Investing in effective technologies for sustainable WASH services

A wide range of conventional and innovative water, sanitation and hygiene (WASH) technologies are readily available to implementing sector agencies and communities worldwide. Affordable solutions for achieving sustainable WASH services are within reach, yet few have been mainstreamed and/or scaled up successfully.

Despite the failure of various conventional WASH technologies to deliver a sustainable service, the sector has been hesitant about adopting innovative technologies. In response to this, WASHTech has developed and tested a methodological framework that envisages helping the sector identify technologies that work and may be brought to scale.

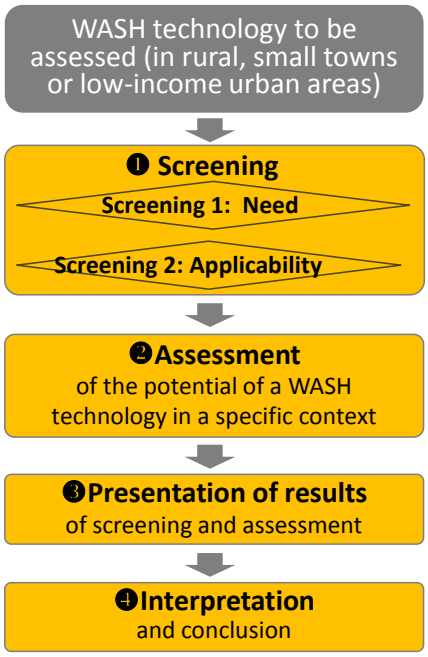
WASHTech's Technology Applicability Framework (TAF) functions in two ways within a given context: a) it identifies a sustainable and applicable WASH technology from those that are not; and b) it reveals risks and supportive factors that influence the successful introduction or roll out of a technology.

The TAF is a useful decision making tool for sector stakeholders in national and local governments, development partners, private sector enterprises, NGOs, Research & Development institutions and universities.

The TAF process in four steps

Utilising the TAF requires undertaking a transparent step-wise process. Both quantitative and qualitative data are gathered from the national, local and community levels. Data and information undergo a process of validation in a workshop involving all relevant stakeholders.

The TAF is carried out in four steps. To help users work with the TAF, an instruction manual is forthcoming. The manual is expected to provide clear guidance in applying the methodological framework. The step-wise process is presented below.

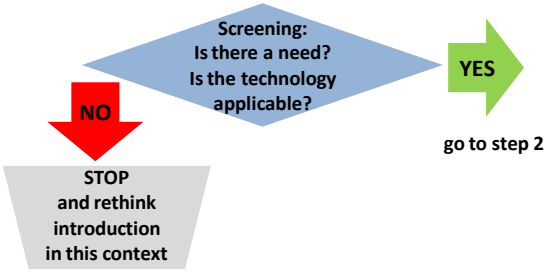


Steps in TAF assessment

Step 1: Screening

Goal: To identify WASH technologies found to be suitable in meeting users' needs within a specified context.

During the screening phase a number of questions are asked on what users need or expect, and whether the WASH technology being validated meets basic requirements, such as minimum rainfall in the region required for rainwater harvesting.



Step 2: Assessment

Goal: To assess comprehensively the applicability and sustainability of a WASH technology within a specified context.

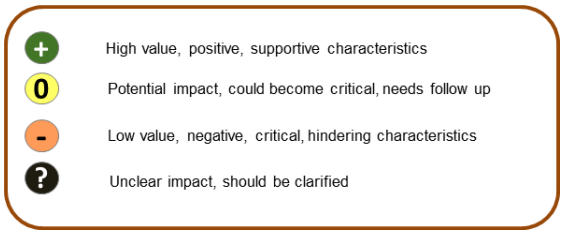
During this phase, TAF users work with **18 indicators** organised according to six sustainability dimensions and three stakeholder perspectives. The six sustainability dimensions are shown below:

The three stakeholder perspectives sought by TAF are:

- User/Buyer
- Producer/Provider
- Regulator/Investor/Facilitator

The analysis of a specific technology places great emphasis on perspectives and roles assigned to/ played by key actors. Engagement with key actors is also particularly useful in facilitating a technology's introduction process; actors become more cognisant of their roles, and their support is mobilised. For each indicator a specific questionnaire has been developed.

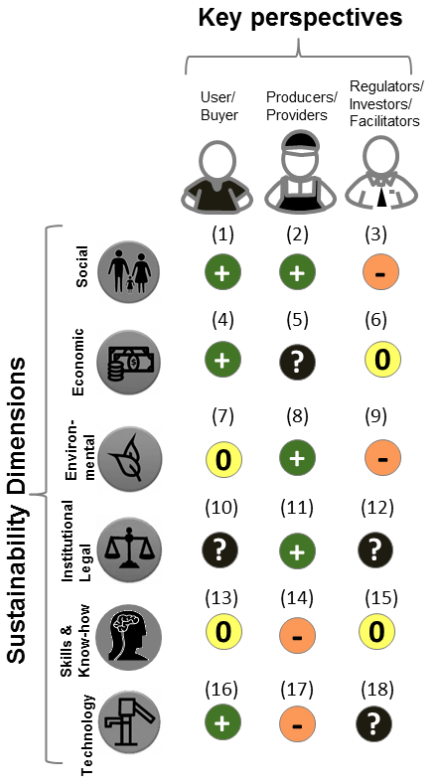
Each indicator is designated a score/ symbol discussed and agreed upon by representatives of all three perspective groups in an assessment workshop. The scoring resembles a traffic light system; for information that is missing at the time of scoring, the symbol (?) is used.



Step 3: Presentation of results

Goal: To present results of the screening and assessment processes. The results of the screening (step 1) are consolidated and compiled in a screening report.

The scores for all 18 indicators given during the assessment (step 2) are presented in a graphic profile. Visually presenting the results of data gathered facilitates easy interpretation of the findings, and discussion on ways forward. For example, with areas of risk defined (red button with negative symbol), discussions on developing mitigation measures are structured better. Or, closely examining how operations and maintenance fare in all sustainability dimensions is easily facilitated. An example of a TAF graphic profile is shown below.



Step 4: Interpretation

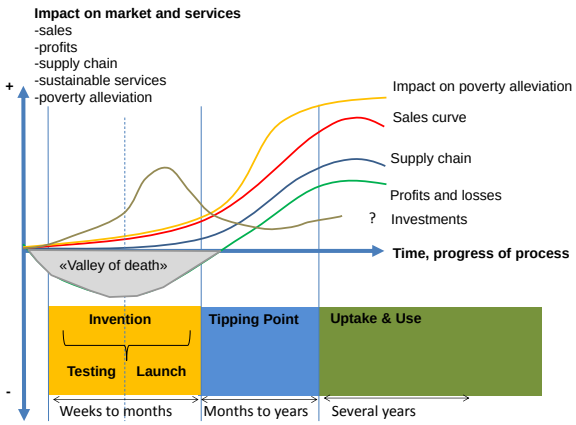
Goal: To interpret the results and reach consensus on the applicability of a technology within a given context, and develop appropriate introduction mechanisms for adoption and/ or scaling up.

During this stage, the TAF validation workshop, attended by a broad range of key stakeholders, is expected to result in the following: a) arrive at a higher level of understanding on sectoral issues; and b) mobilise support in taking forward the results of the technology assessed.

Effective uptake of promising WASH technologies through the Technology Introduction Process (TIP)

Strengthening technology introduction processes is key in ensuring sustainable services delivery. In order to achieve the successful uptake of a new technology, other aspects will need be considered, e.g., helping the sector adopt innovations; increasing accountability and transparency within the sector's activities; introducing environmentally-friendly technologies; and planning towards achieving equity and social inclusion.

The introduction of new WASH technologies is therefore complex, resource-intensive and time-consuming. During the early stages of introduction, high financial resource injections are required. The early stages of piloting a technology to achieving full uptake can take several years.



Few countries undergo formal technology validation processes or introduction procedures. Often decisions on, and assessments of, technology options do not follow transparent processes. All actors relevant to the introduction of a technology need to know how and when to get involved in the process so that invested resources are allocated in the most efficient manner.

Obviously the involvement of the private sector and the manufacturer/ supplier of a specific technology is key to achieving quality production, delivery and services. To attract investors/ producers into the WASH sector, the sector needs to build investors' confidence. One way is through institutionalising clear guidelines and rules, and making the validation and introduction process more transparent.

As with any other project, technology introduction should be planned and managed professionally. The introduction process should also include the sharing of experiences, success stories, and failures to strengthen learning on the process.

> "If you want to go fast, go alone.
> If you want to go far, go TOGETHER".
>
> (African proverb)

The TIP Guide: a work in progress

The Technology Introduction Process (TIP) Guide is a management tool that seeks to support the sector in introducing technology options in rural and urban areas. The following pages provide a glimpse into the framework of the TIP Guide currently being developed by WASHTech.

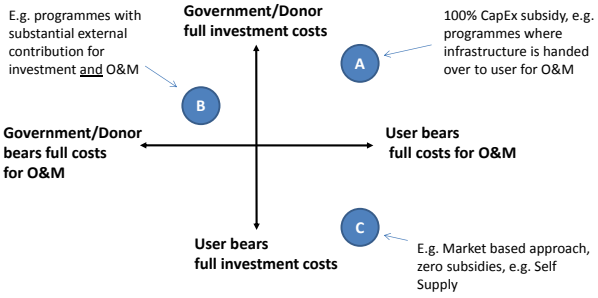
In the TIP, the uptake of WASH technologies is proposed to undergo three phases, each having their own characteristics with respect to the level of investments needed, revenue, and impacts. The three phases are currently referred to as follows:

- Invention, with Sub-phases "Testing" and "Launch"
- Tipping Point
- Uptake and Use

A technology prototype for testing/ piloting is envisaged to take place during the **invention** phase. The invention phase is divided into two sub-phases: *testing* and *launch*. During piloting, a feasibility study that examines the viability of the prototype takes place; when identified as viable, the prototype is then launched. Launching is proposed to encompass activities linked to building up the production capacity and a viable supply chain, and undertaking promotional and training activities (e.g., capacity strengthening on after-sales service, operation and maintenance). In the second phase of the process—**tipping point**—uptake of the technology gradually accelerates. Once the third phase—**uptake and use**—is reached, it is assumed that the technology is successful and can contribute to sustainable WASH services at a large scale.

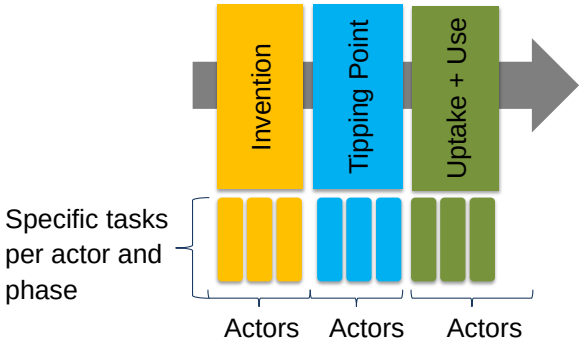
In each of the phases, various actors are assumed to carry out specific tasks to support the uptake process. WASHTech's vision is to implement a participatory process of defining and allocating tasks across the various actors involved, resulting in a cohesive planning and coordination framework. This collective undertaking will also be informed by the cost-investment model chosen for the technological introduction process.

The cost-investment model is an important financial framework within the technology introduction process in that it captures the level of subsidy—thereby influencing the (lasting) performance of the technology; e.g., coverage of capital investment costs (CapEx), purchasing power for minor maintenance (OpEx), etc.



In all three phases of the technology introduction process described above, the roles of actors may change between phases. Some actors might even take on several roles in one phase, e.g., the government as regulator may also have a role to play in the innovation process, or as investor.

Technology Introduction Process



The scope of tasks undertaken within a technology introduction process is foreseen to be very broad. The tasks may include activities on a strategic level, e.g., policy development related to the technology, or on a technical level. Some tasks may also relate to the management of an introduction process. To date, differentiated actor tasks for cost-investment models A (100% subsidy for investment) and C (no subsidy for investment) have already been identified by WASHTech. Within WASHTech, there is also an ambition to outline actor tasks suitable for other cost-investment models.

Similar to the TAF, TIP application follows a step-wise process, is managed as a project, and built on a series of meetings/workshops. Ideally, the TIP is used in conjunction with the TAF, ensuring that TAF results are considered when designing a technology introduction process.

The TAF has been tested together with sector stakeholders in Burkina Faso, Ghana, and Uganda. Currently the TIP is undergoing a validation process in all three countries. The final set of instructive materials is due in the autumn of 2013.

The WASHTech Consortium consists of the following organisations: IRC International Water and Sanitation Centre, WaterAid UK, WaterAid Uganda, WaterAid Ghana, WaterAid Burkina Faso, TREND, KNUST, WSA, Cranfield University, NETWAS Uganda and Skat Foundation.

This document has been produced by Skat (March 2013) and reviewed by IRC. For more information, visit: http://washtechafrica.wordpress.com; or contact *André Olschewski (Skat Foundation)* andre.olschewski@skat.ch