2: Sanitation Demand Creation and Behavior Change Approaches

Community-Led Total Sanitation

Initiated and tested in Bangladesh from about 2000, this innovative approach adapts PHAST-like tools and group processes to focus on stopping open defecation at the community level, using the power of shame, fecal disgust, and social and peer-pressure to achieve open-defecation free villages without any hardware subsidy for latrine construction. The awareness-raising and motivational strategies are coupled with strong elements of informed choice, community empowerment, and encouragement of extreme low cost latrine technology innovation (Kar 2003; Kar et al. 2006). Its subsequent rapid spread in and outside Bangladesh, it has been modified in numerous ways and frequently blended with other approaches, including use of hardware subsidies, as it is adapted to new contexts, situations, and existing sanitation policies across a range of countries. The most notable cases of uptake and adaptation of the CLTS approach, thus far, in terms of scale and impacts are Ethiopia (Southern Nations) and India (Total Sanitation Campaign) (see section 2.6).

Sanitation Marketing

This approach recognizes that most household sanitation across the developing world has and continues to be provided by the private sector via the market place, with household investments driven mostly by the non-health benefits. It applies social and commercial marketing strategies and principles to create demand while simultaneously catalyzing, developing and expanding the market-based supply of sanitation products and services to focus on serving the sanitation needs of underserved poor population segments, using a coordinated at-scale approach to stimulate and link demand and supply. Thus, it builds on social marketing by adding strategies to improve availability and access to affordable and attractive sanitation products and services for the poor, by building the capacity and supporting the development of private sector supply chains (Cairncross 2004). Sanitation marketing has been successfully tested in several countries, most notably in Vietnam in 2003-2005 (Frias & Mukerjee 2005) and Benin (on-going since 1996) (Reif & Clebeza 1999; Jenkins & Kpinsoton 2008). Earlier variants and examples of projects and programs which invested in developing and expanding private sector market-based provision of appropriate sanitation products and services to low income rural and urban populations include the urban sanitation program in Lesotho (Cairncross 1992), ONEA's urban program in Ouagadougou, Burkina Faso (on-going) (WSP-Africa 2002), Bangladesh's rural sanitation provision program in the 1990's (Heierli & Frias 2007; Luong 1994), and Mozambique's dome slab program (1982 through 1990's) (Tremolet et al. forthcoming).

PPHWS

This is an at-scale national approach which recognizes the value of partnering with the soap industry to develop coordinated social behaviour change and commercial soap marketing aimed at increasing soap use for the purpose of handwashing at key times. Evolving out of the success of the Saniya Project's application of social marketing to increase hand washing with soap, the PPP approach was developed and tested for the first time in Ghana with Unilever Corporation as the main private sector partner and World Bank public financing, from 2002-2004 (check dates). An implementation handbook on the approach is available, based on the Ghana experience (World Bank 2005). Considerable impact and success was achieved in Ghana (Scott et al. 2008), laying the foundation for the PPP hand washing with soap approach to spread. It is currently underway in over 8 countries in Africa, Asia and Latin America. Private sector soap partners have included a local soap company in Uganda, and the multinational soap companies Unilever and Procter & Gamble, among others. With the successful in Ghana,

Unilever and its Indian subsidiary Hindustan Liver, have launched their own hand washing with soap behaviour change program and begun to market their bar soap, Lifebuoy, specifically as a hand wash soap to low-income populations in several target markets in India and elsewhere.

Community Health Clubs

The Community Health Club approach is a broad-based health education and behaviour change approach that addresses a range of relevant disease prevention and health topics, including sanitation and hygiene behaviours. Like PHAST, it draws on participatory and adult group learning theory and methods, but adds the additional structure and cohesion of club formation and membership which provides greater discipline, mutual support, social interaction, and motivation for achieving results. Like PHAST, it also requires skilled trained facilitators, but in addition, session facilitators must also have sufficient health knowledge depth to lead on a range of health topics, while course materials and methods must be developed locally and the intervention usually spans a much longer time commitment per community of 1-2 years, and ideally longer. The Community Health Club approach was developed, expanded and tested in Zimbabwe in the early 2000's and found to be successful in achieving increases in both sanitation and a wide range of hygiene behaviours among club members (Waterkyn & Cairncross 2005). It has since been taken up by several projects, albeit at relatively small scales, in several African countries.

Mass Social Mobilisation

Social mobilization is an action-oriented at-scale communications approach which mobilizes leaders from all sectors and all levels of society, starting at the highest levels, to focus attention and priority on solving a shared social problem using multiple channels and types of communication and social engagement. First implemented in Bangladesh in the 1990s at national scale (Heierli & Frias 2007), it mobilized national attention on the very low and poor levels of sanitation across the country and motivated action by all levels of society to improve it. Mass institutional and community mobilisation has been a major and essential component of Ethiopia's Southern Nation rural sanitation promotion program (WSP-Africa 2007).

Participatory Hygiene and Sanitation Transformation (PHAST)

PHAST is a flexible set of tools for use in a group-based structured process based on participatory rural appraisal and participatory learning theory and methods. PHAST was developed to help rural communities change any number of inadequate sanitation conditions and hygiene behaviours within their community. Rigorous testing of the PHAST approach was undertaken in the late 1990's (UNDP/World Bank and WHO 1997), leading to up-take and widespread application in many countries by numerous actors.

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