

Chapter 10 Selecting and Marketing Technologies

10.1 Introduction

In many parts of the world conventional 'sanitation' programmes have tended to focus on the public provision of latrines, either through direct construction, or by providing subsidies based either on a needs-assessment, or on the completion of a latrine of "acceptable" standard. In a few regions, where progress in the water supply and sanitation sector has moved faster, sanitation has been viewed more as a "utility" issue often with a focus on regulating to prevent 'unauthorised' construction or, in urban situations, to preserve the exclusive right of the utility to provide.

Once sanitation is seen within the context of hygiene improvement however, it becomes clear that latrines alone are not very effective, and their provision needs to be coupled with, and often subordinate to, an increase in awareness about hygienic practices in general and a change in the way hygiene is managed locally. Furthermore, even where latrines are clearly urgently needed, direct public provision has been shown to be problematic in many cases. The sheer scale of the need swamps most public providersⁱ and this, coupled with suspicions of corruption and inefficiency in many programmes, suggests that new approaches need to be tried, in tandem with an improvement in public provision where this appropriate.

Where it exists, the small scale private sector provides some hope that provision can be scaled up, and made more effective through local innovation and the ability of local providers to be more responsive to household demand. Where this small scale business does not exist, programmers may want to devote some of their effort and resources towards stimulating and supporting its growth, to relieve the pressure on public provision. The potential for this sanitation "business" is easier to understand in rural areas or less congested urban slums, where on-plot provision makes a straight forward business relationship between the household and the supplier possible. In congested urban areas where off-plot provision is needed, this relationship is less clear, and there will almost certainly be a responsibility retained by the public provider or utility. Nonetheless new institutional and technical approaches mean that there may still be a role for an intermediary or small scale private provider at the local level to facilitate the development and management of and appropriate local network system. For more information on the basic technology issues of sanitation see **Section 10.2** below.

The key idea here is to move away from the direct provision of a pre-determined technology, to a situation where households and communities can choose from a range of appropriate options, supported by a range of suppliers who are highly motivated and skilled to provide them.

10.2 Making Sure that Technology Works

Broadly, sanitation technologies fall into four main types as shown in **Table 15**. The choice of technology will be strongly influenced by a range of factors, of which the two most important are:

- How much used water (wastewater) must be removed from the household?
- Will the disposal of the excreta be on-site or off-site?

Sanitation Technology Choices

(a) Limited water use and on-site disposal (latrines)

Many poor people have limited access to water, and do not enjoy the relative luxury of a household connection. Water consumption is thus limited to around 20 lpcd or less, and little wastewater will be generated. On-site toilet facilities offer substantial advantages over off-site facilities in terms of convenience, privacy, and management (family-owned latrines are in most cases better maintained than public ones). Basic pit latrines, pour-flush la-

trines, or variants of these basic types (e.g. Ecological Sanitation, VIPs, etc.) are usually the most appropriate types of technology to consider for on-site disposal of excreta with little water.

Latrines protect the environment from faecal contamination by isolating excreta in a pit. When the pit is full after five to ten years, it must be emptied before it can be used again. Where space permits, a new pit can be dug, and the contents of the full pit may be left to compost. After a year or more of composting, the pathogens in the waste will have been neutralized, and the contents may be safely handled. These contents may be used as agricultural compost. Ventilated Improved Pit (VIP) latrines improve on the basic design and limit nuisance from flies and odours.

Pour-flush latrines are those in which the excreta are flushed from the defecation area by water, and are particularly appropriate in cultures where water is used for anal cleansing. The water may be used to create a water seal between the wastes in the pit and the outside, thus eliminating problems with odours, flies and mosquitoes.

Pit latrines are difficult to build in areas of high groundwater table, or in rocky areas. High groundwater table not only makes construction difficult, but also raises the risk of groundwater contamination from the contents of the latrine. These risks can, in most cases, be minimized if the bottom of the latrine is at least 2 m above the groundwater table, and the latrine is at least 15 m away from any well used for drinking water. Finally, sludge management (i.e. the transport and disposal of the latrine contents after emptying) should be carefully considered where space is limited, especially in urban or peri-urban areas. A variety of ecological ("EcoSan") toilets exist which are designed to improve the composting of the latrine's sludge, and thus turn the problem of sludge management into an opportunity to generate higher value compost.

(b) Limited water use and off-site disposal (bucket latrines, public toilets)

Where access to water is limited, and excreta disposal on-site is not feasible (due to either cost or space constraints), bucket latrine systems or public toilets are often used.

In the bucket system (or "conservancy system" as it is known in South Asia) excreta are deposited in a bucket

or lined basket that is emptied several times a week by a "sweeper" who disposes of the waste elsewhere. In earlier times, elaborate plans were made for the collection of wastes to "bucket transfer stations" where the buckets were emptied into larger carts and cleaned prior to their reuse. The larger carts, in turn, were meant to transfer the waste to a sanitary disposal site. In current practice, however, the disposal is almost always to a nearby drain (eventually leading to drain blockage) or to a pile of solid waste, exposing rag pickers and children to faecal wastes. The system is generally considered an extremely unsanitary arrangement, and is officially illegal in India and a number of other countries. Where field surveys establish the continued existence of this system, however, sanitation planners need to address two questions before simply banning it:

1. What more sanitary option can realistically be offered?
2. During the transition period to the more sanitary option, how can the bucket system be rendered more hygienic?

Public or shared toilets are a second form of off-site disposal, and indeed, have been promoted in India by NGOs such as Sulabh International Inc, as an answer to the defects of the bucket system. Public toilets may involve any number of technological options, from common pits to sewer system connections. All public toilets, however, involve a number of difficult institutional questions, which have previously weighed against its widespread adoption by sanitation professionals.

Management of public toilets is a daunting challenge, although recent experience in South Asia shows that it can be overcome in some cases. While the responsibility for (and interest in!) cleaning private toilets clearly rests with the owner, responsibilities are often less clear-cut for public or shared toilets. It is often difficult to establish an effective maintenance regime for a toilet shared among five or ten families. Government or community run public toilets are often in an appalling state (in Europe and North America as much as anywhere else) because of the lack of interest and incentive for adequate maintenance.

Sulabh International has developed a public toilet franchising system whereby attendants and managers are reimbursed from a small fee for use levied on adult male customers; women and children can use the toilet for

free. The fee is sufficient to ensure a reasonable income for the manager, who has an interest in maintaining a clean well-run establishment; Sulabh's monitoring of performance means that s/he risks losing the job if performance slips. While the franchise arrangement works in a number of settings (e.g. railway or bus stations) it is unclear that the financial model can work to serve the urban poor, when competing with "free" open defecation.

Household toilets, where feasible, are preferable to public toilets for 3 main reasons:

- **convenience to the household**, which encourages use
- **clear accountability for cleanliness**, which also encourages use, as the cleanliness is within the control of the household
- **safe disposal of children's faeces** is more likely with a household toilet. Although a number of public toilet systems try to encourage use by children, it is less likely than a household toilet to work, especially for the disposal of young children's faeces.

(c) Substantial water use and on-site disposal (septic tanks, soakaways)

As access to water increases, water use will also increase, along with the requirement for its safe disposal. Sullage and grey water are the technical terms for household wastewater that is not used in toilets; sullage is made up of bathing water, water used for washing and cooking, etc. While it is less contaminated than toilet water, it is incorrect to think of it as "uncontaminated"; water used for cleaning the clothing and nappies of infants and very young children, is often heavily contaminated.

Pouring large quantities of sullage into a pit latrine pit is likely to lead to pit overflow, bad smells, and insect breeding. This is because latrine contents will quickly "plug" the soil, and limit the capacity of the soil to absorb large volumes of sullage. The construction of a separate soakaway for sullage is far more likely to work. A soakaway is a large pit or trench filled with boulders and/or gravel through which sullage may infiltrate into a larger surface area of soil. By keeping the sullage separate from the faecal wastes, the risk of soil plugging is reduced, and the soakaway can serve for a much longer time.

Septic tank systems (with soakaways or drainfields) are an alternative on-site solution for combined wastewater

disposal. A septic tank is a concrete or masonry box in which some settling and treatment of faecal solids takes place; the wastewater leaving the septic tank is relatively clear and free of solids (although highly contaminated biologically). Sullage enters the septic tank after the settling of the solids, and the combined flow is discharged to the soil through a soakaway or drainfield. As the septic tank removes the faecal solids from the flow, the infiltration area of the soakaway is far less likely to become plugged.

Septic tanks are most commonly used by those with cistern-flush toilets and house connections for water. While traditionally each household has its own septic tank, a number of households with individual toilets and plumbing arrangements can connect to a single septic tank.

The capacity of both soakaways and septic tank systems to remove wastewater safely from the plot depends greatly upon the *infiltration capacity* of the soil. Soakaways and septic tanks work best in sandy soils, and cannot work well in tight clays. As with pit latrines, there is a risk of groundwater contamination, and this is particularly great when sullage and excreta are combined.

Sludge builds up in septic tanks as the faecal solids settle, and must be removed periodically. As with latrine sludge, the collection and disposal of septic tank sludge requires attention. Without good sludge management and enforcement, the public will be exposed to the effects of clandestine dumping of sludge into drains and piles of solid waste.

(d) Substantial water use and off-site disposal (sewers)

Sewers are common where water is readily available but suitable land and soil for septic tank systems are not. Sewers are pipes that carry wastewater (toilet wastes and sullage) away from the household to a centralized treatment and disposal point. Sewers are very convenient for the user, requiring a minimum of maintenance. They are often, however, a relatively expensive solution, especially if the wastewater is treated (as it should be) before its ultimate disposal to surface water. Sewers require a reliable water supply, and sufficient wastewater to ensure reasonable flushing of the solids through the system. Large systems, or systems in flat areas, often require pump or lift stations, to raise the sewage and thus reduce the depth and excavation costs of downstream

pipe. Such pump stations not only require careful operation and maintenance, but also a steady source of cash to cover significant power costs. Sewers should only be considered in cities and small towns and are not viable in rural villages.

There have been a variety of innovations in sewerage over the last two decades, particularly in Latin America, which have reduced its cost and operational complexity through a range of “condominial” technologies and institutional systems; Mara (see Ref. Box 15) is a good guide to some of the technical issues and debates involved in low-cost sewerage.

Table 15: Range of Technology Choices

	Water supply volume	Limited (< 20 lpcd)	Ample (>20 lpcd)
Disposal point			
On-site		Pit latrine and variants, Pour flush latrines	Septic Tanks Pit latrines plus soakaways
Off-site		Conservancy/bucket system Public toilets	Sewers (including non-conventional variants) ⁱⁱ

10.3 Selecting Technologies – the sanitation ladder

The programmers’ responsibility is to balance what is currently possible and desirable at the household or private level (ie what can be achieved in the short term) with long-term public policy objectives such as realization of full public health benefits, protection of the environment and maintenance of health and safety.

There is no such thing as an “ideal technology”. In many countries standard designs and approaches, usually justified on the basis of long-run public policy objectives, have become entrenched in widescale national latrine construction programmes. They may appear to be the only viable solution and technicians may aspire to construct only facilities of the highest specification possible. However, programmes promoting these “ideal” facilities rarely achieve high rates of coverage – because demand for the high-cost technologies on offer is too low and there are insufficient funds to provide them universally on the public budget. One look at the latrines that people build for themselves however, illustrates that a wider range of solutions is possible. In many cases these home-built latrines may fail to improve the situation at all – but they may point to a viable first step on what is known as ‘the sanitation ladder’ ie the first intervention which will increase awareness of the benefits of sanitation, begin to lessen risks and start a household on the process that will lead to the installation and use of a sanitary latrine. In the long-run this is likely to result in much greater coverage

and health improvement than would be the case if only “the best” were to be built or allowed to be built.

The balancing act for programmers is to judge what is acceptable and likely to be used by households, promote it appropriately and assess how best to move households as rapidly as possible up the sanitation ladder so that both private and public benefits can be realized. To do this government may retain a prominent role, beyond simply enforcing standards, in: promoting innovation; balancing local needs with national public policy priorities (for example intervening in emergency situations, enforcing standards in public places and schools etc); and steering household choice by supporting sanitation marketing efforts (see below).

Climbing the sanitation ladder in this way may not seem very glamorous but may in fact be the most effective means of making rapid and visible improvements in the situation. Furthermore the concept of the sanitation ladder is particularly important for the poorest households, where local conditions, lack of money and low levels of awareness may preclude the construction and effective use of latrines. Programmers need to support any incremental improvements, and may choose to steer public resources to the provision of appropriate school sanitation and public facilities so that some access is achieved while awareness is built.

10.4 Other Factors – community management

The interaction between technical constraints and organizational issues is also important. For example if people have no space but have proved that they can take concerted action in some other development sphere then the possibility of constructing and managing shared facilities should be considered (shared latrines, communal

bathing facilities, condominal sewers etc). Where people are willing to give up space in their houses for sanitation but are unwilling or unable to collaborate with their neighbours a different (on-site) solution may be possible.

10.5 Building Capacity

It is quite obvious that capacity needs to be built amongst households, communities and even small scale independent providers so that they can participate more effectively in the provision of sanitation facilities that do achieve health improvements. What may be less obvious, though, is that there may be a need to build capacity amongst technical staff also, many of whom may be well trained in 'conventional' sanitation engineering. Unfortunately such conventional training tends to focus on expensive solutions, often with a heavy emphasis on piped sewerage (which is inappropriate in rural areas, and may not work in urban areas with low levels of water supply,

unreliable power and low operating revenues). It may also place an emphasis on waste water treatment which (a) is inappropriate where on-site solutions are to be used; and (b) may be irrelevant where the public health imperative is to get as many households as possible to use a latrine as the first step. These staff may lack expertise in the complex area of 'making-do' and finding the best compromise in a less-than-perfect world. They may lack the skills to identify the best innovations and, worse, they may, in good faith, create barriers to the type of incremental improvements which are needed.

Reference Box 15: Sanitation technologies

For: Details of sanitation technologies and guidelines on choice of technology

See: Pickford, John (1995). *Low-cost sanitation*. Intermediate Technology Publications: London.

Mara, Duncan (1996). *Low-cost urban sanitation*. John Wiley & Sons: Chichester.

Cairncross, Sandy and Richard Feachem (1993). *Environmental health engineering in the tropics: an introductory text*. (2nd edition) John Wiley & Sons: Chichester.

Get these references from: Good technical libraries or the Water Engineering Development Centre (WEDC) at www.lboro.ac.uk

10.6 Sanitation Marketing

Why do people pay for sanitation?

As the emphasis shifts from “policing” and “providing” technologies to “marketing sanitation” and ‘promoting innovation’ technical roles may shift. Marketing of sanitation *as if it were a business* is a relatively new idea. Few countries have forged effective links between private providers and public agencies. Nonetheless this may be infinitely more important, particularly in countries with vibrant small-scale markets for goods and services, than the ability of public-sector engineers to design and build urban sanitation systems.

Because the public interest in sanitation is linked to its role as a primary barrier of disease prevention health is often thought to be the principle driver of demand. However a World Bank surveyⁱⁱⁱ in the rural Philippines established the following reasons for satisfaction with new latrines (in order of priority):

1. Lack of smell and flies;
2. Cleaner surroundings;
3. Privacy;
4. Less embarrassment when friends visit; and
5. Less gastrointestinal disease.

Some may regret that health education has been insufficient to raise the concern about gastrointestinal disease to a higher priority. Others, however, will quickly realize that all of the other reasons are excellent ways to market sanitation, and will accordingly review their marketing and product development strategy to take such practical concerns into account.

What influences household demand?

Figure 5 illustrates in a simplified way, the relationship between household demand and service delivery. It emphasizes that, where household demand is a driver for investment decisions, the role of the public sector (both on the supply side and in creating an appropriate enabling environment) remains crucial and may be more challenging than in traditional “public service delivery” type approaches.

In order to stimulate or create demand for a service, it is important in any situation to understand what is driving demand (or lack of it). Figure 5 suggests four main factors which will influence the depth and breadth of household demand for any particular good or service.

These are:

- **Awareness:** knowing that the goods/services exist and that they have benefits. For example, knowing that latrines exist and can be used to store excreta and knowing that a latrine can improve the health of children and have a positive impact on household income;
- **Priority:** deciding that the service is sufficiently important to merit needed investment. For example, deciding to build a latrine rather than construct an additional room in the house or invest in a bicycle. Priority may be influenced by access to other priority services or a range of other factors such as status or social conventions. Priority may also vary between members of the households – and it is important to target demand creation and assessment activities appropriately (for example building a latrine requires a decision by the member of the household responsible for major capital investments in the home and that person should be a key target of a latrine marketing campaign);
- **Access:** having access to a service provider who will market and provide the specific service. For example having a local mason who knows what types of latrines can be built, help decide what is the most appropriate and build it; and
- **Influence:** being able to take effective individual action, or being in a position to participate in effective collective action. For example, having space to build an on-plot latrine, or being in a location where it is possible to participate in a condominal sewerage scheme.

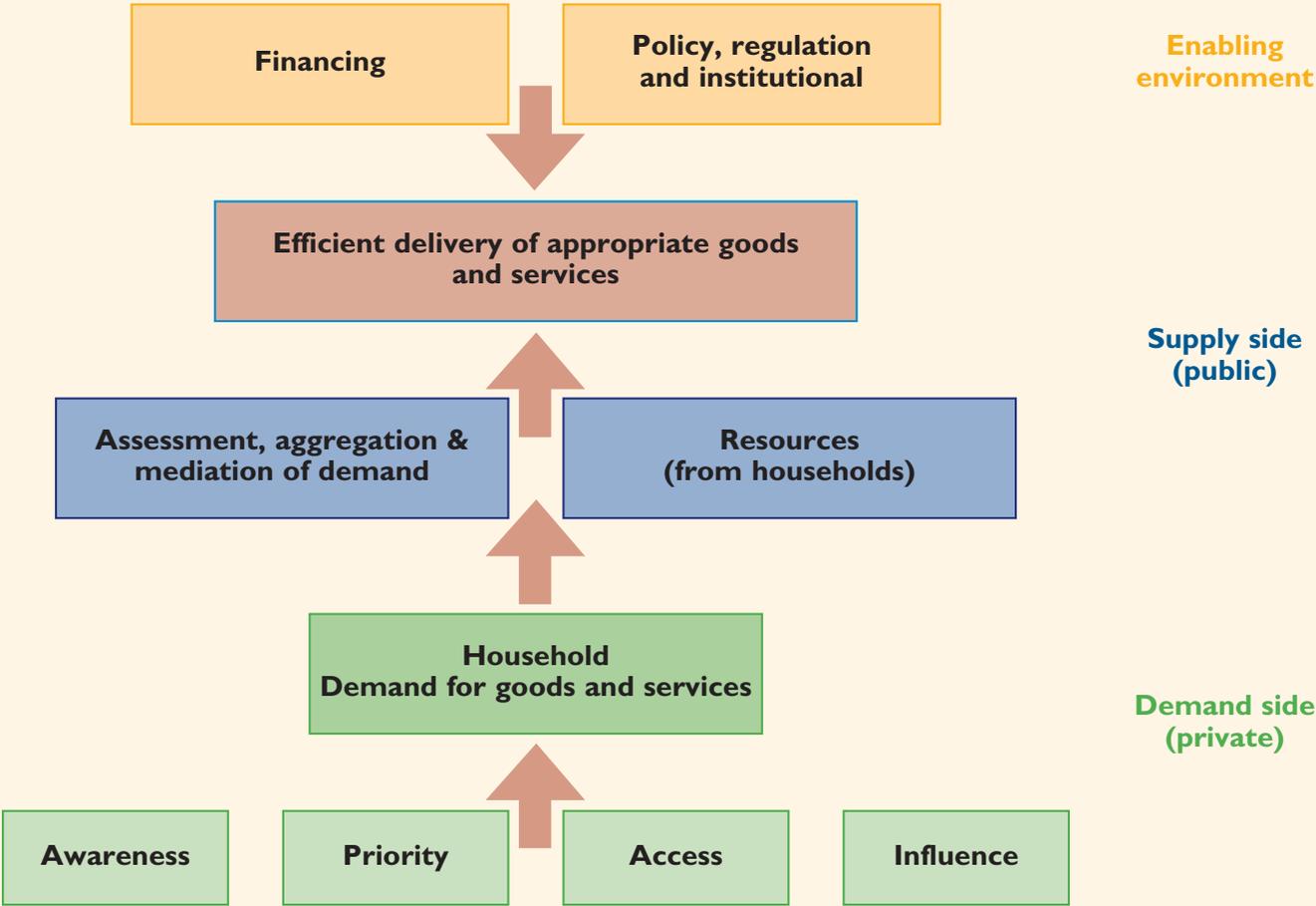
Any sanitation marketing approach probably needs to address these four areas. While there is little empirical knowledge to date of how this can be done most effectively some ideas and suggestions are laid out in **Table 16** which shows an indicative approach to breaking down the four barriers listed above.

Sanitation marketing has to become more sophisticated. It has to move from the current approach which is heavily skewed towards public sector promotion of fixed ideas, to a more innovative approach which explores the

potential of the market to provide some of the solutions. Marketing expertise can be linked to technical expertise to create the right mix of messages and promotional approaches which can start to make purchasing and using a toilet a high-priority choice for households. The challenge for programmers at the moment is to come up with such new approaches almost from scratch since

there is so little experience to build on. Ultimately the challenge is to turn toilets into attractive consumer items for those with some money to spare, while maintaining a focus on the supply-side of the market to ensure that cheap and appropriate versions are accessible by the poorest households.

Figure 5: Household demand in the context of service delivery



Importantly marketing latrines (along with all other changes in household hygienic practices) is a long-term undertaking and cannot be achieved in a short time frame. Programmers need to establish marketing systems that will have adequate resources to work with

households in the long term to improve their awareness of sanitation, raise its priority, increase household access to providers of goods and services, and equip households to influence those providers as required.

Table 16: Illustrative sanitation marketing approaches

Demand Factor Settlement/ Technology	Awareness	Priority	Access	Influence
On-plot/ rural	Mass media campaigns (based on a hygiene improvement framework) linking hygiene behaviour change and household investments in sanitation to improved lifestyle, higher earnings and status.	Household level participatory evaluations and planning to emphasise the need and potential of HH sanitation. Link to primary health care and micro-finance interventions.	Public schemes to support mason / plumber training, including business-support to small scale independent service providers. Public marketing of small scale private services.	Mass media campaign to emphasise the relative ease of household / shared sanitation in rural and some urban areas.
Networked/ urban		Household / community level participatory evaluations and planning to emphasise the need and potential of community sanitation.	Public schemes to licence and support small scale independent providers (ie pit emptying services). Public funds to train support agencies providing planning, micro finance and management support for low cost networks.	

10.7 Key issues and barriers

This chapter has emphasized that there needs to be a major shift away from the idea of public provision of latrines towards the idea of building, promoting, and supporting a sanitation business. Such a business will have the following key elements:

- Informed demand from households;
- Responsive supply from providers of goods and services; and
- Appropriate support from the public sector on both the demand- and supply- side.

In some countries this “business” already exists, and the real need is to ensure that it is legalized, appropriately supported so that it scales up, and then (and possibly only then) regulated to secure long term public policy objectives. In other countries the ‘business’ does not yet exist. Even where this “business” is likely to remain well within the public sector, much more emphasis is needed on promoting demand, supporting innovation and enabling

local choice to drive incremental improvements in sanitation.

In most countries there will be a number of barriers to this including;

- Inappropriate skills (in public and private sector agencies);
- Excess of technical staff in public agencies;
- Lack of capacity in the small scale private sector (for both delivery and marketing);
- Lack of knowledge and experience of marketing sanitation;
- Technical norms and standards which preclude innovation and drive up costs; and
- Other regulations which hamper innovation including outdated building codes, planning regulations and environmental controls.

All of these barriers need to be addressed at the programmatic level.

10.8 Applying the Principles

The principles of good programming apply equally to the selection of technologies as can be seen on **Table 17**.

Table 17: Applying the Principles to the selection and marketing of sanitation technologies

Maximising public and private benefits	Achieving Equity	Building on what exists and is in demand	Making use of practical partnerships	Building capacity as part of the process
Assess and promote sanitation technologies which are acceptable and likely to be used by households in the short term while developing longer term strategies to move households up the sanitation ladder.	Ensure that sanitation technologies are available which the poorest can access and use effectively. Specifically make sure technical norms and standards do not preclude solutions appropriate for poor households	Understand how people currently manage, what they aspire to, and invest in finding locally-appropriate solutions	Expand the range of participants – so that as much effort as possible goes into developing innovative new technologies and marketing approaches	Invest in building capacity of technical staff. Emphasise the importance and credibility of innovation and development of appropriate local solutions

10.9 Programming Instruments

Recognising that approaches to technologies have to change, may be difficult but could be one of the most significant programming decisions to be taken. Once it becomes clear that a different range of technologies could be employed to tackle the sanitation challenge, those working at field level may find a huge number of options opening up to make incremental improvements. But before this can happen people need to feel that they will be supported, that innovation will be rewarded rather than penalized, and that they are free to work with a range of non-traditional partners to develop new approaches. Programmers can help to signal this shift by:

- Instituting consultative processes to review and update technical norms and standards;
- Earmarking funds for sanitation marketing;
- Making funds available for training technicians in new and non-traditional technological approaches;
- Finding ways of working with small scale independent providers, and possibly establishing funds which can support them as they build up and improve their businesses;
- Making funds available for research and field-based trials of new technologies;
- Licensing providers and products;
- Training regulators (where they exist) to help them oversee appropriate sanitation interventions; and
- Finding ways to publicise and promote new and innovative technologies and approaches.

10.10 Practical Examples from the Field: What Sort of Sanitation do we Want?

The adoption of the Blair VIP latrine as a standard technological choice in Zimbabwe in the 1980s had a profound impact on the ability of the government's sanitation programme to go to scale. While the approach does allow for local innovation, in the choice of materials for the superstructure for example, the simplicity of the standard design, and the fact that it was developed *in Zimbabwe* from an analysis of the *existing approaches and sanitation conditions*, have both been significant factors in its success. Once the design had been proven, an explicit effort was made to roll out the program by building the capacity of extension workers from the health department, as well as through technical training of engineers and promotion of the technology at the national and local level. The impact of the Zimbabwean sanitation programme is clear; at the peak of the programme in 1987 nearly 50,000 latrines were built.

Despite the success of the Zimbabwean approach, standardizing on a single technology may be problematic. In many countries, a range of technologies may be needed to reach all those households who are excluded. When the NGO VERC started to work intensively in Bangladeshi villages to identify sanitation and hygiene improvements, people themselves developed more than 20 variations of low-cost latrines, which were both affordable and appropriate to their situation. By contrast the adoption of the TPPF as a standard in India led to high costs and constrained the roll out of the national program, despite the fact that the TPPF latrine is technically quite satisfactory as a rural technology. The TPPF was adopted after detailed research and benefited from the support of UNICEF and other external support agencies active in water supply and sanitation. But in this case technical training of engineers, which focused on the TPPF left little room for local innovation.

The perils of defining “acceptable” sanitation technologies may be avoided if policies and programmes focus on *outcomes* rather than *inputs*. The Government of South Africa defines “access to sanitation” in terms of the adoption of hygienic behaviours including safe disposal of excreta. This leaves projects and localities with freedom to adopt approaches which are locally appropriate, and for the impact to be evaluated using simple indicators.

In many Latin American countries, levels of services for sanitation are relatively high and many urban households expect to connect to a networked sewerage system. In many congested urban slums, this may be the only option as there is no room for on-site disposal. But sewerage is expensive. In Brazil an alternative approach to conventional sewerage, known as condominial sewerage, was developed over twenty years ago, and is now adopted as standard in many cities and towns. Condominial approaches are cheaper to build and operate than conventional systems, but have not expanded into neighbouring Latin American countries as fast as could have been expected. In Bolivia, the intervention of an external support agency (Swedish International Development Cooperation Agency - SIDA) and support from the Water and Sanitation Program (WSP) enabled the government and the private operator in La-Paz El-Alto to experiment with the condominial approach. External support agencies in such a case can provide access to skills (technical or social development skills) and provide funds for activities which perhaps cannot initially be funded from the governments' own programme because the rules and approaches being piloted fall outside the existing government rules and standards.

In the arena of sanitation marketing, there is much less experience than in the area of direct technology development. Research from Africa shows that many small-scale-independent providers are relatively good at tailoring their services to the needs of “customers”, but few countries have looked at ways to use the skills of the private sector, and marketing experts in particular, as part of a sanitation marketing effort. More work is needed to explore this potentially important area of hygiene improvement.

Case Study Box 8: What Sort of Sanitation do we Want?

Information about the adoption of Blair VIP latrines in Zimbabwe is taken from Robinson, A. (2002) *VIP Latrines in Zimbabwe: From Local Innovation to Global Sanitation Solution* Field Note 4 in the Blue-Gold Series, Water and Sanitation Program – Africa Region, Nairobi

The analysis of the impacts of India's use of the TPPF latrine is based on Kolsky, P., E Bauman, R Bhatia, J. Chilton, C. van Wijk (2000) *Learning from Experience: Evaluation of UNICEF's Water and Environmental Sanitation Programme in India 1966-1998* Swedish International Development Cooperation Agency, Stockholm

Definitions of Access are discussed in Evans, B., J. Davis and Cross, P. (2003) *Water Supply and Sanitation in Africa: Defining Access* Paper presented at the SADC conference, Reaching the Millennium Development Goals, August 2003

South Africa's systematic reforms are described in Muller, M. (2002) *The National Water and Sanitation Programme in South Africa: Turning the 'Right to Water' into Reality* Field Note 7 in the Blue-Gold Series, Water and Sanitation Program – Africa Region, Nairobi and Elledge, M.F., Rosensweig, F. and Warner, D.B. with J. Austin and E.A. Perez (2002) *Guidelines for the Assessment of National Sanitation Policies* Environmental Health Project, Arlington VA p.4

The El Alto experience is well documented on a dedicated website at www.wsp.org For an introduction to the programme, and information on the costs and benefits of the approach see Foster, V. (n.d.) *Condominial Water and Sewerage Systems – Costs of Implementation of the Model Water and Sanitation Program*, Vice Ministry of Basic Services (Government of Bolivia), Swedish international Development Cooperation Agency.

A discussion of the role of small-scale-independent providers is in Collignon, B. and M. Vezina (2000) *Independent Water and Sanitation Providers in African Cities: Full Report of a Ten-Country Study* WSP

Notes for Chapter 10

- i In urban situations, the cost of providing what is sometimes the only 'allowable' technology – conventional sewerage – also swamps the provider (usually the utility) who may respond by doing nothing.
- ii This option will have high operating costs if pumping is required. Non-conventional approaches to sewerage (variations on the "small bore" or "shallow" sewer) may reduce operating costs.
- iii cited in Cairncross, A.M. *Sanitation and Water Supply: Practical Lessons from the Decade*. World Bank Water and Sanitation Discussion Paper Number 9. World Bank: Washington, D.C.