

INTERNATIONAL NETWORK ON HOUSEHOLD WATER TREATMENT AND  
SAFE STORAGE

**Strategy and funding proposal**

**Revised March 2011**

Prepared by the World Health Organization and the United Nations Children's Fund on behalf of the International Network on Household Water Treatment and Safe Storage.

**I. Background**

*The issue*

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. The WHO/UNICEF Joint Monitoring Programme does not include drinking-water that has undergone household treatment in its definition of improved water sources. Therefore, it is not considered a replacement for the sustainable supply of safe drinking-water. Yet, household water treatment and safe storage address 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.

While point of use (POU) is another term used to represent water treated just prior to consumption throughout the strategy the term HWTS is used. It refers not only to drinking-water treated in the home but also in schools, health care settings and other community locations. In addition, it may include water that is treated by small-scale vendors before selling at the household level.

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. The 7-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 proven method of primary prevention, adding sustainability to other interventions specifically aimed at reducing child mortality. In addition, safe storage can contribute to a reduction of breeding sites for disease vectors (dengue and malaria) in and around the house.

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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.

<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.

Emerging research points to the contextual suitability of different treatment and storage options. The five most common interventions for household water treatment (chlorination, solar disinfection, boiling, filtration, flocculation) as well as combined approaches have been the subject of research, but strong evidence for the attribution of a reduction in the burden of disease is still scarce. Another knowledge gap concerns that of the socio-behavioural aspects of household water treatment and safe storage. The paradigm that there is a best option in each setting is fairly recent and needs further elaboration by the research community.

As an intervention, household water treatment and safe storage have proved to be cost-effective in low-income settings. It has been estimated that one USD invested into household water intervention can lead to as much as a 60-fold benefit (Hutton & Haller, 2004<sup>3</sup>). In a broader perspective, the World Bank has found that an integrated approach to environmental health interventions comprising a reduction of indoor air pollution, the distribution of insecticide-treated mosquito nets and point-of-use water treatment could make a major impact on poverty reduction (Harou and Doumani, 1998<sup>4</sup>; Shyamsundar, 2002<sup>5</sup>). Therefore, it is important that household water treatment and safe storage interventions are delivered in an integrated and contextual manner. The goal should be to promote HWTS as part of the delivery of a combination of interventions for environmental health challenges at the household level.

### *The Network*

The World Health Organization has hosted the International Network on Household Water Treatment and Safe Storage ("the Network") since its establishment in 2003. Over a seven-year period, the Network, has brought together more than 100 stakeholders from the field of HWTS. Participating institutions include international organizations, governmental organizations, international and local NGOs, private sector entities and academia. All participating institutions subscribe to the aim and principles for the promotion of HWTS. The Network has contributed to an increased awareness, interest and acceptance of HWTS at the national and international level. In a number of countries it has led to the establishment of a national committee or task force on HWTS. It fosters the communication among participating institutions in order to enhance knowledge-sharing and it achieves a multiplier effect in support of scaling up HWTS efforts, through its network functions.

The Network has four areas of activity: research, implementation and scaling up, creating an enabling environment, and monitoring and evaluation. These areas of activities are reflected in the remit of four working groups on: knowledge advancement, policy and advocacy, capacity building, and monitoring. It is conceivable to extend the scope of activities also to guidance on HWTS in emergencies and to broader domestic water use

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<sup>3</sup> Hutton G and Haller L (2004). "Evaluation of the Costs and Benefits of Water and Sanitation Improvements at the Global Level." Water, Sanitation and Health Protection of the Human Environment, World Health Organization, Geneva WHO/SDE/WSH/04.04

<sup>4</sup> Harou, Patrice and Fadi Doumani, Editors (1998). *Environmental Economics for Development Policy Manual* WBIEN. Washington, D.C.: The World Bank.

<sup>5</sup> Shyamsundar P (2002) "Poverty- Environment Indicators". *Environmental Economics Series*. No 84. Washington DC: The World Bank Environment Department

(i.e. small-scale irrigation for horticulture); additional working groups may be established to address such new areas.

## **II. Network structure and governance**

The Network has been hosted by WHO since 2003 and UNICEF has been an active member. Under the new strategy it is intended that the arrangement will be extended, starting in 2011, to include UNICEF as a co-hosting agency. This will underscore the inter-agency collaboration in relation to the 7-point strategy on comprehensive diarrhoea control agreed by the two agencies. Under this new arrangement, the comparative advantages of each agency will help strengthen the Network functions. Synergistic effects from this collaboration can be expected, as experience in policy formulation, technical specifications and scaled-up fieldwork can be combined, establishing a fertile ground for collaboration among stakeholders with a variety of backgrounds. In addition to the convening powers of WHO and UNICEF as Network hosts, both agencies will continue to contribute to the Network as participating institutions, in the following areas: support of research in the HWTS field and setting/updating the priority research agenda, policy support for countries that wish to design and implement HWTS policies, establishing technical specifications for treatment methods and procedures on the basis of available evidence, combining environmental health interventions at the community and household level and scaling up of HWTS activities.

Under the proposed strategy, governance of the Network will include the creation of a Network Advisory Group consisting of core stakeholders designated by WHO and UNICEF in consultation with Network participating institutions. Members of the Network Advisory Group will come from the Network participating institutions motivated to provide guidance to the implementation and regular updating of the strategy, assist in the mobilization of resources and guarantee an all-encompassing consultative process. Furthermore, the Network Advisory Group will trigger coherent views and communications by the Network and set out an agenda of activities based on the Network's strategy. The Terms of Reference of this Network Advisory Group are presented in Annex 1 to this strategy.

Governance of the Network shall be guided by the principles of transparency and participation, emphasizing the active involvement of participating institutions and recipients as well as efficiency and flexibility, meaning that the Network will maintain an agile structure and administration.

## **III. The strategy**

### **Mission statement**

*To contribute to a significant reduction in water-borne and water-related vector-borne diseases, especially among vulnerable populations, by promoting household water treatment and safe storage as a key component of community-targeted environmental health programmes*

## **Strategic objectives**

Four strategic objectives capture the mission statement:

1. Evidence base of the public health relevance of household water treatment and safe storage significantly strengthened;
2. Tangible results in the scaling-up of household water treatment and safe storage achieved in countries in all regions of the world;
3. National policies and institutional frameworks developed and in place to ensure the integration of different environmental health interventions with drinking-water treatment and safe storage at the household level from a broad public health perspective; and,
4. Best practice in HWTS programmes evaluated and disseminated for advocacy purposes.

## **Targets**

In order to achieve the goals set in the mission statement the following specific targets have been defined:

- By 2015, 30 countries have established policies on household water treatment and storage
- By 2015, more credible and convincing evidence demonstrates that HWTS interventions are effective and replicable in terms of achieving long-term, widespread use and public health impact.
- By 2020, 50 countries have achieved country-wide scale up of project-based HWTS

## **Strategy components**

### *Household Water Treatment and Storage*

1. Facilitate the implementation of household water treatment and storage
  - 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.
  - Provide information, support and expertise to assist in establishment of national policies on household water treatment and storage.
  - Contextualize options for interventions by climatic zones and ecosystem types.
  - To advocate for country wide scaling-up of HWTS activities, including by encouraging the adoption of HWTS into policies, programmes and regulations, targeting governments, non-government organizations, donors, water supply sector stakeholders, health authorities, and other relevant decision makers.
  - Communication of existing and new developments in the field of HWTS.
2. Foster research and broaden the evidence base on household water treatment and safe storage
  - 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.
3. Address the needs of the most vulnerable in the context of HWTS
    - Provide guidance to ensure that HWTS interventions are targeted at recipients with low immunity (infants, children, immunodeficient and the elderly).
    - Provide recommendations on best practices of use of HWTS in emergencies or water-borne disease outbreaks.
  4. Monitor progress of HWTS uptake and sustainable use
    - Establish consensus and credible monitoring criteria.
    - Establish consensus monitoring mechanisms.
  5. Establish links to other environmental health interventions on household level
    - Combine interventions with actions on solid fuels, malaria, sanitation, hand-washing, sexual and reproductive health, safe use of household chemicals and safe food preparation.
    - Stimulate an integrated approach to environmental health matters at the household level.

#### *Special Considerations to Household Water Storage*

6. Advocate for safe storage
  - Ensure safe household water storage mechanisms are implemented alongside treatment options.
  - Consolidate efforts made in the field of treatment with those for safe storage.

#### **IV. Implementation**

In order to achieve implementation of the strategy, a clear repartition of responsibilities is necessary. It is essential to emphasize the core Network activities and to lay down the way forward to achieve the defined targets, as well as the monitoring, evolution and reporting the activities and progress of HWTS on a regular basis. Respective responsibilities of the Network's bodies and participating institutions are as follows:

##### WHO/UNICEF

- Development, coordination and monitoring of the Network programme of work
- Resource mobilization to support Network operations
- Organize regular network meetings and facilitate working groups as needed
- Maintain external relations

#### Network Advisory Group

- Strategy review & development
- Development of a resource mobilization strategy for the network
- Activity review
- Prioritization of action areas
- Contextualization of HWTS within related public health and development efforts

#### Participating organizations

- Implementation of programme activities, including training and capacity building
- Reporting on ongoing activities
- Reporting on outcomes and impacts of activities
- Support regional and national level actions
- Participating in and contributing to Network events, online forums and information sharing

#### University of North Carolina

- External Communication

### **V. Budget**

An estimated budget of the funds require to achieve the strategic objectives is provided in Annex 2. These funds have not yet been secured. It will be the responsibility of Network participating institutions together with the Secretariat to obtain the necessary funding.

## **Annex 1: Terms of Reference for the Network Advisory Group**

### Terms of Reference

#### Advisory Group of the International Network on Household Water Treatment and Safe Storage (INHWTS)

The International Network on Household Water Treatment and Safe Storage ("the Network") was established in 2003 with the objective to promote household water treatment and safe storage as a critical contribution to the efforts to reduce the burden of water-borne diseases. It brings together a range of stakeholders who are all committed to the network's objective and principles. Specifically it aims to respond the needs of:

- A large part of the world population (mainly in Sub-Saharan Africa, South and South-East Asia) without access to drinking-water from improved sources, estimated at 884 million in 2008.
- Even those with drinking water access to improved sources may live in conditions of poor hygiene (2008: an estimated 2.6 billion people without access to basic sanitation) leading to microbial contamination of communal drinking-water supplies at numerous times between point of collection and consumption.
- Populations, often in urban areas, served by piped systems in the home with variable service and water quality and force them to store drinking-water, posing contamination risks.
- Populations in emergency situations where water, sanitation and health services may have broken down partially or completely.

Phase II of the Network (2011-2016) 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 order to effectively achieve the strategic objectives of Phase II, UNICEF and WHO have agreed to establish a Network Advisory Group (AG). The AG will provide strategic advice, programme development and review, and appraisal of Network products.

#### **Composition and Member Profile**

The AG will be composed of maximum ten members, all outstanding professionals with a well-established track record in their area of expertise. Candidate members of the AG will be experts and leading practitioners in the fields of drinking-water quality, water treatment technology, policy-making, monitoring and evaluation, environmental health, community-based interventions, health behaviour change and social marketing/product development. The selection process will consider experience, geographical distribution, gender balance and the need to balance representatives from government agencies, non-governmental organizations, academia and private enterprise. They cannot be current staff members of the WHO or UNICEF.

### **Selection Criteria and Conditions for AG Members**

The following criteria will be used to select members of the AG:

- At least 8-10 years of exemplary experience in respective profession.
- Demonstrated commitment to mission of the Network
- Leadership experience and ability to work collaboratively with diverse teams.
- Track record in strategic thinking and planning in high level committees.
- Ability to engage in interdisciplinary thinking and strategy development.
- Excellent oral and written communication skills in English.

In addition, the following are conditions that all AG members must agree before beginning a term with the AG.

- Willing to devote at least 40 hours/year to AG in addition to contribution to other Network activities and efforts.
- Review of statement of extent and nature of stated and/or potential vested interest/conflict of interest.
- Complete a short memo at the conclusion of term on contributions and work outputs of AG.

### **Designation procedures**

WHO and UNICEF will jointly select the members of the AG, applying the criteria outlined above. Members are designated for a period of three years, with the option of re-designation for one additional term of three years. The designation period irrevocably comes to an end after six years. Members are designated in their personal capacity. They cannot be represented at AG meetings by other staff members of the institute they are affiliated with or any other professional colleagues.

### **Functions and responsibilities**

Within the agreed boundaries of an independent advisory group that will not develop its own programme of activities, the functions and responsibilities of the members of the AG are as follows:

- Trigger coherent views and communications by the Network and set out an agenda of activities based on the Network's strategy
- Review the status of the Network agenda of activities on a regular basis and formulate sound recommendations towards achieving the strategic objectives
- Follow global and regional developments in HWTS as a basis for the strategic advice to the Network
- Advise and provide direction to the Network working groups that may be established to address specific needs related to HWTS
- Develop a resource mobilization strategy and foster effective links with bilateral and multilateral external support agencies and other organizations, in line with their priorities
- Consider ways to improve the relevancy of the Network to its members and increase Network participation from organizations active in water quality, hygiene, and environmental health activities and from regions where HWTS is

especially active, including Sub-Saharan Africa, South and Southeast Asia, and Central and South America

- Increase dissemination of Network outputs
- Consider ways to build capacity at regional and national levels in development and implementation of national HWTS policies, integration of HWTS into household environmental strategies, HWTS technology certification, HWTS monitoring and evaluation and other important Network identified areas such as demand generation and behavior change.

### **Arrangements**

Annual meetings of the AG will be held, when possible, in conjunction with other Network events, or otherwise at UNICEF HQ in New York or at WHO HQ in Geneva. The exact dates of the meeting will be determined by the Chair in consultation with the UNICEF and WHO. The administrative support for the AG will be provided by UNICEF and WHO.

Depending on the agenda and workload of the AG, its annual meetings will be one to two days long.

In addition, *ad-hoc* telephone- and videoconferences during the interim period between annual meetings can be called by the Chair or by either of the two agencies, as need arises. E-mail correspondence on strategic issues will also provide a medium for dialogue.

The working language of the AG meetings will be English.

At the start of each annual meeting, the members chose from their midst a Chair who will remain in that function for the next twelve months. The Chair can be re-elected once. The Chair works with UNICEF and WHO in setting the agenda for the annual meeting serves as the focal point for AG activities throughout the year and keeps the AG members informed of new developments.

The cost of attending AG meetings will be covered from the Network budget at the disposal of the two agencies, on the basis of economy class travel via the shortest possible route and per diem entitlements/incidentals in accordance with standard UN rules.

AG members are encouraged to participate in other Network events, including regional and country workshops. The cost, however, for these events will be borne by the AG member and not WHO or UNICEF.

UNICEF and WHO will ensure that AG meeting reports are published soon after the event, following due consultation of all members on a draft meeting report. Final meeting reports will be posted on the Network website.

## Annex 2: Network Budget

### Budget to achieve strategic objectives and support Network functions

Over the 6-year period 2011-2016 (in '000s of US\$)

|  | 2011                    | 2012         | 2013         | 2014         | 2015         | 2016         | Total        |
|--|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>HTWS outputs/activities</b>   | (Amounts in US\$ '000s) |              |              |              |              |              |              |
| <b>Output 1: Strengthened evidence base</b>  |                         |              |              |              |              |              |              |
| Setting and updating the research agenda   | 75                      | 0            | 0            | 75           | 0            | 0            | 150          |
| Systematic reviews   | 0                       | 50           | 0            | 0            | 50           | 0            | 100          |
| Three studies in sub-regional clusters of countries  | 100                     | 200          | 300          | 200          | 100          | 100          | 1,000        |
| Reports and publications   | 0                       | 50           | 50           | 50           | 100          | 50           | 300          |
| <b>Sub Total for Output 1</b>  | <b>175</b>              | <b>300</b>   | <b>350</b>   | <b>325</b>   | <b>250</b>   | <b>150</b>   | <b>1,550</b> |
| <b>Output 2: Promotion and scaling up</b>  |                         |              |              |              |              |              |              |
| Production promotional materials   | 75                      | 50           | 50           | 50           | 75           | 25           | 325          |
| Development and testing of guidance materials  | 0                       | 50           | 50           | 50           | 0            | 0            | 150          |
| Support consultants to appraise scaling up efforts   | 0                       | 50           | 50           | 75           | 50           | 75           | 300          |
| Support to national initiatives, including training  | 30                      | 30           | 20           | 0            | 0            | 0            | 80           |
| Develop criteria for contextual treatment options  | 100                     | 75           | 0            | 0            | 0            | 0            | 175          |
| <b>Sub Total for Output 2</b>  | <b>205</b>              | <b>255</b>   | <b>170</b>   | <b>175</b>   | <b>125</b>   | <b>100</b>   | <b>1,030</b> |
| <b>Output 3: Policies and institutional arrangements for an integrated, broad public health approach</b> |                         |              |              |              |              |              |              |
| National policy workshops  | 0                       | 90           | 45           | 90           | 45           | 90           | 360          |
| Promotion of institutional arrangements  | 0                       | 25           | 25           | 25           | 25           | 25           | 125          |
| Piloting integrated approaches   | 30                      | 30           | 30           | 30           | 30           | 30           | 180          |
| Preparation of a thematic report on integration  | 0                       | 0            | 0            | 0            | 40           | 40           | 80           |
| Meeting on coordination HWTS/IAP/IVM   | 0                       | 100          | 0            | 0            | 0            | 0            | 100          |
| Two-year trials of multiple interventions  | 0                       | 40           | 260          | 260          | 40           | 0            | 600          |
| <b>Sub Total for Output 3</b>  | <b>30</b>               | <b>285</b>   | <b>360</b>   | <b>405</b>   | <b>180</b>   | <b>185</b>   | <b>1,445</b> |
| <b>Output 4: Best practice advocacy, evaluation and dissemination</b>                                    |                         |              |              |              |              |              |              |
| National advocacy events   | 50                      | 50           | 50           | 50           | 50           | 50           | 300          |
| Evaluation of and reporting on best practice   | 15                      | 25           | 25           | 25           | 25           | 40           | 155          |
| Dissemination activities   | 10                      | 10           | 10           | 10           | 10           | 10           | 60           |
| <b>Sub Total for Output 4</b>  | <b>75</b>               | <b>85</b>    | <b>85</b>    | <b>85</b>    | <b>85</b>    | <b>100</b>   | <b>515</b>   |
| <b>Supporting the Network functions</b>  |                         |              |              |              |              |              |              |
| Staffing : WHO P3 STP  | 180                     | 180          | 180          | 180          | 180          | 180          | 1,080        |
| Staffing : UNICEF P3 STC   | 180                     | 180          | 180          | 180          | 180          | 180          | 1,080        |
| Staffing : Part-time communications staff UNC  | 40                      | 40           | 40           | 40           | 40           | 40           | 240          |
| Network meetings   | 0                       | 60           | 0            | 60           | 0            | 60           | 180          |
| Maintaining the web site   | 5                       | 5            | 5            | 5            | 5            | 5            | 30           |
| Network Advisory Group meetings  | 20                      | 20           | 20           | 20           | 20           | 20           | 120          |
| Staff travel   | 10                      | 40           | 40           | 40           | 40           | 30           | 200          |
| <b>Sub Total</b>   | <b>435</b>              | <b>525</b>   | <b>465</b>   | <b>525</b>   | <b>465</b>   | <b>515</b>   | <b>2,930</b> |
| <b>Grand Sub Total</b>   | <b>920</b>              | <b>1,450</b> | <b>1,430</b> | <b>1,515</b> | <b>1,205</b> | <b>1,050</b> | <b>7,470</b> |
| <b>WHO overhead (13%)*</b>   | <b>53</b>               | <b>110</b>   | <b>117</b>   | <b>126</b>   | <b>87</b>    | <b>72</b>    | <b>558</b>   |
| <b>UNICEF overhead (7%)**</b>  | <b>33</b>               | <b>42</b>    | <b>32</b>    | <b>36</b>    | <b>29</b>    | <b>32</b>    | <b>204</b>   |
| <b>GRAND TOTAL</b>   | <b>1,006</b>            | <b>1,562</b> | <b>1,619</b> | <b>1,717</b> | <b>1,181</b> | <b>1,154</b> | <b>8,232</b> |
| *WHO overhead over outputs 1 and 3, WHO staff and Network Advisory Group meetings + 50% travel           |                         |              |              |              |              |              |              |
| **UNICEF overhead over outputs 2 and 4, UNICEF consultant and Network meetings + 50% travel              |                         |              |              |              |              |              |              |