

Reducing Financial Barriers to Accessing WASH services

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Abstract

This paper examines the reasons why different approaches might be adopted for reducing financial barriers to accessing certain health, water supply and sanitation goods and services. The health sector has been moving towards a policy of abandoning user fees and promoting free distribution of primary health care goods and services. However, in the water and sanitation sector it is common for households to make some financial payments. For organisations like UNICEF that are interested in suitable pro-poor policies in both the health and the water and sanitation sectors, it is important to understand these different approaches and the appropriate measures which governments and others can take to ensure access for the poor.

The economic concepts behind the categorisation of private and public goods provide a basis for examining the differences in the nature of various health, water supply and sanitation goods and services. Primary health goods are normally required only occasionally, and they usually have low demand but significant positive externalities. They are suitable for consideration as merit goods and to be provided free to consumers. The nature of water supplies is quite different. Water is a daily human need. A water system has substantial capital and operating costs. Moreover water requires some form of rationing to avoid over-use and waste. Providing water for free is seen to be non-viable and other approaches are required to ensure poor people have adequate access. Sanitation has a crucial behavioural change aspect that requires financing to ensure that sanitation products are then to be taken up and used.

Appropriate measures for addressing financial barriers to accessing health, water supply and sanitation goods and services will vary from product to product, based on a careful examination of the nature of the product. These might include social protection measures which go beyond the scope of the water sector itself.

Keywords

Water supply, sanitation, demand, subsidies, user fees, public goods, merit goods

INTRODUCTION

This paper examines the reasons why different approaches might be adopted to reducing financial barriers to accessing certain health, water supply and sanitation goods and services.

In recent years the health sector has been re-examining the issue of user charges for health services and whether they constitute a barrier to access particularly for the poor. As a result, several countries have adopted policies that eliminate user fees at the primary health level and/or for children under five years of age and for pregnant mothers. Large scale free distribution of mosquito nets has been seen as a key component in the fight against malaria. However in the water and sanitation sector it is a commonly held view that households should contribute financially for both networked and non-networked services, despite the fact that water supply and sanitation have clear health benefits. For an organisation like UNICEF that is interested in promoting pro-poor policies in both the health and the water and sanitation sectors, it is important to understand the reasons why these different approaches have been taken and what might be the most appropriate measures for governments and others to take to ensure access for the poor.

This paper reviews some basic concepts regarding economic goods and services, and examines the nature of some health, water supply and sanitation goods and services in light of these concepts. In the health field, the main focus is on primary health goods and services such as vaccines and insecticide-treated bed nets. At the end of the paper some suggestions are made regarding suitable mechanisms that can be put in place to ensure that poor people are not barred from accessing essential goods and services.

This paper is the result of an on-going collaboration between the University of North Carolina, USAID and UNICEF. It is expected that further work in due course will result in refinement of the analysis and conclusions presented in this paper.

Economic goods and services – concepts relevant to health, water supply and sanitation

This section reviews concepts relevant to the categorisation of private and public goods and services, to provide a basis for reviewing the various health, water supply and sanitation goods and services under consideration.

Private and public goods

Private goods are normally considered to have two key characteristics – 1) that the consumption of the good by one person diminishes its availability to others (called rivalry or subtractability), and 2) that a person can be excluded from consuming the good, usually by charging a fee (called excludability). Private goods are exchanged through market transactions. Public goods are often thought of as those goods for which the market mechanism fails and

that government intervention is required. For public goods the two characteristics of private goods are lacking, i.e. there is no rivalry in consumption and the good is non-excludable. There are other types of goods that tend to have one of the characteristics but not the other. Goods that are excludable but not subtractable are known as club or toll goods, an example is cable TV. Goods that are subtractable but non excludable are known as common-pool goods and include items such as fish stocks. The four types are illustrated below:

	Excludable	Non-excludable
High subtractability	Private goods (food, clothes, cars, etc.)	Common-Pool goods (fish stocks, timber, coal, etc.)
Low subtractability	Club or Toll goods (cable TV, cinema, gyms, etc.)	Pure Public goods (improved air quality, national defence, etc.)

Private goods are best produced and distributed through the normal mechanisms of the market. However the market fails for the provision and distribution of public goods, and government intervention is required. For example, the government may regulate monopoly providers, subsidize producers, or set prices. With common-pool goods the consumer may face few barriers to access, and there is the risk of overuse and depletion of the stock. Regulation by government or others is required to prevent this.

Public goods, however, are not exclusively the domain of the state. Private sector involvement in the provision of public goods is now common. It can be the means of efficient provision of a public good or service, but it is also the subject of controversy. This has particularly been seen in the water sector in recent years.

It has been suggested that the conventional approach to defining public and private goods does not reflect the fact that society can modify the nature of a good through deliberate policy choices and other collective human actions¹. For example, a policy decision to charge drivers to use a highway puts toll roads in a different category to roads that are free to use, despite the fact that the physical good is the same. Also, some goods can be made available in such plentiful quantities that they become effectively non-subtractable. This is particularly true for certain health goods.

Another relevant economic concept is that of merit goods. They are goods which, in the eyes of government, are under-valued by consumers. They offer benefits that are not recognised or appreciated by the consumer but are considered important to society. A government will intervene to lower the cost of a merit good to the consumer, thus encouraging greater use. One example is public schools. The opposite of a merit good is one which is over-valued by consumers and has negative consequences for society. The classic example is tobacco. A government intervenes to raise the price of such goods through taxation, so as to discourage demand.

¹ Kaul and Mendoza. (2003)

Governments have to prioritise which merit goods they support, given the limitations on public funds. Although there are many political considerations influencing the use of public funds, in general governments prefer to fund high-impact, low-cost interventions, rather than ones which are either high cost or have low or uncertain impact. Governments also prefer to fund interventions for which there are no other means of financing. Given the choice between two merit goods—both with high-impact and low-cost—governments will usually choose the one for which it is more difficult to find alternative sources of funding.

The nature of health, water supply and sanitation goods and services

The nature of typical water supply, sanitation and health goods and services is described below. For water supply, the paper is considering the supply of domestic water through various different methods, such as piped distribution systems, point sources such as boreholes with handpumps, etc. Sanitation goods and services include piped sewerage as well as household systems such as pit latrines. Hygiene items such as soap are also considered, along with household-level treatment of drinking water. For health goods this paper focuses on primary health care items, such as vaccines and insecticide-treated bed nets.

Health goods tend to be required periodically by a limited population at any one time. Each health product tends to be for a single purpose. Some vaccinations are only required at certain periods in life, for example infant vaccination. A bed net once purchased can be used for a few years before needing to be replaced. Such goods can be manufactured remotely from the consumer and supplied through global supply mechanisms. The quantities used are discrete and easily controlled. The cost of the health products themselves can be quite small - a few dollars per supply event - and the supply events are infrequent. However the cost of the health system which delivers the goods and services is substantial, though it serves many purposes in addition to the delivery of the goods and services under consideration.

Water is unlike almost any other good. It is needed every day by everyone everywhere in the world. The quantity (weight or volume) of water that needs to be delivered to consumers on a daily basis is large, in comparison to other goods. It has to be delivered through a system which is locally based. Water is used for multiple purposes and some of these uses are more essential than others (e.g. drinking vs. washing cars). It is difficult to package and control the quantity used, however water can be stored and resold by a consumer to others.

Water supply systems normally have a capacity constraint based on the availability of water at the source and on the size of the pipes and pumps in the supply system. Public water points have a certain degree of built-in rationing, in that you can only consume what you can carry. In networked systems water can be rationed by the water provider shutting off supply for a certain number of hours a day. This is undesirable for the consumer and also from a technical point of view, since it gives the opportunity for contaminants to enter the pipe system. Yet it is the reality in many cities of the world. Consumers who can afford to do so often take their own measures to ensure they enjoy continuity of supply throughout the day, for example by investing in their own water storage facilities.

Piped water supply systems and some non-piped water supply options (e.g., drilled wells with handpumps) are also capital intensive, requiring large initial investments, as well as significant expenditure on operation and maintenance.

Sanitation, hygiene and certain water-related goods and services have varying characteristics. Water-borne sewerage is similar to piped water supply, requiring high initial investment and a continuously operating service. Household sanitation facilities (e.g., pit latrines) once purchased and constructed can last for some years before requiring further investment or maintenance. Some household water treatment and storage products are similar, such as water filters and rainwater collection systems, whereas household chlorination products need to be purchased regularly, as does soap for handwashing.

Certain goods and services require significant promotional activities, if they are to be taken up by the consumer. This behavioural change component is essential if the potential benefits of the goods and services are to be realised. Increasingly this is an area where there can be partnership between the public and private sectors (for example in the Public Private Partnership for Handwashing with soap²).

Categorisation of various health, water supply and sanitation goods and services

In this section, the various health, water supply, and sanitation goods and services discussed above are considered in light of the preceding discussion on economic categories.

Primary health goods and services produce health benefits to the individual and often produce positive externalities – for example, vaccination protects the individual but also at a certain level of coverage provides protection for the larger population (herd effect). However preventative health measures are not always prioritised by the individual, especially the poor. They therefore are the kind of low cost, high impact intervention that may warrant government support. This support can be of two kinds – one is to ensure adequate supply (in effect making the good non-subtractable) and the other is to finance the service provision so it is free to the consumer (making it non-excludable). There are strong arguments for considering them as merit goods.

In contrast, water supply is less easily categorised. There is clear demand and willingness to pay for water, and it is usually possible to exclude non-paying users of a water supply system. It may be more difficult to exclude users from accessing raw water sources and they could be considered common-pool goods (though it has been suggested that the theoretical notion of water as a common-pool resources does not reflect the reality of a resource beset with problems of access³). Without a means to ration water use, there is a risk that user demand will exceed system capacity. This is particularly likely where water is piped to the household. Metered consumption and volumetric pricing of water are important tools for rationing water and encouraging users to value it. Water supplied to households via piped networks with metered connections has the characteristics of a private good: it is both excludable and subtractable. Charging for water discourages low value uses and encourages the control of

² www.globalhandwashing.org

³ Mehta, Lyla. (2003)

waste through leakages. This is much less true of many low-cost health interventions such as bednets and vaccines.

Water supply does not seem to be especially undervalued by the consumer and its positive externalities are less obvious, thus mitigating its selection as a merit good. It can, however, have significant payback in economic terms, due mainly to the time savings produced by having a water supply located closer to the household⁴. Whilst a clean water supply has a positive impact on health, it has been argued that the health benefits are not a key consideration when considering investing in a water supply system⁵.

Sanitation goods and services are somewhat different to water supply. Consumers tend to put a lower priority on paying for sanitation than for water. Piped sewerage is closely linked to piped water, and would follow the same categorisation except that the positive externalities from improved sewerage would appear to be greater than for water supply alone. On-site sanitation, however, is normally a household investment and might seem like an ordinary private good except for the presence of positive externalities. But demand tends to be low, suggesting that sanitation might be considered a merit good requiring some form of government intervention to support its provision. Since the behavioural element is essential, intervention might be better focused on stimulating demand and achieving behaviour change, than on providing the hardware.

Demand, supply, user fees and subsidies – experiences with funding health, water supply and sanitation goods and services

The health sector has moved away from charging user fees for health services partly due to the experience that fees often drastically decreased demand, particularly for the poor who find themselves unable to pay them and therefore are barred from accessing the services. It is important to note that abolition of user fees is not necessarily appropriate in all circumstances, and that barriers to access for the poor are not solely financial⁶.

An important difference between a health good such as a vaccine and one such as a bednet is how the behaviour of the consumer impacts the achievement of the desired health outcome. Once a consumer has decided to attend the clinic offering the vaccination services and received the vaccine, the effectiveness of the intervention is independent of the subsequent behaviour of the consumer. Whereas with a bed net, once the net has been obtained by the consumer it is still necessary for the consumer to maintain the behavioural practice of sleeping under the net, in order for the health benefit to be obtained.

It has been suggested that having consumers pay at least a contribution towards the cost of a bednet would induce them to use it more consistently, i.e. those who pay for it would value it more than those who were simply given it for free. However this does not seem to have occurred in practice, with at least one study showing no evidence of a difference in usage

⁴ Hutton G, Haller L (2004)

⁵ Cairncross and Valdmanis (2006)

⁶ James et al (2006)

between those who paid for their net and those given one for free⁷. It also seems that many consumers are either reluctant or unable to pay either full or even a subsidised price for a bed net. One study in Kenya found a drop in uptake of 60% when the subsidy was reduced from 100% to 90%⁸. Another in Tanzania found that a required co-payment of just US\$0.80 was enough to push bednets beyond the affordability of the poorest⁹.

The logistical challenges of supplying and distributing huge quantities of bed nets are significant and warrant the involvement of the private sector in partnership with government. The viability of the private sector to supply a product such as a bednet is undermined if they are offered for free in an uncoordinated manner. However through a well-planned partnership, the private sector can bring its resources to bear on a problem which is beyond the public sector's capacity to solve, as has happened, for example in Tanzania¹⁰. Nevertheless the long-term viability of the private sector involvement is heavily dependent on long-term financing by government and donors.

In the sanitation sector there has been much debate recently on the issue of subsidies, summarised well in a 2009 publication by the Water Supply and Sanitation Collaborative Council¹¹. Historically, public funding has been provided for stimulating the provision of sanitation products and services, and this seemed to be the obvious approach for tackling the huge sanitation needs in developing countries. However many now consider that the provision of subsidies for sanitation in developing countries has largely failed to increase access and may even have stifled service provision. A major stumbling block has been that provision of subsidised household toilets has not been accompanied by adequate attention to behaviour change, which has led to many toilets being unused, unmaintained or not replaced. Subsidies have also suffered other drawbacks, such as not reaching the intended targets and encouraging inaction by those who prefer to wait in the hope of receiving a subsidy, rather than using their own resources to improve their sanitation situation. Some people also argue that the sheer scale of the sanitation problem means that it cannot be solved through the use of public funds alone.

The problems with sanitation subsidies have led to the development of alternative approaches such as Community Led Total Sanitation (CLTS). As noted by the pioneers of CLTS, Kamal Kar and Robert Chambers, 'it is fundamental that CLTS involves no individual household hardware subsidy'¹². Rather they focus on behaviour change on a community-wide basis and rely on the community itself to find and fund solutions, using its own resources to meet the costs. Recent documentation has shown that in practice several countries have embraced community-led approaches focused on behaviour change, but are still using some hardware subsidies¹³.

⁷ Cohen and Dupas

⁸ Ibid.

⁹ Hierli and Lengeler (2008)

¹⁰ Ibid.

¹¹ Evans, B, et al (2009)

¹² Kar and Chambers (2008)

¹³ Tremolet S (2010)

Some similarities can be seen between the provision of bednets and on-site sanitation. Both have a key behavioural change element and both have a mixed experience with subsidies. One crucial difference is the nature of the product. Individual bednets are light, they can be manufactured centrally and distributed through normal transportation methods. Materials for household toilets, however are heavy and bulky; often they have to be manufactured locally and pose greater problems in terms of transportation. The householder also has to make significant investment of time and resources in construction work at the home. Suitable space for the toilet may not be available. This is especially a problem in high-density urban slums. Thus the provision of household toilets is arguably more complex and challenging than for bed nets. This has an impact on the way in which interventions can be financed and assistance reach the poorest.

Handwashing with soap has been shown to be a highly effective intervention in reducing diarrhoea. The product itself is found in almost all households, however it is much more likely to be used for other priorities such as clothes washing rather than handwashing. Households without soap also have the alternative of using ash. Thus the issue is less about providing access to the product and more about promotion of the behavioural practice.

Much has been written on the subject of financing water supply services and in this paper it is only possible to highlight some key issues in relation to barriers for the poor. Community water supply schemes in rural areas have typically been constructed using external finance, but also requiring some kind of community contribution (in-kind, but also, increasingly, in cash). Operation and maintenance costs have been the responsibility of the community, requiring them to organise a suitable process for collection of funds. Depending on the scheme this could be done through a payment-by-the-bucket system, a monthly levy or periodic collection when breakdown occurs. Some communities have introduced a system that waives charges for the poorest families. However it is estimated that at any time 30% of handpumps in Africa are not working¹⁴, suggesting that collecting funds for maintenance may be problematic, though there are some other reasons why handpumps fall into disrepair. Poor families might opt to collect water from a free source (such as a pond or spring) than pay to use an improved community water point.

Piped schemes have various arrangements for meeting costs, including connection charges and usage charges, which might be a flat rate per household or based on metered usage. Piped schemes are often not able to fully cover their costs and may receive government grants. Several studies have shown that poor people in urban areas who do not have their own household connection pay substantially more for water than the better off who are connected. This has led some agencies to assist in finding ways in which the poor, particularly those living in informal settlements, can get connected in a way which is acceptable to the water provider. An example would be where the provider supplies water in bulk to a community-based organisation which then manages the distribution of that water within the informal settlement.

¹⁴ Baumann E, (2009)

In recent years much attention has been given to home-based methods for improving water quality. Technologies include the use of chlorine solution or tablets to disinfect water prior to drinking, filtration of water through membranes or media, and solar disinfection. Chlorine-based products have the disadvantage of imparting a taste to the water which many consumers find objectionable. Some water filters, especially those manufactured by small-scale local producers, can be bulky and require regular maintenance, such as cleaning and disinfection. However technological improvements in the manufacturing of higher quality water filters have made some products smaller, easier to transport, longer-lasting and simpler for consumers to use, making them somewhat similar to the long-lasting insecticide-treated bednets previously discussed.

Implications for policies for reducing financial barriers to access to WASH and health services for the poor

Table 1 annexed to this paper summarises the key factors that affect the success or failure of measures taken to reduce the barriers to access for the poor for the various health, water supply and sanitation goods and services under discussion. The following are some suggestions for actions that could be taken by governments and others to tackle financial barriers to access for the poor. These suggestions will be subject to further analysis, but are offered at this stage to stimulate debate.

1. Health products such as vaccines, bed nets – these are small, infrequently required, easy for the consumer to use, have a clear and unique purpose, have positive externalities, and low demand – they can be treated as merit goods and are suitable for supply-side subsidies
2. Sanitation – the infrastructure required is bulky, purchased infrequently and requires a large commitment by consumer (time, space, effort, money). A significant investment in communication needed, positive externalities only come at high level of usage. There has been poor experience with subsidies. Governments should first invest in communication to promote the behavioural practice of sanitation. This could be followed by broader measures for increasing the income of the poor rather than offering direct household subsidies.
3. Soap is an item frequently required and generally available in most households. Investment is required in communication to encourage appropriate use for positive health outcomes (i.e. handwashing), but there seems to be no reason to subsidise the product.
4. Point of Use water treatment – some products (water filters) have similar characteristics to bednets and could be considered for similar subsidy and promotion approaches, for example free distribution to a targeted population.

Others (e.g. chlorine tablets) require frequent purchase and are less suitable for subsidies.

5. Water – the product is bulky and requires high capital investment in the supply system. There is a high demand, and a system is needed to ration it, which is best done through pricing. For piped supplies the poor are best helped by making it easy to connect to the system but they should still be charged for use. For community water points (e.g. handpumps), external capital investment is required. However without a system for collecting user contributions maintenance problems are likely to arise. Systems to support the poor to pay these minimum necessary charges need to be considered.

Ensuring that the poor have access to water supply and sanitation goods and services is an issue that goes beyond the water and sanitation sector itself. Removing user charges for water supply and providing direct subsidies for household sanitation have been seen to have significant disadvantages. A different approach would be to consider boosting the purchasing capacity of the poor. This would be done through broader social protection measures, such as cash transfers or income support and be administered by an appropriate system. A water utility is not well suited to operate as a social protection mechanism.

None of the above implies that governments should abdicate from investing in water supply and sanitation; on the contrary, governments are always likely to need to make capital investments in water supply and sanitation systems. Funding is also critical for the communication activities associated with influencing consumers to adopt appropriate practices required for good sanitation, hygiene and water management. Ultimately, governments have an obligation to create an environment which is conducive to ensuring that water and sanitation is available to all.

CONCLUSION

Examination of the nature of various health, water supply and sanitation goods and services using economic concepts about private, public and other types of goods has shown that different approaches are needed for minimising the financial barriers faced by the poor in gaining access, depending on the particular good or services in question. Certain health goods such as vaccines are clearly suitable for selection as merit goods. It is not suitable to provide water for free, though there are ways to help the poor. For sanitation as well as bed nets, it is essential that government investment is made in promoting the necessary behavioural practices, regardless of whether the product itself is made freely available or not. Finally, it is suggested that the design of mechanisms for helping poor people gain access to these goods and services need to consider options beyond the technical sectors and be integrated with broader social protection mechanisms. For certain goods and services it may be better for

governments to boost the incomes of the poor so that they can then afford to pay for services rather than offer the services for free.

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Table 1 Characteristics of certain health, water supply and sanitation goods and services and implications for policies to reduce barriers to access

	Health – e.g. vaccination	Health – e.g. bed net	Hygiene - soap	Sanitation – household, on-site	Point of Use water treatment	Water supply – rural point source	Water Supply – municipal piped to household
Nature of product	Small products with highly specific purpose required occasionally	Moderately sized product with specific purpose, for occasional purchase but daily use	Small household product, with multiple purpose, consumed daily	Fairly large, heavy product requiring case-by-case installation in household, significant input from householder, and daily use	Varies, e.g. filters are bulky for occasional purchase, chlorine solution small but frequent purchase necessary	Water is bulky, requiring installation and maintenance of supply device to deliver on daily basis.	Water is bulky, requiring major infrastructure to deliver on daily basis
Cost of product	Low	Moderate	Low	Moderate to high	Moderate	High – both capital investment and operational costs	High – both capital investment and operational costs
Impact of product on consumer	Specific and high	Specific health plus comfort	Multiple – health, aesthetic	Health impact limited by actions of neighbours, but provides other personal benefits e.g. privacy	Specific positive health impact, sometimes negative aspects (taste)	Essential for daily life, multiple uses, economic impacts due to convenience	Essential for daily life, multiple uses, economic impacts due to convenience
Positive Externalities	Has impact beyond consumer (herd effect)	Some (e.g. reduces vector)	Some (barrier to transmission)	Yes, but requires high coverage before impact	Less obvious	Less obvious	Less obvious
Normal level of consumer demand	Moderate – requires understanding of purpose	Moderate - requires understanding of purpose	High – most houses have it, though not necessarily for handwashing	Variable – from low to high depending on circumstances	Low to moderate – requires understanding of purpose	Very high and for multiple purposes, though burden of carrying from source to home limits use	Very high and for multiple purposes
Impact of imposing payment for good/service	Reduces demand	Reduces demand	Paying has been the norm	Free products are not necessarily taken up, and cheap solutions possible, but high cost products not within	Reduces demand	Clear willingness to pay for an essential product, as long as services is reliable	Clear willingness to pay for an essential product, if services is

	Health – e.g. vaccination	Health – e.g. bed net	Hygiene - soap	Sanitation – household, on-site	Point of Use water treatment	Water supply – rural point source	Water Supply – municipal piped to household
				reach of poor.			reliable
Behavioural issues	Consumer needs to decide to attend health service	Consumer needs to decide to purchase (one-off) and to use (daily, but use is not difficult)	Consumer needs to purchase and use frequently and regularly and at key moments for health impact	Consumer required to make significant investment of own time and effort, so needs motivation, but are various motivators, since impacts are multiple.	Consumer required to appreciate health benefits, value them more than negative aspects (taste) and be prepared to regularly purchase product and/or do regular maintenance (keep filter clean)	Consumer does not need persuading to use, but may need knowledge to use in a beneficial way. Consumer often expected to participate in management of supply system and may need substantial orientation and motivation to do so. Lack of understanding on water quality issues could mean poor people use lower quality alternative sources which are free.	Consumer does not need persuading to use, but may need knowledge to use in a beneficial way
Access to product/service	At health centres, requires functional health system	Central manufacture and distribution system required, best through private sector	Can be by large or small scale private sector manufacturer with distribution close to consumer	Some products could be mass manufactured remotely, but largely requiring locally-produced products and individually-tailored installation	Can be manufactured and distributed through small or medium-scale private sector	Requires supply device to function on daily basis	Requires supply and distribution system working 24 hrs and connection to household
Periodicity of demand	Occasional, specific times in life	Occasional purchase, daily use	Regular and frequent	Occasional purchase/installation, with daily use	Varies – can be occasional (e.g. filters) or frequent (chlorine solution or tablets)	Several times a day	Continuous

	Health – e.g. vaccination	Health – e.g. bed net	Hygiene - soap	Sanitation – household, on-site	Point of Use water treatment	Water supply – rural point source	Water Supply – municipal piped to household
Maintenance requirement	None for consumer	Small for impregnated, long-lasting nets.	None.	Frequent for cleanliness, less so for emptying/replacement, depending on design	Varies – small (chlorine) or frequent (cleaning filter, replacing media)	Supply device needs regular maintenance, which can be complicated to organise. System failure is common.	Supply system operator needs to perform frequent and significant maintenance
Conclusions on actions to reduce barriers to access	Government maintain functioning health system, provide service free to consumer, invest in communication to persuade consumers to attend	Invest in improving product – impregnated, long-lasting, to reduce complications for consumer. Invest in communication and subsidise product	Supply-side measures unlikely to be feasible. Better to improve purchasing power of poor consumer	Supply-side measures are complicated due to local nature of product as well as cost, and do not necessarily improve demand. Improvement to consumer purchasing power might be better. Need significant investment in communication to increase consumer demand	Supply-side measures to improve the product to be less complicated for the consumer are possible, but not suitable for all types of product. Demand-side action possible (increase purchasing power of consumer), along with substantial investment in communication	Systems are often community-based and beyond investment capacity of the community, requiring government/donor support. Consumers often expected to make financial contributions to both capital and operational costs and this can be problematic for the poor. Structured mechanisms to reduce financial demand on poor can work.	Well planned and managed supply systems can provide lowest-cost product for the poorest. Can help poor through lowering fixed charges. Supplier and government also concerned to restrict over-demand
Risks/limitations in suggested approach	Requires maintenance of functioning health system	Requires public-private partnership. Long-term viability of private sector not yet proven.	Improving purchasing power of consumer goes beyond capability of sector	Poor people can have limitations other than purchasing power, e.g. land space, ownership	Improving purchasing power of consumer goes beyond capability of sector	Poor may have access to alternative low quality sources of water which they might use in preference to paying for water from improved source.	Municipal systems are natural monopolies. Often require government support to invest in infrastructure and maintain realistic tariffs.

