



Sanitation market research in rural Cambodia

Rapid assessment of supply and demand in three rural districts



Key findings

- In general, the rural supply chains for sanitation products and services are well established in the three districts.
- Uptake of toilets is showing steady progress but slows down drastically when the last mile¹ is in sight.
- Rural households opt for high-end, rather expensive sanitation facilities.
- The preferred types of toilet facilities are unaffordable for most if not all of the poorer households.
- Knowledge on appropriate and affordable toilets is low among consumers and sanitation entrepreneurs.
- Existing pit configurations – two pits linked in series – do not facilitate current manual pit emptying practices.



Assessing supply and demand for sanitation products and services

Cambodia has the lowest sanitation coverage in the region, and it is reported that, as a result, over 6,600 children die each year from diarrhoeal diseases.² Although there is still a long way to go, Cambodia ranked third among 16 countries that reduced open defecation rates by at least 25 per cent from 94% in 1990 to 69% in 2015.³

The rapid uptake of appropriate and adequate sanitation facilities that keep the environment free from human faecal contamination depends on the right mix of demand, finance and supply. Only when people have access to knowledge, skills, means, materials and so forth to construct, maintain and, where necessary, upgrade their toilet facilities will they be in a position to sustainably change their defecation practices.

Sustainable Sanitation and Hygiene for All (SSH4A) is SNV's comprehensive approach to ensuring equitable and sustainable access to improved sanitation and hygiene for those who need it most. Developed since 2008 in Asia with IRC, the SSH4A approach is now implemented by SNV in 15 countries in Asia and Africa. The SSH4A programme integrates best practices in sanitation demand creation, sanitation supply chain strengthening, hygiene behaviour change communication and governance, including gender and social inclusion and scaled through government-led districtwide programmes.

The current phase of the SSH4A programme in Cambodia lasts until June 2017 and is funded by the Stone Family Foundation.



Map of Cambodia with three SSH4A focus districts

1. The last mile refers to the final leg towards achieving universal sanitation coverage. This is usually the last 10 to 20% without access to sanitation facilities. The sector has come to realise that this last leg is not easy to realise and requires alternative more-effective approaches and often also additional resources.
2. WSP (February 2008) Economic Impacts of Sanitation in Cambodia, A five-country study conducted in Cambodia, Indonesia, Lao PDR, the Philippines and Vietnam under the Economics of Sanitation Initiative (ESI). The research report is available on http://www.wsp.org/sites/wsp.org/files/publications/ESI_Cambodia_full.pdf
3. UNICEF and World Health Organisation (2015), Progress on Sanitation and Drinking Water – 2015 update and MDG assessment. The report is available on http://www.unicef.org/publications/files/Progress_on_Sanitation_and_Drinking_Water_2015_Update_.pdf

To inform the SSH4A sanitation supply chain strengthening component, SNV Cambodia, with support from IRC, undertook a rapid assessment to understand current and potential future demand and supply for sanitation products and services. The assessment was carried out in the three SSH4A focus districts of Banteay Meas and Chum Kiri in Kampot province, and Basedth in Kampong Speu province.

The purpose of the research was three-fold:

- Understand consumer demands, needs and aspirations
- Understand current supply of sanitation related products and services
- Identify practical recommendations relevant to the three districts.

The sanitation market research was also used to see if the existing market mechanisms could help increase latrine uptake and to identify opportunities to scale up the availability of demand-responsive and affordable sanitation products and services.

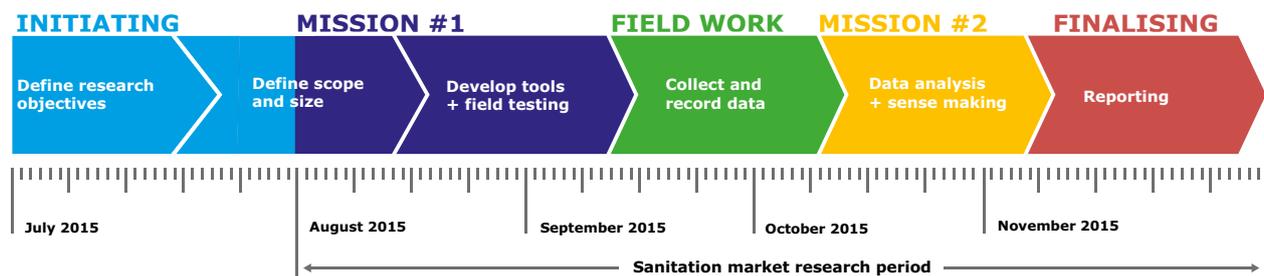
The research focused primarily on the first three links of the sanitation service chain: capture, containment and pit emptying. The marketing mix (place, product, price, and promotion), expanded with two additional elements (who and knowledge), was used as the main analytical

framework to guide the design of the research. The research findings are presented according to this framework.



Marketing mix (the four Ps) plus two extra elements

The figure below summarises the steps that were taken to design, conduct and complete the research assignment.

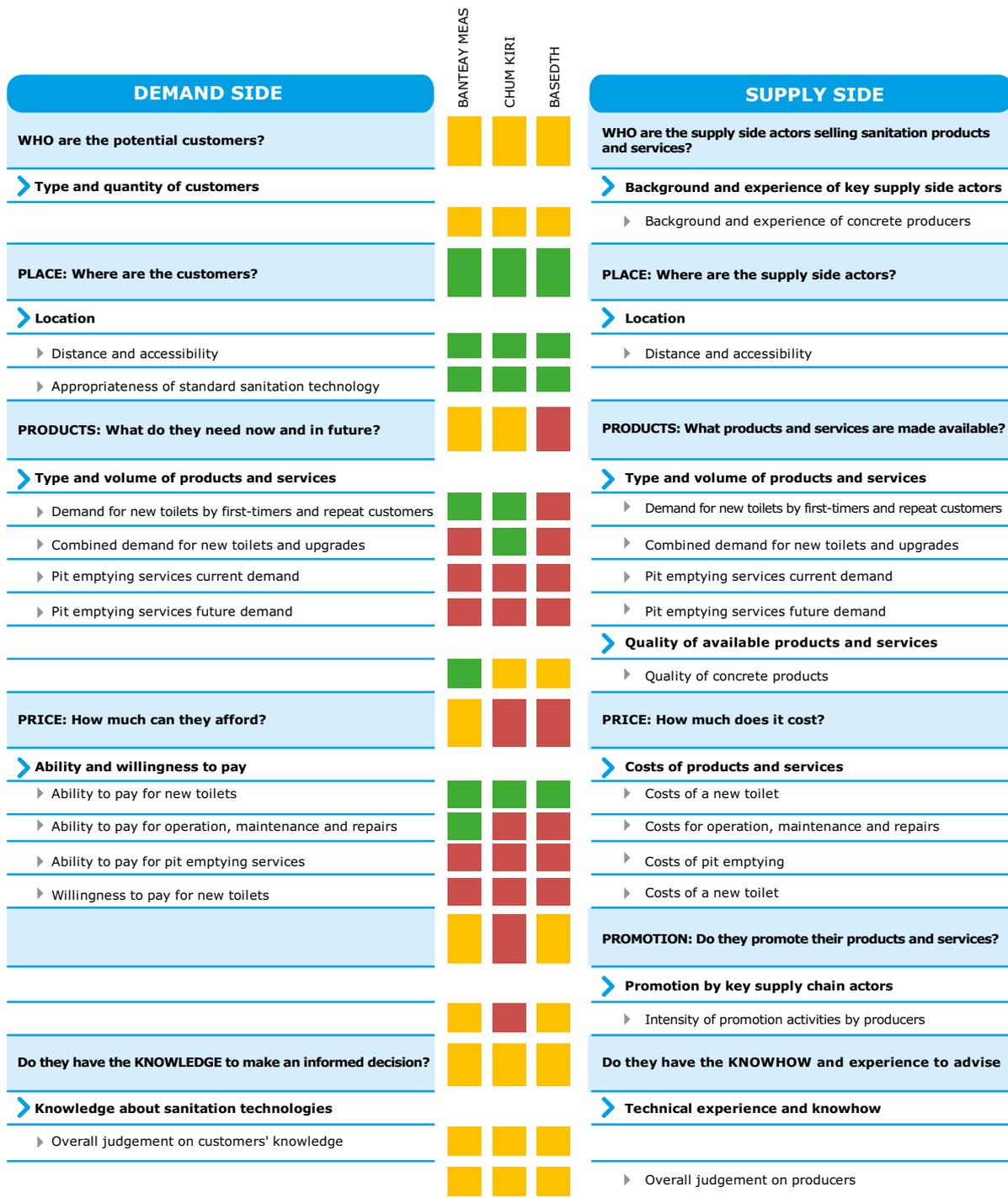


Key research findings

The results of the sanitation market research (rapid assessment) were visualised with the aid of a traffic light dashboard to show the match or mismatch between supply and demand. The dashboard was designed with three traffic lights indicating different degrees of match between supply and demand.

The dashboard, shown below, provides immediate and easy insight into the main issues that require attention. The green lights show a match between supply and demand of 75% and more: these issues require no attention.

The yellow lights indicate a match between supply and demand of between 50% and 75%: these issues deserve attention but only after the red traffic light issues have been addressed. Finally, the red lights indicate a match between demand and supply of less than 50%: these issues require immediate attention and may need to be analysed further.



Combined sanitation supply and demand dashboard for the three districts

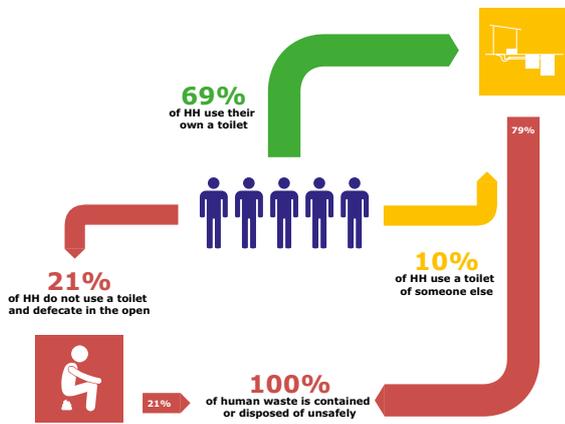
The findings of the sanitation market research address the concerns as well as the aspirations of both first-time buyers (households without toilet) and repeat customers (households with toilet). In sanitation marketing, when customers are often presumed to be a one-time buyer – someone who buys a single purchase and does not return –, households without a toilet are the most obvious category of potential customers.

Sanitation programmes often overlook the needs and value of returning customers. Repeat customers are an important segment, not just because this is crucial for the success and ultimate viability of the entrepreneurs actively engaged in sanitation supply chains, but also because repeat purchases are essential to

ensure that households stay on the sanitation ladder or move up the sanitation ladder.

WHO: Who are the customers and who are the supply chain actors?

The sanitation situation in the three districts is quite diverse. Whereas seven out of ten households in Banteay Meas own a toilet, in Chum Kiri this is only one out of five and in Basedth one out of four. The reason for these differences is that when the data was collected at the start of 2015, the SSH4A programme had been running for three years in Banteay Meas but had only just started in the two other districts.



Access to sanitation in Banteay Meas district

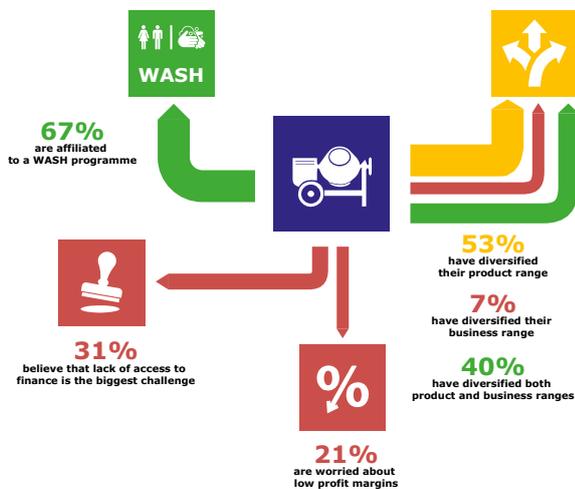
Toilet adopters opt for high-end expensive toilets but may still not be fully satisfied:

On average, households are spending around US\$380 on a toilet. Most toilets use water for flushing and have a durable superstructure that provides comfort and privacy. However, roughly one in two households are not (fully) satisfied with their toilet and the majority are not satisfied with the toilet’s superstructure.

Non-toilet adopters are not satisfied:

Households without a toilet are not satisfied with their current situation; either using someone else’s toilet or defecating in the open. More than half of the respondents find it inconvenient not to have a toilet and two out of ten feel embarrassed. Although almost all of them would like to have a toilet, the lack of sufficient financial resources is cited as the main reason for not having a toilet, irrespective of whether they are ID Poor or non-poor households.

Concrete producers rely too much on one type of customer: Producers focus primarily on new customers with little or no attention to maintaining customer relationships. Repeat customers are an interesting market segment that could provide new business opportunities when new products and services are introduced. The biggest challenge concrete producers are confronted with relates to difficulties accessing finance (loans) to run their business (31%).



Concrete toilet part producers in the three districts

PLACE: Where are the customers and the supply chain actors?

Products required to construct toilets are readily available in the three districts: There are enough concrete producers and hardware stores in the three districts. The location of the business premises is fairly central and easily accessible. Most businesses also provide home delivery services.

Existing sanitation technologies do not facilitate current manual pit emptying practices:

Most households opt for a toilet with two separate pits linked in series as it allows for larger volumes of sludge to be contained. However, it means that toilet owners will have to handle fresh wet sludge when both pits fill up. A toilet with alternating double-pits would be a better option as this would facilitate safer pit emptying.



Two pits linked in series

One size does not fit all: The principle of one-size-fits-all in the case of the easy latrine requires some rethinking, as the standard package does not take into consideration differences in household size or ease of emptying.

PRODUCT: What products and services are needed and what is available?

It is not clear how awareness and interest translate into actual purchase: The research was not able to assess how many of the households without a toilet that showed interest in constructing a toilet will actually build one. This is because customer buying behaviour and the actual buying process are characterised by a high level of ambiguity.

There is almost no demand for toilet repairs, improvements or upgrades:

Although one out of four existing toilets are not classified as improved sanitation, only 6% of households have carried out any repairs (or improvements) and only 4% have spent any money on it.

Production volumes should be sufficient to meet the demand for new toilets:

There is a match between supply and demand in Banteay Meas and Chum Kiri, which means that the expected demand for new toilets can be met by the existing concrete producers. Matching current supply with future demand may be more difficult in Basedth as there appears to be a shortage of supplies.

There is a serious shortage of professional pit emptying services:

At present, 93% of households are emptying their own toilet pits because of a lack of (affordable) services.

There are no mechanical pit emptying service providers located in the three districts and only a few manual pit emptiers. Mechanised emptying services need to be brought in from elsewhere, which is expensive.

The quality of concrete products does not match their appearance: The assessment scores might give the impression that everything is fine. However, the type of reinforcement used is inadequate and most of the products are sold and installed before they are sufficiently cured and hardened to achieve the required strength.



Concrete toilet parts at production centre

PRICE: How much can customers afford and how much does it cost?

ID Poor households⁴ cannot afford the predominant sanitation technology: ID Poor households spent on average only US\$69. When using the 2014 Cambodia Socio-Economic Survey (CSES)⁵ annual disposable income figures, the lowest wealth quintile would have to spend some 70% of their annual income, way above international benchmarks, to construct a "simple toilet" estimated at US\$150. For households in the other wealth quintiles, the costs of a "simple toilet" should be less of a problem.

Willingness to pay for new toilets is low: The calculations are based on what the households without a toilet thought their "dream toilet" would cost: an astonishing 1.7 million Riel (US\$430). The maximum amount households are willing to pay for their "dream toilet" is US\$100. Except for the ID Poor in Basedth, who indicated that they are only willing to pay US\$40, there are no significant differences between ID Poor and non-poor and between the three districts.



A US\$500 toilet under construction in Banteay Meas

Loans, as a way to spread investments over time, are not seen as a real option as they are difficult to secure: In most cases, households made use of a mix of different payment methods (e.g. cash combined with a loan or subsidy). However, the most common method is to pay in cash. Only 4% of current toilet owners used a loan to construct their toilet. Even when loans are available this might not be a realistic option for ID Poor households as the 2014 CSES revealed that one out of three rural households already has a debt of around US\$890.

Mechanised pit emptying services are way too expensive: The current costs of mechanised pit emptying are not in relation to the capital investment costs of a toilet's sub-structure. Whereas pit emptying is expected to cost up to US\$100, the material costs for a double off-set pit consisting of three concrete rings each is less than US\$50.

PROMOTION: Do concrete producers promote their products?

Promotion is not seen as an important marketing tool: None of the concrete producers are very active in promoting their products. However, given the lack of product and price diversity this may not be a huge problem as basically all customers know where to buy concrete products. Promotional activities will become more important when entrepreneurs decide to diversify their products and/or business portfolio. Nine out of the 15 interviewed producers benefit from sales agents recruited by different WASH programmes.

KNOWLEDGE: Do customers have the knowledge to make informed decisions?

Customers lack knowledge and concrete producers lack knowhow. The overall feeling of households is that they do not have enough information to make an informed decision. The biggest concern is that those who have the intention to construct a toilet do not know who to contact. There is a general lack of knowledge and experience to adopt alternative technologies or to modify existing technologies. This implies that the same technologies are applied over and over again, even if these may be inappropriate (for example the double pits linked in series) or too expensive for the poor.

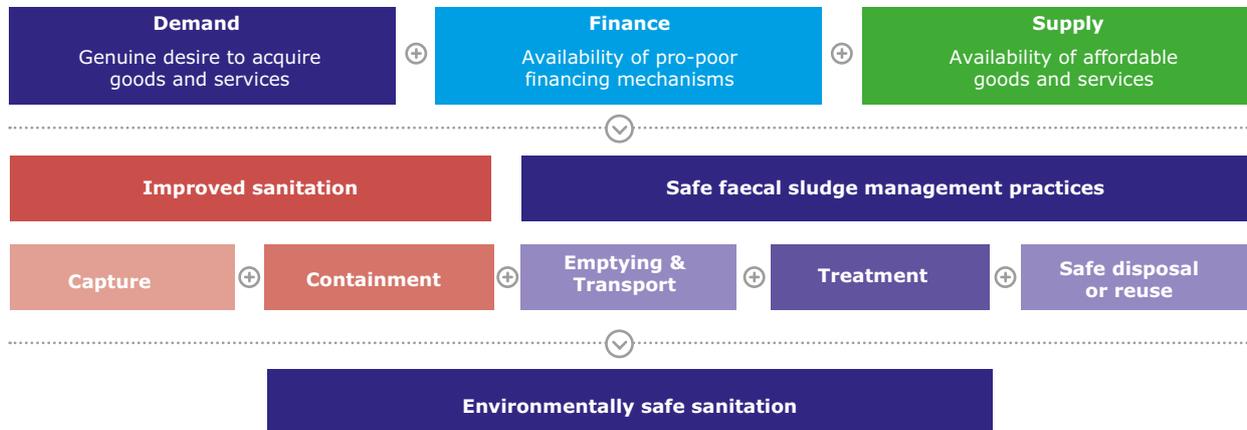


Abandoned toilet pits (two pits linked in series)

4. ID Poor households: The Identification of Poor Households (ID Poor) Programme was established in 2006 within the Ministry of Planning to officially establish national procedures for identification of poor households and to realise their implementation throughout Cambodia. Service providers can use ID Poor data to directly target development services and assistance to the poorest households in a village or a geographical area.
5. National Institute of Statistics, Ministry of Planning, Cambodia (October 2015), Cambodia Socio-Economic Survey 2014. Available on http://www.nis.gov.kh/nis/CSES/CSES_2014_Report.pdf

Main recommendations

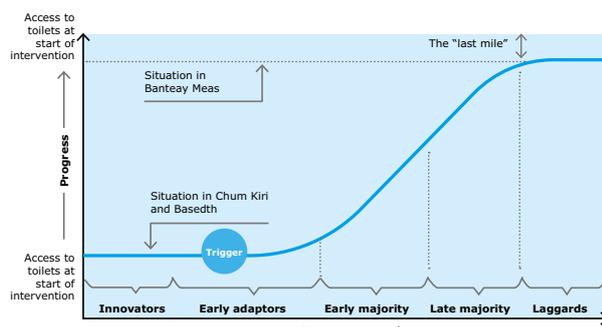
The findings from the rapid assessment support the fact that three mutual supportive ingredients need to be in place for households to be able to acquire, use and sustain improved sanitation facilities: demand, finance and supply. The findings also support the premise that the entire sanitation service chain (capture, containment, emptying and transport, treatment, and safe disposal or reuse) needs to be taken into consideration from the onset by any programme which has the intention to increase access to improved environmentally safe sanitation. Recommendations specific and relevant to the actual situation in the districts are presented here:



Recommendations for Banteay Meas

1. Create a better understanding of the last mile

Although Banteay Meas is heading towards becoming the first district in Cambodia that will be declared ODF, this does not mean that every household has a toilet. Regular demand creation activities work up to a certain point but more needs to be done to ensure that the remaining unserved population is reached. A quick assessment to analyse the current situation would help to determine what programme interventions need to be modified to ensure universal access to sanitation facilities.



2. Think beyond ODF and promote safe faecal sludge management practices

Considering current practices, the focus should be on safe handling of faecal sludge by households as this is expected to be the main method for the foreseeable future. This activity would include the following:

- Raising awareness among toilet adopters and local authorities on the potential dangers associated with faecal sludge and increasing knowledge on safe practices
- Developing practical guidelines for the safe emptying and transportation as well as the safe disposal or reuse of pit contents.

3. Continue action research on alternative safe faecal sludge management practices

The action research should focus primarily on household practices as professional pit emptying providers are unlikely to become an affordable alternative in the short term. Issues that are to be researched include the following:

- Characteristics of faecal sludge, as this would provide insight into the dangers of handling faecal sludge and will determine what treatment options need to be considered
- Factors that impact the variability of faecal sludge such as toilet usage, storage duration, inflow and infiltration characteristics of different containment options, emptying frequencies, etc.
- Safe pit emptying and transportation practices
- Treatment and reuse options.

4. Support MRD to develop post-ODF guidelines

Considering that Banteay Meas is expected to be declared ODF soon, it is crucial that SNV Cambodia continues to engage with the Ministry of Rural Development (MRD) to ensure the district level learning is reflected at the national level. One option would be to support the development of post-ODF guidelines with specific attention to ensuring i) inclusion of measures designed to sustain behavioural change in ODF communes and districts; ii) inclusion of approaches to upgrade basic sanitation facilities; and iii) inclusion of safe faecal sludge management practices.

Recommendations for Chum Kiri and Basedth

5. Review existing sanitation technologies

It is a top priority to make sure that the correct toilet sub-structures are installed, which facilitate manual pit emptying, and to speed up toilet uptake by poorer households as too many households prefer to wait till they have enough resources to construct their “dream toilet”. The existing informed choice catalogue needs to be reviewed to ensure that it provides adequate alternative (and more affordable) technology options. The review and subsequent modifications should address the following issues:

- Designs and quality of construction should ensure that improved toilets are put in place
- Alternative pit configurations need to be introduced to facilitate easy and safe pit emptying by toilet owners
- Alternative but acceptable superstructures need to be introduced that allow customers to customise the shelter according to their financial means and aesthetic preferences
- A modular system, that enables customers to build and upgrade their toilet whenever they are able to afford it, should be considered as an alternative option for poorer households.

6. Increase knowledge on appropriate and affordable sanitation technologies

More needs to be done to increase the knowledge of potential customers on appropriate and affordable technology options. This to make sure that households have sufficient information to make an informed decision and to avoid inappropriate toilets being copied. The knowledge of other relevant actors, for example concrete producers, sales agents and local masons, also needs to be enhanced. Training and post-training support needs to be provided to programme staff and to staff of the provincial and district branches of the MRD to carry out these activities more effectively.

7. Design more effective demand creation approaches

It is another top priority to accelerate toilet uptake among all households. The proposed study on the last mile in Banteay Meas is expected to provide the valuable insights

necessary to improve demand creation approaches. Considering earlier successes, it is safe to conclude that the programme has been very effective in raising demand for sanitation facilities. However, considering the time it takes to increase sanitation coverage, this approach may not be adequate. Formative research on sanitation uptake revealed a couple of persistent barriers which delay action. Future demand creation activities should therefore ensure that a sense of urgency is generated among villagers.

Demand creation activities should focus on ensuring that all households have access to, and use, an improved sanitation facility. When a proportion of households are still using unimproved sanitation facilities, an effort should be made to motivate and support them to improve their existing toilets.

8. Improve product quality and pilot a quality assurance system

To improve the quality of the concrete products the programme should consider developing and introducing quality standards and a certification system for all (affiliated) concrete producers. This should be done in consultation with MRD and other WASH programmes such as iDE and WaterSHED. Programme staff, sub-national MRD staff and concrete producers should be trained on the application of the new quality assurance system.

Additional recommendations are:

- Work with the most successful (and largest) concrete producers
- Provide tailored capacity building support to enhance the capacity of concrete producers
- Support concrete producers to diversify their product- and business portfolio
- Avoid introducing fixed prices.

9. Review the existing pro-poor support strategy

The rapid assessment revealed that without any financial support, ID Poor households will not be able to afford an improved toilet. It also revealed that SNV Cambodia’s Pro-poor Sustainable Sanitation Fund has been effective in increasing access to toilets for the poor households. The Fund’s eligibility criteria may prove to be too strict to ensure rapid realisation of equitable access to improved sanitation facilities in general, and specifically in Chum Kiri and Basedth.

The review should focus on: 1) how pro-poor support can become less dependent on the actions taken by non-poor households; and 2) how uptake of improved toilets among poor households can be accelerated.

Other recommendations

10. Share learnings with MRD to support the development of the pro-poor guidelines

MRD is currently consulting with the sector to develop the national pro-poor support guidelines and the use of smart subsidies. The review of the pro-poor support strategy and the results of, and learning from, implementing the pro-poor support strategy in Banteay Meas should provide useful insight into what works at scale and will potentially contribute district based experiences to the national guidelines.

11. Support development of community-level sanitation legislation and enforcement

Experience in a similar rural sanitation and hygiene programme in Eastern Indonesia has shown that local legislation can be very supportive in achieving sustained universal access to, and use of, improved sanitation facilities. The programme should therefore explore whether it is possible to introduce similar sanitation supportive legislation at commune- and possibly district-level in the three SSH4A districts.



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This research brief was written by Erick Baetings, IRC Senior Sanitation Expert on the basis of a report prepared by IRC and SNV Cambodia: Sanitation market research in rural Cambodia, Rapid assessment of supply and demand in three rural districts; Final (unpublished) report, SNV Cambodia; Erick Baetings (December 2015)

This research brief can be found on the on the Sustainable Sanitation and Hygiene for All (SSH4A) project page at: <http://www.ircwash.org/projects/sustainable-sanitation-and-hygiene-all>

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