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# **Strategic Consultation on Household Water Treatment and Safe Storage**

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# Strategic Consultation on Household Water Treatment and Safe Storage

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## 1. Background

The treatment and safe storage of drinking-water at the household level (household water treatment and safe storage - HWTS) has significant potential to reduce the burden of diarrhoeal disease and increase child survival. HWTS addresses a real need in conditions where people lack access to improved sources of drinking-water (globally an estimated 884 million people<sup>1</sup>), where water quality is jeopardized at the point of use by poor hygiene or where storage is necessary because of the unreliability of both improved and unimproved drinking-water supplies. Household water treatment will become increasingly important in water-scarce situations. The importance of safe storage will similarly increase in parts of the world where reliance on rainwater harvesting expands. Both issues are also critically important in the context of emergencies and humanitarian crises.

In order to facilitate advocacy and action regarding HWTS among a diverse group of stakeholders, the WHO initiated the International Network on HWTS (the "Network") in 2003. Since the initial creation there has been a significant rise in HWTS awareness, emergence of new technologies, and a growing body of research documenting the health benefits of HWTS. This research has also raised important questions regarding consistent use, long-term sustainability and scalability of HWTS. Bearing these issues in mind, WHO facilitated a consultation with a group of HWTS experts in order to discuss these challenges and inform the Phase II strategy of the Network.

The meeting was attended by a total of 18 participants from eight countries. Participants represented academia, international organizations, the private sector, government and donor agencies. The List of Participants is presented in Annex 1. The approved agenda and programme of work are presented in Annex 2.

## 2. Objectives

The objectives of the consultation were as follows:

1. Present and discuss evidence regarding HWTS
  - Emerging evidence on outcomes and impacts
  - Discuss a research agenda to address existing data gaps
2. Strategize on how to improve sustainability and scale of implementation
  - Role of WHO, UNICEF, governments and other key players
  - Situating HWTS within the broader context of water, sanitation, and health
3. Develop Phase II Network strategy and major areas of Network focus
  - Network's goals and key areas of work for 2011-2016
  - Network implementation activities
  - Network secretariat and management

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<sup>1</sup> WHO/UNICEF (2010). Progress on sanitation and drinking water 2010 update. Geneva: World Health Organization, New York: United Nations Children's Fund.

### 3. Proceedings

#### 3.1 Consultation objectives and overview of WHO water and sanitation activities

*Robert Bos, WHO*

Robert Bos, Coordinator, Water, Sanitation, Hygiene and Health (WSH) at WHO, opened the Consultation with a round of introductions and then outlined its major objectives. He emphasized that the event was a WHO Consultation as opposed to regular a Network meeting, with the aim of obtaining broader strategic inputs with regards to HWTS and the Network. He stated that UNICEF and WHO would use the outputs gained to present a new Network Strategy to donors in order to facilitate achieving key objectives relating to HWTS. The first day would consist of presentations, reviews and discussions of key HWTS issues while the second day would focus on how WHO and the Network could address the priority issues identified.

#### **Overview of WHO WSH (Water, Sanitation, Health and Hygiene) and Network activities**

Robert Bos provided an overview of the main areas of work in the WSH Unit. They are grouped into six areas which are: drinking-water quality management, water supply and sanitation monitoring, cholera surveillance and prevention, water and sanitation in different settings, water resources management, and miscellaneous cross-cutting activities (including economic aspects, climate change, and the Millennium Development Goals). Major monitoring and related data analyses being undertaken by WSH include the WHO/UNICEF Joint Monitoring Programme (JMP) which would shortly publish its progress report 2010 on global access to drinking-water and sanitation and the UN-Water Global Analysis and Assessment of Sanitation and Drinking-water (GLAAS) whose report highlights the trends in the enabling environment for drinking-water and sanitation systems and services: economic, financial, policy, institutional and human resource perspectives of drinking-water and sanitation.

He highlighted that an estimated 10% of the global burden of disease could be eliminated by extending access to safe and clean drinking-water and sanitation and improved water management, including vector control. He mentioned that a large proportion of diarrhoeal diseases are related to environmental determinants of health and stressed the need to focus on managing the environment, from both the broad international perspective to the local household level. He stated that low-cost interventions for household-based treatment of drinking-water and safe storage can significantly reduce the microbial load in drinking-water and thereby reduce the risk of diarrhoeal diseases. He mentioned that the seven-point strategy for comprehensive diarrhoea control, adopted by UNICEF and WHO (2009)<sup>2</sup>, includes household water treatment and safe storage as a key method of primary prevention.

Robert Bos also discussed the Network-related activities of WSH. A total of four WHO-hosted networks are managed by WSH: the international network of drinking-water

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<sup>2</sup> UNICEF/WHO (2009). *Diarrhoea: why children are still dying and what can be done*. New York: United Nations Children's Fund, Geneva: World Health Organization.

regulators, the international network on household water treatment and safe storage (in this report: the "Network"), the network on the management of small community water supplies and (with the Japanese National Institute for Public Health and the International Water Association) the network on operation and maintenance. These Networks provide an important avenue for tackling key challenges in water, sanitation and health. He mentioned that the Network has the challenging task of meeting the needs of the most impoverished: those 884 million people who, according to JMP, are without access to improved water sources, as well as the millions more with unreliable access or in conditions of humanitarian crisis, whose water is at risk of contamination due to poor hygiene.

He concluded by posing several questions to the participants regarding HWTS. These included: Why has so little attention been paid, comparatively, to safe storage? By increasing attention on safe storage, the Network would be able to link with other better known and funded environmental health efforts, particularly those related to dengue and urban malaria prevention. The importance of contextualising HWTS raises the question where would it be most useful and effective in preventing disease? How can it be integrated within other household programmes? How should national level programmes integrate HWTS into their priorities? The Network will need to find ways to avoid competition with other water and sanitation efforts and among HWTS initiatives. In order to improve sustainability and scalability the Network must better address HWTS in the context of community needs and priorities and articulate the role of HWTS within the overall development efforts to eradicate poverty.

### **Discussion: HWTS and the MDGs**

The ensuing discussion focused largely on HWTS and the UN Millennium Development Goals (MDGs). Participants mentioned that increasing linkages to the MDGs presents one way to better contextualise HWTS. In addition to raising visibility and increasing inter-sectoral collaboration, linking HWTS to MDGs would facilitate the task of incorporating HWTS objectives into government policies and national poverty reduction strategies. It was noted that currently HWTS advocates most often cite MDG 7 Target C, "to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation". However, participants noted that links to other MDGs may be more relevant and help strengthen the position of HWTS, especially because current monitoring efforts for MDG 7 do not address water quality and long-term sustainability, and the definition of access to improved water sources excludes the practice of household water treatment.

Participants suggested that MDG 4, "to reduce by two-thirds, between 1990 and 2015, the under-five mortality rate", could be used to catalyse action on HWTS. Increasing links between HWTS and MDG 4 was supported by the fact that the burden of diarrhoeal disease is largely borne by young children and the link between HWTS and child mortality is clearly stated in the recent UNICEF/WHO report (2009). It was also suggested to link HWTS to MDG 6, which focuses on combating HIV/AIDs, malaria and other major diseases, but this would be more from the safe storage perspective,

considering the breeding of mosquito vectors of malaria and dengue in tanks and other receptacles.

### **3.2 HWTS: the evidence base, developments in the field and future directions**

*Tom Clasen, London School of Hygiene and Tropical Medicine*

Tom Clasen began his presentation by stressing that the primary purpose of HWTS is to improve water quality. Thus, he urged proponents of HWTS to focus on the link to pathogen reductions and the associated reduction in infection risk. He summarized three major challenges in articulating and demonstrating the health link:

1. *Difficulty in demonstrating health impacts*

Self-reported diarrhoea figures are often inflated due to respondent bias and the tendency to "please" the surveyor. The early figures of 40% reduction in diarrhoeal diseases due to HWTS originated from trials that were not blinded. Recent evidence from blinded, randomly controlled trials suggests reductions are likely closer to 15%. Other sources of disease data, such as clinical diarrhoea data, are often not available or not reliable. In addition, diarrhoeal disease may result from infection sources other than contaminated drinking water (multiple transmission pathways) and without controlling for these (including food safety, handwashing practice and other aspects of household hygiene) it is not possible to prove causal links.

2. *Achieving correct and consistent use of appropriate HWTS*

Evidence that suggests that the application of household water treatment measures drops rapidly in the months following the start of a HWTS program. In many households, use and consumption of HWTS treated water is less than 100% which can adversely affect the protective effect on exposure to pathogens and the potential for beneficial health outcomes.

3. *Financial aspects*

HWTS provides a temporary measure to improve drinking-water quality and should not divert funds away from longer-term measures to improve access to community drinking-water supplies. Although there is a fear that promoting HWTS will lead to a diversion of resources (Schmidt and Cairncross, 2009)<sup>3</sup>, initial evidence does not suggest this to be the case. It is, however, an issue that needs further investigation. Improving the financial sustainability of HWTS is especially challenging given that the households that need HWTS the most are those that can least afford products and devices. An analysis of the burden of water quality would be required to determine if what the most vulnerable pay more for clean water from vendors can be invested in household water treatment and safe storage.

Tom Clasen went on to state that the principal knowledge gaps in the HWTS evidence base are: (1) correct use, (2) effective and appropriate technologies, (3) use by vulnerable

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<sup>3</sup> Schmidt and Cairncross (2009). Household water treatment in poor populations: Is there enough evidence for scaling up now? *ES&T* **43** (4): 986-992.

population (4) and achieving sustainability. Regarding correct use, impact depends on compliance and new studies indicate that a dose response between HWTS use and diarrhoeal disease does exist (Hunter 2009, Waddington et al 2009)<sup>4</sup>.

Achieving greater compliance remains, however, a challenge. In terms of technologies, there is little diversity: the same few types of devices and/or methods are developed with incremental innovations. A radical innovation may be what is needed. Attention should be devoted to regions that are already highly compliant, such as South-East Asia. A better understanding of the motivation of households in these regions may offer lessons learned for regions where use is much lower. Finally, with respect to sustainability and the importance of considering the different contexts in which HWTS is most effective, there is clear evidence of effectiveness in emergency contexts. In an epidemiological context, links with HIV need to be further developed, in areas such as maternal transmission from breastfeeding and safe water for absorption of antiretroviral drugs. Efforts should also be devoted to developing enabling policy environments to support long-term use after initial intervention.

#### **Discussion :Evidence base, developments in the field and future directions**

The discussion largely focused on applying approaches that other health interventions initiatives have successfully used to improve compliance and on the need to continue sharing lessons learned within the HWTS community. One important aspect of compliance mentioned was sustained advocacy. An example from the USA of a major advocacy campaign set up to increase helmet use for motorcyclists had resulted in an increase in adoption. However shortly after the end of the campaign, adoption dropped and mortality from accidents rose. Similar examples with condom use and HIV prevalence were also offered. Thus, for any of these behaviour-change type of health interventions to have a lasting impact, continued advocacy would appear to be needed.

In terms of behaviour change, the HWTS community should learn from successful initiatives, such as the promotion and distribution of Insecticide Treated Nets (ITNs) in campaigns for malaria prevention and control. There is now a positive demand from many vulnerable populations for ITNs. Yet, promoting HWTS methods and devices in a similar way presents a greater challenge than ITNs due to the multiplicity of diarrhoeal disease infection pathways; even 100% HWTS coverage may not result in noticeable disease reductions if the home environment is unhygienic. It was also noted that, unlike for those involved with ITNs, it is more of a challenge for the HWTS community to arrive at a unified position on one or two technologies, as the technology effectiveness and sustainability in regards to supply chains, cost, user preferences, is highly variable in different contexts.

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<sup>4</sup> Waddington, et al. (2009) *Water, sanitation and hygiene interventions to combat childhood diarrhoea in developing countries*. International Initiative for Impact Evaluation. Synthetic Review 001.  
Hunter, PR (2009) Household Water Treatment in Developing Countries: Comparing Different Intervention Types Using Meta-Regression. *ES&T* **43**: 8991-8997.

Given the multi-factorial nature of diarrhoeal disease and the fact that many of the problems being faced by HWTS are also seen in other interventions (such as hygiene and sanitation), work should continue on building the evidence base and improving the understanding of the contexts in which HWTS is and is not effective. In this regard, the importance was highlighted of positioning water treatment as a *necessary* but not *sufficient* condition to improve health.

### **3.3 Integrated household indoor air quality (IAQ) and HWTS interventions in Cameroon and Kenya**

*Ameer Shaheed, WHO*

Ameer Shaheed presented the results of a field evaluation that was carried out in December 2010 of two integrated IAQ and HWTS pilot projects, in Douala, Cameroon, and Kisumu, Kenya. The aim had been to find out whether integrated delivery of household interventions was beneficial to the implementers and/or the beneficiaries.

Ameer Shaheed explained that both projects introduced improved stoves to reduce indoor air pollution along with one or more water treatment devices. Overall, the integration of public health interventions such as these had proved to be beneficial. It was efficient for implementers, who could deliver multiple messages in a single field visit, use the same promotional material for different technologies, and gain partnerships to ease and support their implementation. The target communities benefited from less meetings and continuity in awareness campaigns. As a positive side-effect, they developed a more holistic picture of their health by associating different issues, such as water and smoke.

In the two projects the most effective mechanism to bring about behaviour change was the use of community workers, who promoted and sold stoves and treatment devices. The personal touch they provided was essential to create trust, engage the community and raise awareness.

While the aim of the evaluation was to investigate the synergistic aspect, on this account there remained a dearth of quantitative evidence. Important questions regarding the impact of the interventions were left unsolved. Though the initiative seemed popular, it was not possible to verify whether linking the two interventions actually affected overall uptake. Changes in water quality were not measured, nor were robust measurements regarding diarrhoeal or respiratory disease incidence made. In conclusion, the integration of household interventions seemed worthwhile yet there was a need for more evidence in order to confidently demonstrate a compounded effect on uptake and improvements in health.

#### **Discussion: Integrated delivery of interventions, including HWTS**

There was a clear need to carefully formulate the message being delivered in such integrated interventions. Different target groups may warrant different messages. A prominent question was whether drawing attention to non-health benefits would be more useful than focusing on health benefits. The example was given of stoves that have traditionally been sold on the basis of efficiency and convenience as opposed to health.

The establishment of a common theme or ground from which to launch interventions could also be a significant ingredient. In both cases (Cameroon and Kenya) the kitchen was a common area to bring together two separate messages. The improved stoves presented certain technological benefits, whereas the water treatment devices were more health-related and gave people a sense of security and safety vis-à-vis their drinking-water.

### **3.4 A case study of water and sanitation improvements in schools in Thailand**

*Dr Suree Wongpiyachon, Ministry of Public Health, Thailand*

Suree Wongpiyachon presented results from a 2009 School Health campaign in Thailand. Before the campaign, only 52.3% of water consumed by students met national drinking-water quality standards. Poor hygiene (particularly hand-washing) and water storage were identified as areas where interventions were needed. As part of the National Environmental Health Action Plan, the Government of Thailand aims to provide access to “adequate drinking-water for human consumption, basic hygiene and good sanitation for all” by 2012. The major targets include 100% coverage with tap water for urban households; improved sanitation in 60% of households, food stalls, shops, and public toilets; and 60% of the Thai population demonstrating improved hygiene practices. The major area of needs is that of “software”, or health behaviour change. The national strategy to accomplish these goals focuses on several key areas. These include: supporting collaboration among related ministries, promoting research and development; developing a surveillance and monitoring system; promoting supportive laws and policies; and developing awareness- and behaviour-change campaigns.

#### **Discussion**

It was noted that government involvement and ownership is essential to increase the scale and sustainability of HWTS. HWTS Network participants were urged to link with local institutions, as opposed to “fly in, fly out” operations. Likewise, it was noted that although government responsibilities are multifaceted and complex, it is important for them to collaborate with and receive the support of specialist non-governmental and international entities. In this regard, the added value of the Network lies in focusing on engaging with countries that already have certain capacities that can be exploited. It was suggested that Thailand would one such country as it has strong research institutions and capacity within its Government.

#### **Rainwater storage**

On a different but related topic of identifying opportunities for country collaboration, it was suggested that the Network look at countries relying heavily on rainwater, as such places are likely to already have a strong safe storage component. HWTS could be beneficial to rainwater harvesting, as storage alone does not ensure safety. One potential future activity for the Network might be to pursue links with rainwater harvesting networks (such as the International Rainwater Harvesting Alliance).

### **3.5 HWTS implementation in Kenya**

*Dr John Kariuki, Ministry of Public Health and Sanitation, Kenya*

Dr John Kariuki began his presentation by highlighting major milestones in recent Kenyan health policy. These include: Kenya Health Policy of 1994; Water Act of 2000, Environmental Sanitation and Hygiene Policy of 2007; and, the School Health Policy of 2009. He went on to discuss how a national environmental sanitation and hygiene working group has been set up, which includes a thematic group on HWTS. Membership of this group includes the Ministry of Public Health, Ministry of Water & Irrigation, Ministry of Environment, WHO, UNICEF, NGOs and the private sector. The Government of Kenya looks to these national networks to promote and offer advice on HWTS technologies, as well as supporting the development of strategies and operational research.

There are many barriers to the development of HWTS in Kenya. One is the lack of scientifically sound, health-based criteria for vetting and clearing technologies. Monitoring and evaluation is also needed in order to inform collective and consolidated action. Many of the tools required for this are, however, not yet available. A national-level HWTS network, with support from the international network and its participants, would be a major way to accomplish these activities. Increased funding and improved policy-level integration are also needed. Any solutions need to be affordable for the low-income groups, many of whom make less than 1 US dollar a day.

#### **Discussion**

Following the presentation, it was observed that one of the major benefits of the Network is that it can serve as a resource pool and catalytic force for national endeavours. Both financial and human resources have been important for the expansion of HWTS activities in Kenya. The major bottle neck to national-level progress continues to be a lack of structure and coordination. As long as efforts are fragmented and there is no consolidated position on priorities, funding will be piecemeal and impact low. A common agenda at the international level is needed to tackle this issue in a systematic way and to ensure that lessons learned in this respect in one country are applied in others.

## **4. Network Strategic Directions**

The second day of the Consultation focused on developing the Network Strategy for 2011-2016. Major areas of discussion including the strategic objectives and components, Network structure and associated decision-making processes. Issues raised as a result of the presentations during the first day were also discussed in light of the Network strategy and activities.

### **4.1 Network structure and governance**

It was noted by participants that the Network had been running since 2003 without any clear structure or decision-making policy, though it was smaller and more easily manageable when its first 5 year plan was produced. While the Network had had many successes, the past few years had seen a loss of momentum and direction. Given its size and current challenges, it was important to prioritize activities for the future.

#### **Network secretariat**

Given the increased size and scope of the Network, participants mentioned the value in sharing tasks and responsibilities with other entities such as UNICEF, which may be better suited to carry out certain undertakings, such as scaling up. Peter Harvey stated that UNICEF is willing to take on a more active role in the Network. UNICEF recently listed HWTS as a key priority area at a programme and global level.

Participants commented that while communications from the Secretariat side could be improved and more frequent, greater clarity of direction is needed to structure and inform the Secretariat tasks. One participant remarked that there has been a loss of direction and responsibility, which has hampered Secretariat productivity. This relative disorder, combined with an increased scope of HWTS activities and participants, has been exacerbated by limits to WHO staffing and Network resources. To run the Network effectively, one or two full time Secretariat coordinators would be required, as well as a full-time administrative assistant. It was noted that the Network is currently being run by one half-time coordinator and a shared administrative assistant. WHO headquarters is currently undergoing a hiring freeze, but it may be useful to look at regional offices for such support, particularly in areas where the need for HWTS is greatest.

#### **Network structure**

It was agreed that while the Secretariat needed a more formal structure, an overly formalized structure would prevent many important Network organizations from participating. Participants noted that the light governance structure that rules the Network allows for informal membership and serves as an efficient tool for communication and advocacy. However, an external evaluation of the Network revealed that there is a lack of clarity regarding the decision-making process and use of funds. Given recent growth in Network participants and activities, it was suggested that a light decision-making structure be established in order to maximize the Network's potential impact.

### **Learning from other networks**

Considering the example of the Rural Water Supply Network (RWS Network) as a model, a number of options for strengthening the HWTS Network emerged. The RWS Network has an informal membership of various participant organizations, with a Secretariat based at Skat (an independent Swiss resource centre and development consultancy). It has a revolving chair, with a steering committee consisting of its major and initial partner organizations. Membership is open to the public. It was suggested that this model be studied by the HWTS Network, and indeed, because of the similar nature of work, an alliance might be of mutual benefit.

### **Limitations of the network**

As one participant stated, it is also important to not “oversell what the Network can do”. The Network’s programme of work should consist of a few clear, and time-bound actions. Governance options should be discussed by a representative group of Network participants, who will look into steering group formation. WHO’s role and limitations also need to be taken into account, as it is hosting the Network and has clear boundaries. It was noted that not all required Network activities should be expected of the WHO Secretariat, but rather tasks shared according to the strengths of individual participating organizations.

### **4.2 Key components of Network Strategy (2011-2016)**

Over the course of the meeting, the participants identified important components for the Network and more broadly the overall development of HWTS.

#### **Foster research and broaden the evidence base**

One important priority is to broaden the evidence base, while continuing to implement and promote HWTS activities. Participants commented that further data are needed on effective behaviour change approaches, health impacts and technology performance in the field, among other issues. The need for more evidence, however, should not halt current implementation activities. Other public health interventions, including sanitation and hygiene interventions, suffer from a similar lack of evidence but continue to be promoted and implemented. The key issues regarding fostering research and broadening the evidence base include:

- Development, dissemination and regular updating of a research agenda to address gaps in knowledge.
- Strengthen the evidence base by conducting blinded, long-term randomized control trials (RCTs).
- Emphasize the best option(s) for each local and cultural setting.
- Study social determinants of uptake and acceptability.
- Research the scalability of the interventions.

#### **Advancing technologies and technology evaluation**

Participants noted that technology improvements that are more innovative than incremental (in other words, a paradigm shift) are required. There is currently a vast

range of possible technologies, with the evidence suggesting differences in suitability for different situations (including area, culture, water source, income, and whether diarrhoeal diseases are linked mostly to water quality or other whether other pathways play a significant role). The ideal technology would, by itself, be able to remove all major pathogens and contaminants, function in diverse cultural and environmental settings and be affordable and convenient. The role of simple and cheap alternative energy sources for boiling water was also highlighted.

In addition, guidance is needed on how to evaluate technology performance. It was noted that WHO is developing a document that will provide implementers and policy-makers with a risk-based framework to select options suited to local conditions. The document focuses on microbiological performance and it was discussed that other factors including product availability, epidemiological settings, economic considerations and social incentives are also important.

### **Reaching the most vulnerable**

There are particular challenges in the efforts to reach the most vulnerable and those most in need of HWTS. It was noted that HWTS is often promoted in communities where resources are not limited to the bare minimum and that a refocusing is needed on the poorest, often rural households, that are most likely to rely on unimproved water sources. Efforts to include HWTS in HIV/AIDs programming represents one means by which to reach those for whom better quality water is likely to have a considerable impact on health.

### **Improving delivery and advocacy**

Regarding the improvement of delivery and advocacy, several items were mentioned, including:

- To advocate for country wide scaling-up of HWTS activities, including by encouraging the adoption of HWTS into policies, programmes and regulations.
- Development of guidance and tools to promote the appropriate and effective use of HWTS at a national level and coordinate their use internationally.
- Tracking, aligning and providing an enabling environment, including supply chain and appropriate market mechanisms, to support 'project level' community and country level implementation.
- Promotion in small settings other than households, such as schools and health care facilities
- Advocacy in middle-/high-income countries (like the *Water for the World* initiative)
- Stimulate an integrated approach to environmental health matters at the household level.

### **Monitoring**

It was noted that improved monitoring and surveillance are needed to better understand HWTS practices and to identify those communities where more targeted efforts are needed. Such monitoring and surveillance requires a common reporting format, ongoing

programmatic monitoring, ideally in parallel with independent monitoring, and, robust indicators to measure compliance.

### **Mainstreaming and the wider integration of HWTS**

Mainstreaming HWTS into public health programming was an issue discussed at length; the importance of conducive policy and institutional frameworks within the water, health and education sectors was stressed. In order to bring the changes mentioned above to scale, it is essential for governments to take ownership of HWTS activities. The support and development of an enabling environment through HWTS policy frameworks and institutional arrangements is central to achieving this. The following items were listed as important:

- Transforming policies and national experience into guidelines (clearly qualified indications of where and how to integrate HWTS).
- Targeting resource allocation.
- Examining possible schemes for partnerships between the government and private and nongovernmental entities for HWTS provision and delivery.
- Establishing formal linkages to local-level utility sectors.
- Integrating HWTS within a wider package of household environmental health initiatives.
- Reaffirming the importance of the safe storage component of HWTS, including a more explicit link to both diarrhoeal disease and vector-borne diseases.
- Present HWTS as beneficial in areas other than diarrhoeal disease
  - Non-diarrhoeal health issues (for example, HIV).
  - Non-health issues (for example, poverty reduction, school development).

### **4.3 Network central functions**

Discussions among the participants led to the identification of essential Network-led functions. It was suggested that specific activities would be carried out by working groups. The functions addressed five key areas (the “modalities” of the Network):

1. Information sharing and Communications
  - Website, email, meetings and workshops
2. Coordination
  - Coordinating events; coordinated activities and response (for example, the response to the Haiti earthquake)
3. Advocacy
  - Country- and international level meetings; publications
4. Guidance
  - Technical guidance; policy support; guidance for implementers (for example, requirements for an effective and efficacious treatment device; factsheets)
5. Monitoring and periodic review
  - Programme monitoring, and periodic review of Network activities and objectives

A group of participants agreed to further develop the governance section of the strategy. These participants included, Rochelle Rainey, Tom Clasen, Greg Allgood, Peter Harvey and Daniele Mäusezahl.

#### **4.4 Draft workplan of activities for the HWTS Network**

The final discussions addressed possible Network activities for the next phase, divided into the five key areas earlier identified.

##### **Information Sharing and Communications**

- Update Network website
- Send quarterly emails and items for discussion to Network
- Identify case studies on HWTS
- Host an online webspace for informal discussions and posting of working documents
- Develop country fact sheets and plot them on a map
- Identify points of contact for every country/region
- Circulate the harmonized HWTS indicators that were facilitated by UNICEF (top 10 indicators)
- Formulate and implement a communications strategy

##### **Advocacy**

- Facilitate two national and one international network-related meeting per year, and participation at one non-network meeting (such as World Water Week)
- Compile a list of priority countries (with highest burden of diarrhoeal diseases) in which to raise the profile of HWTS
- Compile a list of countries having carried out successful activities
- Follow-up activities in relation to the UNICEF/WHO seven-point plan to eliminate diarrhoea in children<sup>5</sup>
- UN members of the Network undertake internal advocacy
- Promote intersectoral collaboration
  - Safe storage groups (including rainwater harvesting)
  - Non-diarrhoeal disease programmes such as dengue, malaria, HIV/AIDS, emergency relief
  - Diarrhoeal disease programmes such as cholera
  - Non-health initiatives such as school education, poverty reduction

##### **Coordination**

- Establish a comprehensive calendar of events
  - Encourage proposal submission to conferences/meetings
  - Developing expert panels
- Secretariat to send out calls for coordinated action during emergencies
- Establish a consolidated research agenda, to be worked on between Network and non-Network participants

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<sup>5</sup> *Diarrhoea: Why children are still dying and what can be done* (WHO/Unicef, 2009)

- Translate research outcomes into policy frameworks
- Develop integrated environmental health interventions at household level
- Update the Network and HWTS strategy periodically

### Technical guidance

- Strengthen technological verification
- Organize national seminars for the formulation, review and adjustment of policy
- Develop decision-making tools for the contextualisation of interventions (by environment, socioeconomic strata, traditional beliefs etc.)
- Develop guidance material for practitioners and the integration of HWTS into wider water, sanitation, and hygiene programmes

### Monitoring

- Develop and support monitoring of compliance indicators, with definitions including “users”, “consistent use”, “sustainable HWTS intervention” etc.
- Report on global status of HWTS
- 

### 4.5 List of HWTS related activities in 2010

The participants developed a list of activities in 2010 where HWTS would be featured or have a role. A summary is presented below.

Month (2010)	Day(s)	Event/Item	Venue	Additional notes
March	N/A	WHO water and sanitation factsheets	All regional offices	These will be sent to regional and country offices
	14-18	LatinoSan (conference)	Foz do Iguaçu, Brazil	Technology fair could have HWTS representation
	22	World Water Day	Nairobi, Kenya	Advocacy film to be launched on HWTS
	26-27	World Urban Forum	Rio de Janeiro, Brazil	A side event could be organized
May	4-6	Southeast Asia Regional HWTS Conference	Kathmandu, Nepal	Possible HWTS Network side-event / technology fair
June	28 June-2 July	Singapore International Water Week	Singapore	High-level presentation on HWTS given to plenary (possibly by Margaret Chan, WHO-DG)
September	5-9	World Water Week	Stockholm, Sweden	Call for Network side-event delivered to organizers; presentation

				of HWTS Strategy. UNICEF also drafted an event with Hilton foundation.
	24-29	IWA World Water Congress	Montreal, Canada	Side event possible
October	25-26	Water & Health: where science meets policy	North Carolina, USA	Possible to organize events before and after meeting
November	4-6	Water Safety Conference: managing drinking water quality for public health	Kuching, Malaysia	
	7-11	32nd Biennial meeting of AIDIS (environmental/sanitary engineering conference)	Punta Caña, Dominican Republic	

## 5. Conclusions

Participants agreed that the goals of the strategic consultation had been successfully reached. Discussions provided substantial input for future developments of HWTS and important direction for guiding the next steps for the Network. In concluding, participants agreed that the Network Strategic Plan would be initiated by the Network Secretariat after the meeting, and circulated to the members of the strategic consultation by end March/beginning April 2010. The members of the Geneva consultation would then return this to the Secretariat by the end May, for consideration. Distribution to the Network would take place shortly thereafter.

In closing, Robert Bos thanked the group for their time and valuable input. He looked forward to working with them participants on strategic thinking and action regarding HWTS.

Since the workshop the Strategy has been released and revised in light of input gained at the Consultation and from Network participating organizations. The Strategy can be found online at: [http://www.who.int/household\\_water/resources/en/](http://www.who.int/household_water/resources/en/). Refer to Annex 3 for a summary of the Strategy.

## Annex 1

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## **Annex 2**

### **Approved Agenda**

#### **Day 1: Wednesday 10 February**

##### ***Session 1 - Introduction***

- 9.00 - 9.10 Welcome and round of introductions (R Bos)
- 9.10- 9.15 Explanation of process and expected outputs (R Bos)
- 9:15- 9.25 Overview of WHO activities in water and sanitation, and brief overview of the Network (R Bos)
- 9.25-10.00 HWTS: the evidence base; developments in the field; and future directions (T Clasen)
- 10.00-10.30 Discussion: Where should HWTS be in 2015?
- 10.30-11.00 Coffee break

##### ***Session 2 - Tackling the evidence base***

- 11.00 – 11:30 Discussion: identifying key evidence gaps
- 11.30 – 12.00 Agreement on research agenda
- 12.00 – 13.00 Fulfilling the research agenda: Activities for WHO and the Network
- 13.00 - 14.00 Lunch break

##### ***Session 3 - Mainstreaming HWTS into a wider WSH policy framework***

- 14.00 – 14.30 Issues for HWTS integration in national policy. (S Wongpiyachon)
- 14.30 - 15.00 Government-level action on HWTS: lessons learned. Kenya case study (J Kariuki)
- 15.00 – 15.30 Coffee break
- 15.30 - 16.30 Discussion: How can HWTS be mainstreamed into wider water and health sectors?
- 16.30 - 17.00 Recommended actions for WHO

## **Day 2: Thursday 11 February**

9.00-9.15 Review of Day 1 (A Shaheed)

9.15 - 9.30 Discussion

### ***Session 4 - Supporting effective HWTS implementation***

09.30 - 10.30 Discussion: Facilitating HWTS implementation (including bridging policy and implementation, improving communication, HWTS monitoring, education and training)

10.30 - 11.00 Coffee break

11.30 - 12.00 Recommendation and prioritization of activities to be supported by the Network

### ***Session 5 - Network management***

12.00 - 12.30 Options on different management arrangements for the Network (A Shaheed)

12.30 – 13.30 Lunch

13.30 - 14.30 Discussion: Improved management arrangements for the Network

### ***Session 6 - Resource mobilization***

14.30 - 15.30 Discussion: Resource mobilization for WHO and Network activities

15.30 - 16.00 Coffee break

16.00-16.15 Recommendation and prioritization of resource mobilization

16.15 – 16.45 Summary of conclusions and next steps for WHO and the Network 2010 - 2015 (A Shaheed, T Clasen)

16.45-17.00 Concluding remarks and closure (R Bos)

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## **Annex 3**

### **Revised Network Strategy Summary**

The HWTS Network Strategy for Phase II (2011-2015) builds upon the initial achievements of the Network which increased awareness, interest, and collaborative, global effort in regards to household water treatment and safe storage. In the next phase of the Network, the Secretariat will be jointly managed by WHO and UNICEF in order to capitalize on the strengths of each organization. Specific items outlined in the strategy include the establishment of national household water treatment and safe storage policies, scale-up of HWTS operations and development of the evidence base. In the strategy the Network recognizes that household water and safe storage is not a replacement for sustainable, safe water supplies. However, given that 884 million still lack access to improved water, HWTS serves as an important intermediate measure to reduce disease risk, especially among vulnerable populations.