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INNOVATION, ADAPTATION AND ENGAGEMENT IN A CHANGING WORLD

**A household water treatment implementation framework:  
lessons learned from the diversity  
of implementation worldwide**

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*Household water treatment (HWT), the use of simple accessible technologies for treating water within the home, is gaining momentum globally. As estimates of worldwide users top 1.1 billion and efforts focus on scaling up existing HWT programs, there is a need to document lessons learned from HWT implementation to date and disseminate them among new and existing implementers. CAWST's review of current implementation practices coupled with years of experience working with implementers worldwide has demonstrated that while no one standard model exists, successful program implementation shares common factors. These factors have been developed into an implementation guidance framework, focused on five key areas; creating demand, ensuring supply, monitoring and improving implementation, building human capacity, and sustained financing.*

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Household water treatment (HWT), the use of simple accessible technologies for treating water within the home, is gaining momentum globally. Increasing numbers of organizations are initiating new HWT programs while existing programs look to further expand their impact. As estimates of worldwide users top 1.1 billion (Rosa and Clasen, 2010) and efforts focus on scaling up, there is a need to document lessons learnt from HWT implementation and use them to formulate practical guidance for implementers.

CAWST, the Centre for Affordable Water and Sanitation Technology, provides technical training, consulting, and acts as a centre of expertise in water and sanitation for the poor in developing countries. Since 2001, CAWST's client network has worked in over 60 countries and helped 3.6 million of the most vulnerable people get access to better water and sanitation.

A CAWST review of current implementation practices coupled with years of experience working with over 350 implementers worldwide has shown that HWT implementation is carried out by a wide variety of organizations, using different HWT options and a diverse range of programs, from emergency response to long term development. While there is no one standard implementation model, CAWST has identified common factors in successful HWT program implementation and proposes the following guidance framework for new and existing implementers.

**The implementation guidance framework**

The main components of the framework are:

- 1. Creating and sustaining demand**
- 2. Supplying products and services** to meet the demand
- 3. Monitoring and continuous improvement** of program implementation

The framework also integrates two support components which are essential for the successful planning and implementation of the program elements:

4. Building human capacity
5. Ensuring sustained program **financing**

The following sections discuss each of these framework elements in more detail.

### 1. Creating and sustaining demand

Creating demand is an essential foundation for long term technology adoption and behaviour change since success relies on households wanting and valuing the changes offered by a HWT program.

The challenge of creating and sustaining demand is significant for implementers, requiring time, sustained investment, and a range of strategies. Many successful implementers use the following steps:

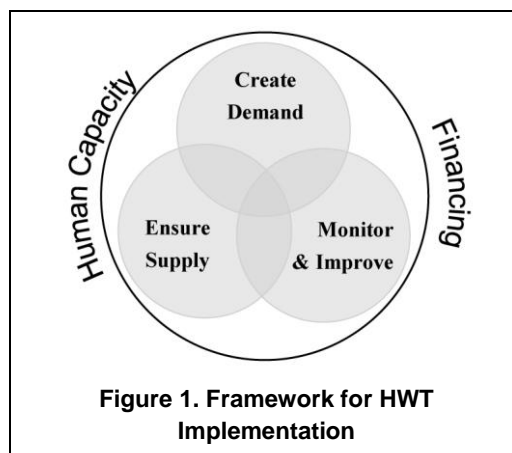


Figure 1. Framework for HWT Implementation

- |                       |  |
|-----------------------|--|
| 1. Plan               | <ul style="list-style-type: none"> <li>• Identify an appropriate target population</li> <li>• Select appropriate and feasible HWT options</li> </ul>   |
| 2. Initiate and Pilot | <ul style="list-style-type: none"> <li>• Increase awareness of HWT as a solution</li> <li>• Use demonstration projects to demonstrate benefits</li> <li>• Engage government agencies to aid credibility</li> </ul> |
| 3. Sustain and Expand | <ul style="list-style-type: none"> <li>• Provide positive reinforcement to households</li> <li>• Use existing successes stories as motivators</li> </ul>   |

The piloting phase is especially important. Many organizations gain significant benefit from first implementing a small pilot project to establish their processes, learn from experience, get user feedback and ensure quality of service before scaling up.

#### Case Study: demand creation - Thirst-Aid International, Myanmar

Thirst-Aid has been working to promote and implement ceramic filters in Myanmar since 2004. Their strategy to create demand for safe drinking water is to promote education and knowledge as investment capital. Thirst-Aid staff conduct awareness-raising and education activities that target a variety of audiences, including women's groups, schools, monasteries, orphanages, community based organizations (CBOs) and non-governmental organizations (NGOs) using a variety of education tools and communication methods, tested and tailored to the specific audience. Government has also been included in the process with their approval given to materials before use. The staff meets and follows up with these various groups as often as necessary to provide support and reinforcement. Thirst-Aid encourages community buy-in by issuing *Certificates of Knowledge* upon successful completion of their educational program. These certificates serve as legal tender that can be used to purchase HWT solutions.

### 2. Supplying products and services

HWT programs target individual users and require that each individual is trained and supported on product use and maintenance. As such, programs require significant focus on the supply of services (the “software” component) as well as the supply of products (the “hardware” component”) to ensure successful adoption and proper, consistent, long term use.

Services, durable products and consumable products all have distinct characteristics and therefore require different supply considerations, and often separate supply chains. Key components to consider for each are given in Table 1.

Table 1. Supply chain considerations		
Consumable Products	Durable Products	Services
<ul style="list-style-type: none"> <li>• Need to be constantly replenished</li> <li>• Has little to no capital costs, however has regular, recurrent costs</li> <li>• Should be self-sustaining without subsidies</li> <li>• Implementation is similar to</li> </ul>	<ul style="list-style-type: none"> <li>• One-time or infrequent purchase</li> <li>• Has relatively high capital costs, but minimal recurrent costs</li> <li>• Initial capital costs may be subsidized</li> <li>• Implementation is similar to community development or</li> </ul>	<ul style="list-style-type: none"> <li>• Needs to be constant and available in the long term</li> <li>• Requires substantial initial investment but should become self-sustaining</li> <li>• Often requires initial subsidy until</li> </ul>

<p>commercial products</p> <ul style="list-style-type: none"> <li>• Lends itself to private sector implementation</li> </ul>	<p>infrastructure programs</p> <ul style="list-style-type: none"> <li>• Lends itself to NGO and government implementation</li> </ul>	<p>demand is created</p> <ul style="list-style-type: none"> <li>• Can lend itself to either commercial or NGO and government implementation depending on the products/ services being offered</li> </ul>
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While there are successful stories of large scale supply of HWT products, many organizations covered by CAWST’s review rely on localized supply. Supply chains which use locally available resources, supply routes, fabrication and people (for labour, education and follow up) are often used as they can:

- Create local knowledge skills which empower beneficiaries to meet their own needs
- Aid demand creation and sustainable supply
- Allow more gradual expansion, since implementation can be limited to a predefined area
- Reach areas which are difficult to access via existing commercial means

### 3. Monitoring and continuous improvement

Monitoring is essential for sustaining, improving and expanding HWT programs. Successful monitoring commonly focuses on:

1. **The process:** Is the program on schedule? Is everything getting done correctly/to the right standard? Do we need to change anything?
2. **The end product:** Is it effective? Is the water quality improved? To what extent?
3. **The impacts:** Are people happy? Are people experiencing health benefits, such as reduced diarrhoea? Have we achieved other benefits? Will they recommend the solution to their neighbours?

Good monitoring systems share the following characteristics:

- Has a clearly defined purpose
- Collects specific information on a small but well-defined set of indicators
- Fully integrated into the program activities
- Simple and within the means of the organization
- Analyzed on a regular schedule to determine lessons learned
- Focused on factors within complete control of the program
- Results in program modifications and improvements

### 4. Human capacities required for implementation

Commonly there are several key, interconnected roles in HWT implementation, as detailed in Figure 2.

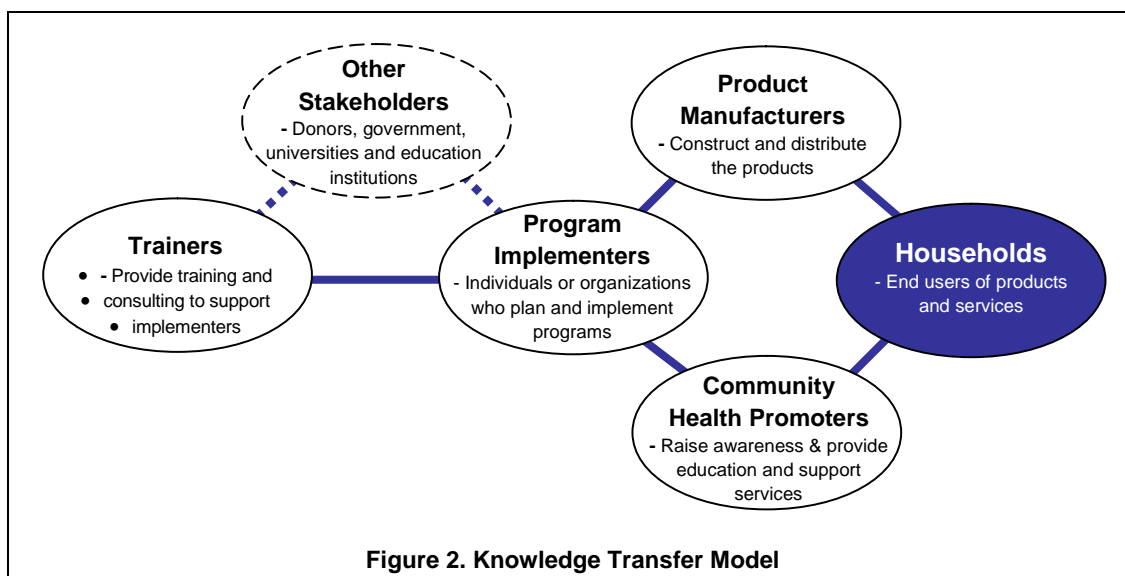


Figure 2. Knowledge Transfer Model

In order for the key players to function as a whole and implement successful programs, there is a need to build competency and capacity at all levels. The smooth transfer of knowledge from one role to another is

also vital, whether these roles are within one organization or more commonly across multiple organizations. This occurs best when:

- All groups contribute to defining program goals and objectives
- All groups agree on and understand their roles and responsibilities
- The needs of each group are understood by others (information, resources and support)
- Communication channels remain continually open
- Formal and informal systems and tools are in place to aid knowledge transfer
- Communication and knowledge transfer occurs in both directions
- Plans and tools are available for building competency and capacity

## 5. Program financing

While there are no fixed models for program financing there are several lessons that have been learned through HWT implementation. These include:

- Users need to pay for their own long term operation and maintenance whereas initial capital costs can (and in some cases should) be subsidized; technical options should be chosen accordingly
- Raising awareness, education and capacity building for HWT are almost always a public sector activity, and highly subsidized
- Durable products often need to be subsidized to enable access by the poorest
- Beneficiaries need to invest at some level, whether in kind or small financial contributions
- Given the numbers of independent organizations operating at varying scales, the success of scaling up HWT will rely on successfully providing varying amounts of funding to numerous implementers, including the often neglected smaller implementers

## Conclusion

By taking time to carefully considering the five key components of this framework at all program stages, including product selection, planning, implementation and evaluation, new and existing implementers will be able to initiate, improve and expand their HWT programs, providing tangible benefits to their target populations.

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