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WATER SECTOR TRUST FUND

Lessons Learnt in Implementing UBSUP from Piloting to Phase II

The Water Sector Trust Fund (WSTF) successfully piloted the Upscaling Basic Sanitation for the Urban poor programme between the year 2015 and 2016. Two UBSUP phases have subsequently been implemented. Many lessons were learnt during the pilot phase whereby they have been incorporated in the upscaling stages of implementation. These lessons led to project changes which translated into improvements. Nevertheless, due to the larger scope (20 towns) of the first and second phase, more lessons have been learnt in the diverse environments and scenarios. Best practices have been established, but gaps and room for even more improvements have also been identified. This will ensure the success of future UBSUP Phases and Calls.

This document compiles these lessons that have been learnt in implementing UBSUP since inception of the programme in 2011. They have been drawn from WSTF and GIZ staff who have been working on the programme.

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Key Lessons learnt

Appraisal

The key to implementing a successful upscaling project starts at the initial stages of application and appraisal¹. During the application, the Water Service Providers (WSPs) should fully understand the scope of the project and related costs and benefits. Furthermore, the WSPs should only be awarded the project after meeting the following key criteria.:

- Availability of suitable land (terrain and soil conditions) for the construction of the DTF,
- Acceptance of the DTF by the local community,
- Proven demand for all sanitation infrastructure,
- Availability of exhausters services in the area,
- Qualified, sufficient and committed staff,
- There should be no similar project in the area to avoid conflict of ideas.

Social Marketing

In Kenyan urban settings, UBSUP programme has proven that social marketing activities that focus on behaviour change are more successful in creating demand. From a sustainability point of view, social marketing has triggered investments and greater sense of ownership by plot owners and tenants. This is crucial for long-term maintenance of infrastructure.

Phase delays

One of the most important lessons learnt is that breaks and delays between the phases should be avoided. Breaks of several weeks to months between phases interrupt demand in the areas. This usually results in higher marketing costs in the following phase in trying to reignite demand and training of new social animators.² Delays between phases were caused by funding delays, as WSTF had to apply for funding for each phase from the development partner. This process can take up to six months from funding request to availability of funds. At the individual project level, the break can be even longer, WSTF could only request new funding for a cluster of WSPs. This means that some WSPs have reached the goal of a phase earlier than other WSPs. Fast WSPs however, had to wait for the other WSPs to join the cluster. In order to improve this, WSTF has developed a new phasing concept which will guide future calls and funding. The key improvement will be, that WSTF will have the funding for three phases per WSP at its disposal. This eliminates the delaying factor of having to request for new funding for each phase from the development partner. It allows WSTF to fund new phases at the individual project level, without the need to cluster WSPs. Furthermore, WSPs that cannot prove existing demand for subsequent phases, will not qualify for further funding. This unused money will contribute to the next Call for Proposals.

¹ Applies for projects where the implementers make competitive applications.

² Marketers may find other employers if there is delay between phases.

UDDTs

Another key lesson learnt, is that dry toilet technologies (UDDTs) are not viable in many Kenyan urban settings. During the operation of UDDTs in the pilot towns a myriad of challenges was encountered, which resulted in the decision to shift the main UBSUP focus to wet toilet systems. UDDTs are more expensive and less attractive for most Kenyan plot owners. The cost per UDDT is overall higher than per flush toilet. The technology also takes up more space per toilet, which is often unavailable. These forced some landlords to convert houses into toilet space which lowered their rental income, making the construction of UDDTs generally unattractive.

Due to high tenant turnover that is often experienced in the urban low-income areas, UDDTs are often prone to misuse and poor maintenance by new tenants. This led to poor dehydration and partial sterilization of pathogens due to poor ash application. In other instances, there was use of water in washing which led to leakages. Wet leakage of UDDT vault content is particularly problematic, due to the high population density and number of people exposed to the contaminated wastewater and sludge. Emptying UDDT vaults with wet content is extremely hazardous for the sanitation teams and the residents. Sanitation Teams charge more for emptying wet vaults, adding to the overall costs of UDDTs.

Establishment of a reliable emptying and transportation network for UDDTs was also a challenge, due to limited profits resulting from relatively low number of toilets versus the costs incurred in transportation. If UDDTs are not emptied at the correct time, the user experience is bad and eventually the UDDT will not be usable. This leads to overuse (over 10 users per toilet) of other toilets.

Another factor that influenced UBSUP to change focus from UDDTs, is the lack of demand. The UBSUP programme is highly driven by demand. Despite intensive social marketing efforts to promote the UDDTs, the majority of landlords and plot owners are not interested in investing in dry technologies. This was the case for areas which were new to the UBSUP programme as well as for areas that have witnessed the misuse and leakage of misused toilets. As a key aspect of UBSUP is to be demand-driven, existing demand for wet toilet systems are promoted. The programme has however put emphasis on incorporating exhaustor operators to make sure that these toilets are serviced when they are full.

Nevertheless, the UBSUP Programme does not fully dismiss UDDTs. It is still available to customers, who see this technology as the best option for their particular plot. Social animators are urged to advice the landlords accordingly on this decision and to consider the specific plot set up (space, user turn-over, emptying options, etc). Furthermore, as UBSUP is continuously upscaling, new project areas with different climatic conditions may prove to be more suitable for the UDDTs.

Septic Tanks and PCI

Although UBSUP supports the construction of the more sustainable septic tanks, it has proven difficult to encourage this with the current Post-Construction Incentive (PCI) of KES 20,000, which is the same for all toilets, regardless of the storage technology. UBSUP therefore will consider adjusting the PCI upwards for clients constructing septic tanks due to their higher construction costs. UBSUP's social animators will be trained to actively promote septic tanks.

Lessons learnt (complete)

1. Calls and Phases Concept	
a. Calls	<ul style="list-style-type: none"> • Early preparation is needed to ensure timely launching of new Call.
b. Phases	<ul style="list-style-type: none"> • To avoid breaks between various phases and long disbursement delays, the phasing of UBSUP needs to be well-managed (new phasing document should guide future funding). • There is a need for completion reports in each Phase before starting next phase, to avoid funding of unqualified WSPs/areas. • Financially, phases should be treated as separate projects. The WSPs should open separate bank accounts for each phase to ease the process of analysing financial flows.
2. Application and Appraisal	
a. Application	<ul style="list-style-type: none"> • Simplified application forms give clear understanding of the programme to the WSPs and lead to improved quality of proposals. • WSTF needs to ensure that WSPs use the UBSUP application form and do not confuse it with the PSF application (in advertisement and workshop).
b. Appraisal	<ul style="list-style-type: none"> • Success of a programme starts at the appraisal. WSTF needs to understand the utilities' interest in the projects and establish whether it is pro-poor and demand driven. • Simplified appraisal procedures are needed to make the appraisal efficient and as little time consuming as possible. This allows for more time for implementation of the project. • The appraisal tool needs to focus specifically on DTF to ensure demand is there and key criteria met. Furthermore, future competition with planned conventional treatment plants must be analysed. • It is necessary to check and verify if all the resource requirements are met: e.g. land availability and suitability (terrain and soil conditions), social acceptance and market potential (in terms of toilets and exhauster services), exhausters, qualified, sufficient and committed staff. The WSPs and County governments MUST provide written commitment on the availability of this resources. • Appraisal is required after every phase to confirm demand • Public Health Officers at National and County Level should recommend the projects at County level to avoid delays.
3. Project Implementation	
a. Social Marketing	<ul style="list-style-type: none"> • Sanitation marketing unlocks demand for sanitation. • It takes time to spark demand. There is always a wait and see scenario in many cases (people are sceptical until they see the first incentives being paid).

3. Project Implementation (contd.)	
a. Social Marketing (contd.)	<ul style="list-style-type: none"> • Social marketing activities are needed for all phases to sustain demand: The budget should accommodate these activities. • Seasons and other socio-economic activities e.g. planting, harvesting, rainy, dry season, school opening, Christmas, Eid affect demand. It is thus necessary to properly time the toilet sales. • At least one animator needs to be trained – to support the Technical Manager in carrying out technical assessments during toilet construction to avoid poor construction that leads to non-payment of PCI. • For social marketing, management of UBSUP phases is crucial, as funding delays cause long breaks between social animators’ short contracts. This leads to losing trained social animators, inflicting additional costs, due to new training needs. • It has been proven that marketing of UDDT is impossible in the Kenyan LIA. Despite robust marketing, less than 2% of more than 9000 toilets constructed under the programme are UDDTs. • UDDT should not be promoted any more due to the unsuitability of the technology in the Kenyan urban context.
b. Toilet	<ul style="list-style-type: none"> • It should be emphasized (to WSPs and Artisans) that the toilet construction MUST not deviate from the standard drawings provided and all technical details MUST be adhered to (no modifications allowed). • UDDT technology is not viable for implementation in urban LIA. • Toilet construction should never be done by contractors – with the principles of economies of scale too many toilets may be constructed for few users. • Prompt payment of PCI affects demand positively.
c. Emptying and Transportation	<ul style="list-style-type: none"> • Different interventions apply for different areas. These interventions vary in resource requirements and thus PCI needs to be harmonized with technology., e.g. Septic tanks should be encouraged and a revision of the PCI to partially compensate for the high costs as compared to toilets connected to sewer system should be considered. • Landlords should be sensitized that the long period it takes to empty a properly constructed septic tanks as compared to conservancy tanks leads to long-term savings in terms of emptying costs. • To discourage illegal dumping, it must be ensured that the decentralized treatment facility (DTF) is in the vicinity to the project areas in which the toilets are being constructed • Implementation of emptying and transport system for UDDT (SaniGo + Sanitation team) requires too much effort and resources for very little impact.

3. Project Implementation (contd.)	
d. Emptying and Transportation (contd.)	<ul style="list-style-type: none"> • Agreements that will facilitate monitoring and quality (of sludge) assurance must be developed between the WSP and the private exhauster operators who will use the DTF. Incentives in form of trainings, free equipment and business opportunities must be encouraged to foster collaboration of the private exhausters.
e. DTF Treatment	<ul style="list-style-type: none"> • There is always need for community sensitization before a DTF is constructed. Many residents associate DTFs with waste stabilization ponds, which are known for odour and thus believe that they should be sited very far away from settlements. • Access to DTFs needs to be ensured. Trucks need to be able to reach the DTF even during rainy season. • The project implementation requires to be supervised closely and managed by the supervision team. Poor contract management leads to variations overshooting the amount provided for in contingencies. • There is need to have designs for different DTF capacities that can cater for the various demand requirements in different LIAs in different towns.
i. UBSUP DTF	<ul style="list-style-type: none"> • Strict construction management by the WSP is required during the DTF construction phase to avoid variation and delays • There is need for enhanced knowledge transfer to the WSPs technical team to enable them adequately to supervise the construction of the sanitation infrastructure. This will improve the quality of infrastructure due to continuous supervision by the WSPs and in addition reduce the requirement of frequent WSTF team visits. • Realistic construction/implementation timeline needs to be established to allow for accurate contract periods. • WSTF should enforce the use of given project management templates to document the construction processes. This will control variations. • The choice of contractor matters (during evaluation of contractors by the utilities). An experienced contractor is more likely to deliver the works than an inexperienced contractor. • The designs were not finalized before up-scaling, which led to variations and delays in implementation. • Continuous upgrading of the concept is needed to cater for various environments and based on experiences. To avoid miscommunication, it must be clear to WSPs that only the WSTF Manager will communicate recommendations with costs implications. In the past, some WSPs understood recommendations from Technical UBSUP teams as approval for variations. • Contractors who did excellent work are to be given a certificate of good performance to encourage WSPs to engage them. This can also qualify them for future DTF contracts.

3. Project Implementation (contd.)	
i. UBSUP DTF (contd.)	<ul style="list-style-type: none"> Experienced contractor is a crucial element to increase the chance of a successful DTF implementation. Experience in building a DTF should be added as one of the main criteria for the evaluation of the bidders. DTFs should never be constructed by the WSPs, but rather a qualified contractor. - not a must, but should be added as evaluation criteria during the tender. Design is limiting in some cases (e.g. slope) – different technology options needed (see DTF Enpura Hybrid).
ii. DTF Enpura Hybrid	<ul style="list-style-type: none"> New technologies should be considered, where the UBSUP DTF technology cannot be implemented, e.g. unsuitable terrain, geology, space. The approval process for new technologies within WSTF needs to be streamlined and clear, to ensure timely decision making, when UBSUP DTF is not viable. There needs to be guidelines and processes on issues, e.g. are flatlands generally approved?
f. Re-use	<ul style="list-style-type: none"> DTF sludge is not reused, as there is little experience from the DTFs. The cooperation with other experienced players in the sanitation sector (public, private and NGOs) should be considered to address re-use issues.
4. Operation and Business Model	
a. Social Marketing	<ul style="list-style-type: none"> Social marketers should continuously sensitize the clients on hygiene and cross-cutting issues to ensure long-term improvements in hygiene practices in the area. Marketers should be there for all phases of programme implementation. This will improve record keeping and monitoring of the toilets after construction. WSPs do not have man power dedicated to UBSUP to carry out these activities. Social marketing techniques should be applied in areas with negative community perceptions. Social Animators salary should be reviewed (as WSPs deduct taxes). Social Marketing during operation should be taken up by WSPs to continuously sensitize the community and encourage investments in toilets without PCI.
b. Toilet	<ul style="list-style-type: none"> The usage of toilets should be monitored by social animators for a few weeks to avoid long-term misuse. Handwashing needs to be encouraged and enforced by Social Animators, WSPs and PHOs after construction.
c. Emptying and Transportation	<ul style="list-style-type: none"> There should be an identified means of emptying and transporting the waste to the treatment sites for every technology introduced before implementation.

4. Operation and Business Model (contd.)	
d.	<ul style="list-style-type: none"> • The concept of Sanitation Teams has not proven to be reliable. Where necessary, it should be considered that existing UDDTs are emptied by the WSP. UBSUP will not promote new UDDTs and Sanitation Teams. • To ensure emptying services, Counties should be encouraged to assist WSPs with the procurement of exhausters. An existing exhauster, an MoU with private exhausters OR an official agreement with the County/WSB for future procurement of an exhauster must be a prerequisite for DTF implementation. • In-house exhausters are an additional income opportunity for WSPs and should be promoted.
e. DTF Treatment	<ul style="list-style-type: none"> • A working marketing strategy of the DTF after its completion is necessary to target private exhauster operators, landlords and households. • To ensure that sludge is always taken to the treatment facility, WSPs and WSTF must put measures in place, e.g. through County and PHO engagement. • WASREB must be involved in the setting of the tariff system to ensure pro-poor service delivery. • Ensure that treatment capacity is respected to obtain optimal treatment efficiency.
i. UBUSP DTF	<ul style="list-style-type: none"> • In areas where demand is lower than the capacity of the DTF, the treatment process is greatly affected by the intermittent recharge of sludge/wastewater. The WSTF must thus ensure that there is an existing demand in the application/appraisal stage (e.g. number of exhauster trucks in the area). • Conversely, in areas with demand higher than the capacity of the plant, the treatment process is choked and cannot deliver the quality of effluent required. Here, scheduling of incoming exhauster loads is crucial.
ii. DTF Enpura Hybrid	<ul style="list-style-type: none"> • The Enpura Hybrid technology has greater business opportunity because of its capacity, especially in areas with high demand. • it is yet to be implemented. It is foreseen that a well-defined maintenance contract will be key to its success. • Marketing will be important to ensure full capacity utilization of the DTF Enpura Hybrid.
f. Re-use	<ul style="list-style-type: none"> • The market for by-products has not been identified in the various WSPs, where the DTFs have been constructed – a business model for the by-products needs to be developed in advance and tailored to the particular location of the DTF. • WSPs should be encouraged to design ways to engage private firms in the projects by signing MoUs to utilize their innovations.

4. Operation and Business Model (contd.)	
f. General	<ul style="list-style-type: none"> • Attractive and viable business models are key to the success of sanitation interventions.
5. Monitoring and Evaluation	
a. Progress Monitoring	<ul style="list-style-type: none"> • The implementation progress should not be monitored sporadically, but periodically and continuously over a set period of time. This ensures continuous monitoring and allows for immediate intervention when necessary.
i. Toilets	<ul style="list-style-type: none"> • During the implementation of toilets and septic tanks infrastructure, the construction quality must be checked at different levels of construction (2 or 3 milestones) to ensure that technical standards are met. Checking should be done by the WSP with the back-up of the social animators who serve as sentinel on the ground (raising the flag before the damages are irrecoverable). • CRMs need to be facilitated to monitor the construction progress through a door-to-door approach at least once in a phase to make sure that all toilets meet the standard and landlords can receive PCI.
i. DTF	<ul style="list-style-type: none"> • Scheduled joint (WSTF-WSP-Contractor) site inspections at various stages of the DTF implementation ensure good quality of work. • Intervention of the WSTF should be minimized as much as possible to ensure the project ownership by the WSP. However, key milestones during construction, determine the visits by the WSTF and must be communicated in due time by the WSP. The purpose of the visits is to check at the progress, the quality of work and give guidance when necessary. There is a need to clearly define the milestones and red flags.
b. Operations Monitoring	
i. Toilets	<ul style="list-style-type: none"> • The operations monitoring approach of the upscaling programmes should be developed prior to completion in order to establish adequate monitoring procedures for such a high number of toilets funded. • CRMs and WSTF-staff should monitor a sample of constructed toilets.
ii. DTF	<ul style="list-style-type: none"> • DTF effluent needs to be monitored and tested regularly during operations to avoid pollution. • During trainings and in the early phase of DTF operation, WSTF and WSPs should build the capacity of DTF operators to effectively monitor and test the effluent. • Proper and regular record keeping is essential for monitoring the DTF operation and enables the WSP to react rapidly and efficiently in case of an issue or hazard.

5. Monitoring and Evaluation (contd.)	
c. General	<ul style="list-style-type: none"> • Real time GIS Systems are the best solution for monitoring implementation and post implementation (Operation and maintenance) of sanitation infrastructure.
6. Design, Technical Drawings and BoQ	
a. Toilets	<ul style="list-style-type: none"> • The toilet structure should include handwashing, to ensure it will be installed. • The technical drawings and BoQ (hard and soft copies) must be provided to the WSP and the social animators. They must be explained thoroughly (e.g. during the Social Animator training), so that they can be able to explain them to the artisans. • The WSP must make it a requirement that all artisans must collect the technical drawings and BoQ (with maybe a stamp of the WSP) before starting the construction of toilet/septic tanks. This will increase the quality of works and reduce the risk of non-payment of PCI due to sub-standard construction.
a. DTF	<ul style="list-style-type: none"> • The Vertical Flow Constructed Wetland (VFCW) has proven to be challenging for the contractors to construct. It is required to closely monitor the construction and guide the contractor accordingly. • It needs to be emphasized that WSPs must ensure documentation and seek consent from WSTF for any modifications in the DTF design that may result in variation. • To ensure quality of works, technical drawings and BoQ are part of the tender documents and must be thoroughly explained to the WSP by the WSTF during the construction training. • Continuous improvement in the design are expected, therefore feedback from the WSPs and the contractors are to be collected by the WSTF on the ground. An updated version of both sets of documents (design and BoQ) is likely to be produced before each call.
7. Trainings	
a. Application	<p>The introductory/proposal writing workshop:</p> <ul style="list-style-type: none"> • The workshop is important to ensure high quality applications from WSPs. • Prior to the workshop, WSTF should emphasise that WSPs must send the right people. WSPs should send the people who will be filling out the application. • WSTF should emphasize that the applications need to be filled completely, as some “routinized” WSPs are not accurate in filling it in detail. • During the introductory workshop, the WSTF needs to ensure that the WSPs are fully aware of all aspects and the complexity of UBSUP – it needs to be clear that there needs to be land and exhausters at the application stage (see above).

7. Trainings (contd.)	
b. Social Marketing	<ul style="list-style-type: none"> • The Social Animators have to be trained before the artisans are brought on board, so that the Social Animators will be the “experts” and will know who will be the artisans. Also, artisans will know who to ask for guidance once working in the area. • Social marketing trainings should emphasise the importance of the personal attitude of the marketers to ensure customer service. • Social animators often lack technical understanding of toilet construction. The training should incorporate a small session on the technical aspect of the toilets with a short introduction on DTF (for them to understand the full sanitation value chain) and a crash course on toilet construction. • Although monitoring the construction of toilets is the responsibility of the WSP, the technically trained social animators being permanently on the ground can act as “watchdog”. They will communicate with the artisan, the landlord or the WSP when something goes wrong, in order to avoid mistakes that would lead to the construction of unfit toilets that would not receive the PCI.
b. Toilet	<ul style="list-style-type: none"> • The training of artisans turned out to be inefficient (most of the trained artisans did not construct UBSUP toilets). Trainings on toilet construction (and monitoring) should be given to the WSP who will in turn train (on the spot) and monitor the artisans involved in the project. • CRMs need to be trained on the standard size and quality of toilets. This ensures better monitoring of the projects. • It is important that the correct drawings are availed to the artisans after every update.
c. Emptying and Transportation	<ul style="list-style-type: none"> • If there are UDDTs and no Sanitation team, training on emptying, treatment and reuse/disposal should be given to the landlord or users of the UDDT. • To increase the acceptance of the project a training/workshop for private exhaustor driver should be considered. The following topics can be included: introduction to UBSUP, good operation practices, health and safety. (This should be included in training budget)
d. DTF Treatment	
i. DTF	<ul style="list-style-type: none"> • Training the contractor and the WSPs helps a lot in making it easier for them to interpret drawings and refreshing on best construction practices. • Training on operation and maintenance and the business model is required prior to the inoculation phase. • Trainings must be given to a small audience (1 to 3 WSP at a time) to increase the impact of the training sessions.

7. Training (contd.)	
i. UBSUP DTF (contd.)	<ul style="list-style-type: none"> • The training of the WSP project team on contract management should be done before tendering to ensure that only qualified contractors are awarded • The training of the WSP project team on construction supervision and monitoring should be done before the handing over of the site to the contractor.
ii. DTF Enpura Hybrid	<ul style="list-style-type: none"> • Training on operation and maintenance is required. • Need for the private partner to transfer skills to WSPs during maintenance contract period.
e. General	<ul style="list-style-type: none"> • It is recommendable and useful to schedule feedback trainings at various milestones, e.g. when a project is at 50% to allow for corrective actions.
8. Other	
<ul style="list-style-type: none"> • Through national sector structures upscaling of sanitation is possible in Kenya (through WSTF). 	
<ul style="list-style-type: none"> • Before implementing a call for proposals there is need to negotiate the donor conditions better. In the past, donor conditions, such as funding thresholds and ceilings have dominated and delayed UBSUP's implementation. 	
<ul style="list-style-type: none"> • In many cases, the technical capacity of WSPs is constrained (personnel and understanding of UBSUP). Priority is often given to other maintenance and installation work related to water supply. UBSUP has unrecognized "low hanging fruits" for collection of revenue for WSPs – it is an attractive project in terms of value, but it also provides long-term revenue. WSTF needs to highlight the financial benefits for the WSPs when they engage in the sanitation intervention (UBSUP). 	
<ul style="list-style-type: none"> • There is always need for feedback from the WSPs on the improvements required for the succeeding project phases. Hence, feedback procedures need to be put in place. 	
<ul style="list-style-type: none"> • New toilets spark further developments on the plots: e.g. improved quality of housing, fence, compound. 	
<ul style="list-style-type: none"> • UBSUP offers solutions for on-site sanitation, however where applicable it sparks further investments by WSPs: e.g. improvement of existing sewer lines. 	
<ul style="list-style-type: none"> • Concept development: Testing should happen before piloting and it should remain at a small scale, e.g. 3 toilets instead of 20. • Beneficiaries should not get a free toilet in testing phase, as this distorts demand and willingness to invest in the toilets before receiving PCI. 	
<ul style="list-style-type: none"> • When piloting a project, all technologies should be introduced at the same time, to draw conclusions on their attractiveness. (UBSUP pilot first introduced only UDDTs, which were not accepted and caused problems later-on. Flush toilets were introduced later) 	