Joint Teleconference Meeting Minutes

Advisory and Public-Private Partnership Group of the International Network on Household Water Treatment and Safe Storage

15:00-16:30 (Central European Time)
27 January 2012

1. Introduction

As listed below a total of nine individuals participated in the call.

*Advisory Group (AG) Partici*pants: Tom Clasen (LSHTM), Leo Hellar (UFMG, Brazil), Rob Quick (CDC), Rochelle Rainy (USAID)

Public Private Partnership Group (PPG): Greg Allgood (P&G), Navneet Garg (VF), Michael Gately (Medentech)

Secretariat: Michael Forson (UNICEF), Maggie Montgomery (WHO)

2. Agenda

The agenda as circulated by M Montgomery (WHO) prior to the meeting was discussed and there were no additions or changes at the beginning of the meeting.

a. Global HWT Evaluation Scheme
b. Implementation of Strategy and Scale-up
    -Working Group Update (policy/advocacy & research-Maggie, integration and implementation & monitoring and mapping-Michael)
    -Reducing/eliminating HWTS tariffs
    -Network reporting-Annual report
c. Key Network aims/call for action in upcoming HWTS relevant events
    -World Water Forum 2012-Marseille (March)
    -International Water Week-Singapore (July)
    -World Water Week-Stockholm (August)
    -Proposed Southern Africa HWTS Workshop (Malawi, Date TBD)
    -Others

3. Proceedings of the meeting

The following items included in the agenda were discussed at the meeting.

a. Revised Discussion note on proposed WHO Evaluation Scheme for Household Water Treatment Technologies

Prior to the meeting M Montgomery (WHO) circulated a revised discussion note regarding the proposed WHO-led evaluation scheme for household water treatment (HWT). The note incorporated comments from a range of stakeholders including AG and PPG members. It served as an update to an earlier version circulated and discussed during

the October 2011 AG and PPG meetings at UNC, Chapel Hill.

M Montgomery (WHO) invited the participants to share their thoughts and/or ask questions on the proposal which laid out three different options, from WHO having a role limited to only facilitating the development of harmonized testing protocols, but not evaluating testing results and laboratories to WHO taking a comprehensive role in overseeing testing, test results and laboratories[1] (Refer to Annex for revised discussion note).

R Rainey (USAID) began by enquiring about the status of uptake and implementation of the WHO recommendations by nationals. M Montgomery (WHO) indicated that several countries, including Ethiopia, Kenya and Mali had expressed interest in strengthening their evaluation of HWT based on the recommendations. However, given limited resources, these countries were also seeking input on how to do so in an incremental manner. For example, in Ethiopia the semi-autonomous agency within the Ministry of Health which oversees HWT evaluation is in the process of considering how they might expand the scope of their current testing to include a range of source/test waters, other bacterial indicators of fecal contamination, and testing in duplicate or triplicate.

T Clasen (LSHTM) raised the point, which he and others had also raised during the October AG meeting[2], regarding whether it might be fruitful to wait and see how the document and recommendations were implemented and utilized before establishing an expensive and possibly imperfect international scheme. He also raised the issue of whether there is sufficient demand for the scheme given the existence of international testing bodies which currently conduct evaluation and have expressed interest in adopting WHO recommendations.

G Allgood (P&G) stated that he was not planning to have the technology manufactured by P&G (PUR) re-tested as it has been certified to meet EPA criteria for performance. According to these results it meets the *protective* level of performance. He suggested that an international scheme should recognize previous testing efforts.

A Zwane (Gates Foundation) commented that additional details are needed regarding the national capacity building outcomes of a scheme. She felt that the greatest value of such a scheme is in assisting policy-makers in understanding the test results and how to use the results of the evaluation to select appropriate HWT. Others on the call also agreed with this point. M Montgomery (WHO) mentioned that the HWTS monitoring and evaluation toolkit which WHO together with UNICEF is developing with Network support could help nationals in appropriate selection. However, it was noted that this document is more focused on monitoring household use and programmatic outcomes and does not directly

[1] The note is based on implementation of the 2011 WHO recommendations on HWT Evaluation. *Evaluating household water treatment options: Health-based targets and microbiological performance standards*, Geneva, World Health Organization.
http://www.who.int/water_sanitation_health/publications/2011/household_water/en/index.html

[2] The meeting minutes from the 2 October 2011 AG meeting and 4 October 2011 PPG meeting can be accessed on the Network Communications Portal: http://waterinstitute.unc.edu/hwts/secretariat

fill the gap in assisting governments in understanding microbiological performance and regulation. M Gately (Medentech) stressed the importance of an international scheme having a strong role in supporting governments in regulating the quality of HWT products on the market.

b. Implementation of strategy and scale-up

The working groups and strategy implementation were not discussed in detail but a few issues were covered as summarized below.

Removing Tariffs on HWTS

The issue of tariffs serving as barrier to importation of international HWT products and scale-up was discussed. It has been suggested the Network work to remove HWT tariffs. In order to understand the process involved in removing tariffs M Montgomery (WHO) summarized her recent discussions Dr Teuscher (WHO) and Halima Mwenesi (FHI 360) regarding their efforts to remove tariffs from insecticide treated nets (ITN). The process started in 2000 once it was clear ITNs were efficacious. Government leaders pledged support to remove tariffs through the Abuja Declaration[3]. In the years that followed through support from donors (USAID, Gates Foundation)[4] several processes were undertaken including working with national governments on modifying and/or removing tariffs, harmonizing the definition of ITN commodities with the World Customs Organization, and assisting local manufacturers in improving the quality and quantity of ITNs. A Zwane (Gates Foundation) noted that tariffs in Uganda on imported rainwater collection equipment increased the price by 56% and N Garg (VF) noted that a number of countries have high tariffs on HWT. He agreed to provide additional information on the extent of the problem. All agreed that the issue should be further explored as not to prevent highly performing HWT devices from being used in places where they are needed most.

c. Key Network aims in upcoming planned or proposed events

Southern African workshop on integrated interventions and national policies

M Montgomery (WHO) brought forth the proposal to have a workshop on integrated interventions and national policies in Southern Africa (Malawi, Mozambique and Zambia) to further build upon efforts in these countries to integrate HWT into health programmes. R Quick (CDC) felt this was strategically a good idea as integration, for example of HWT into maternal health programmes, provides an incentive to receive health services and has support from national governments (Malawi) and partners (CDC, PATH, PSI). G Allgood (P&G) also agreed that having a Southern African workshop could further strengthen efforts and furthermore it is a region where there are is a large need for safe drinking-water and the health burden of diarrhoeal disease considerable.

Other workshops/Network presence at global and regional events

T Clasen suggested that the Network consider hosting a workshop in India in order to document and build upon the national scaling-up of HWT efforts. He noted the

[3] Abuja Declaration and Plan of Action. http://www.rbm.who.int/docs/abuja_declaration.pdf

[4] Support from these organizations went to efforts including malaria taxes and tariffs advocacy project http://www.m-tap.org/ and the Netmark Project http://www.netmarkafrica.org.

magnitude of need for safe drinking-water in India and the important role of public private partnerships.

In regards to a Network presence at other events, A Zwane (Gates Foundation) indicated that her organization is increasingly focusing on regional events, rather than large global events, in order to maximize impact. The group agreed to explore such events as well as other health meetings where HWTS typically is not represented. R Quick (CDC) noted that CDC will be at Global Maternal Health Meeting in Delhi and N Garg (VF) stated that VF would be present at the International AIDS meeting. Finally, it was suggested that research oriented conference in a country/region where there are active studies would be a way to bring together both national and international researchers as well as policy-makers to share the latest evidence and gain consensus on a research agenda.

d. Any other issues

No other issues were raised and the meeting closed at approximately 16:30.

Action Items

The main points for action from this meeting are as follows:

- Maggie Montgomery to consider input on the evaluation scheme together with WHO colleagues in both Water, Sanitation, Hygiene and Health and the Legal Council and revert with feedback.

- Maggie Montgomery to circulate meeting minutes for input from participants and once revised to all AG and PPG members.

- All to consider global and regional events where the Network and HWTS is of importance and should be on the agenda. These will be compiled into one master list and shared through the Network listserve and newsletter.

Annex 1: Revised Discussion Note, WHO-led International Evaluation Scheme

Introduction

The number of diarrhoeal deaths associated with poor water, sanitation and hygiene is alarmingly high, reaching nearly 1.5 million each year. Vulnerable populations, including young children, people living with HIV/AIDS and malnourished populations as especially at risk. After pneumonia, diarrhoea is the second leading cause of death among children under five (Black, et al., 2010).

Household water treatment provides an interim measure for removing pathogens from drinking-water and reducing disease risk, particularly where access to safe drinking-water supplies is not available. Meta-analyses from 2005 (Fewtrell, et al), 2009 (Waddington, et al) have found a 35% and 44% reduction in diarrhoeal disease, respectively, associated with HWT. As such, it is a key preventive component of the WHO/UNICEF comprehensive strategy on diarrhoea control and a number of international targets challenge governments to address HWTS in national policies, strategies and through intersectoral task forces.

Achieving health gains associated with household water treatment depends on two key requirements. First and foremost, household water treatment (HWT) technologies must sufficiently reduce pathogens to protect health and second such technologies must reach and be consistently and correctly used by the populations most at risk for waterborne disease. This discussion note focuses on the first requirement concerning the performance of HWT technologies. More specifically, it describes the options and WHO role in evaluating the performance of HWT technologies. As governments increasingly address the use of HWT in national policies and health programmes and while manufacturers continue to promote and distribute HWT technologies, there is a real need for increased evaluation and regulation of HWT to ensure expected health gains are achieved. WHO has, for the first time ever, provided

2. Basis for a household water treatment evaluation scheme

There are a number of different HWT technologies and options vary in performance and ability to protect health. The following summarizes the main types of technologies that target microbial pathogens (Sobsey, et al., 2008):

- Physical removal of pathogens (e.g. filtration, adsorption, or sedimentation)
- Chemically treating water to kill or deactivate pathogens, most commonly with chlorine
- Disinfection by heat (e.g. boiling or pasteurization) and ultraviolet (UV) radiation, either using the sun (solar disinfection) or an artificial UV lamp
- Combination of these approaches (e.g. filtration or flocculation combined with disinfection)

These different treatment methods vary in their ability to remove the main classes of microbes that poise health risks (bacteria, protozoa and viruses) and, even within each of these treatment categories, performance among different specific technologies varies considerably (WHO, 2011).

In order to better inform which HWT options are selected, WHO has recently published criteria and guiding principles for evaluating and assessing the performance of HWT (WHO, 2011). For the first time, there are now global criteria to evaluate whether an HWT option reduces waterborne pathogens sufficiently to protect health. Through use of a risk-based framework and by emphasizing the philosophy of incremental improvement, the WHO recommendations are intended to provide implementers and policy-makers with an evidence-based and pragmatic approach to select options suited to local conditions.

While the document has been distributed to all WHO country offices and Ministries of Health and Water (or equivalent) many neither have the capacity, nor resources to evaluate technologies based on WHO recommendations. Concurrently, these same governments, mainly located in sub-Saharan Africa, Southeast Asia and parts of Central and South America are increasingly being approached by both local and international manufacturers to buy and/or allow the sale of their product within their respective countries. This poises a serious dilemma, as if the true benefits and health gains of HWT are to be realized, use of HWT technologies that meet health criteria must be the first consideration. An international evaluation scheme for HWT would serve to fill this immediate and growing need for rigorous health-based assessment of HWT technologies. In fact, the global reach of many technologies also suggests that international oversight of evaluation is necessary and offers the most efficient use of limited public health resources.

The WHO, as the global technical authority on public health, is ideally suited to coordinate global efforts evaluating household water treatment technologies. WHO has experience in coordinating public health evaluation schemes through namely WHOPES - the WHO Pesticide Evaluation Scheme and the WHO Evaluation of Rapid Malaria Diagnostic Tests. These efforts validate WHO's unique role in managing such international schemes and provide insights into the legal, technical and political considerations in conducting this important and complex work.

The information contained in this note sets out the options and opportunities for the establishment of a World Health Organization (WHO) Evaluation Scheme for Household Water Treatment (HWT) Technologies. This note has been revised from an earlier version circulated in September 2011 based on feedback from WHO staff, members of the International Network on Household Water Treatment and Safe Storage Advisory and Public Private Partnership Groups, public health officials, manufacturers and public health testing agencies.

3. Scheme Objectives and Options

There are two main objectives to the proposed scheme. These are:

- Promote and coordinate independent and consistent testing and evaluation of household water treatment technologies based WHO criteria;
- Support national governments in number of evaluation related functions including: educating officials on risk-based evaluations, building technical

capacity of research institutions and partners to conduct complimentary assessments of HWT in the field and at the local level, and providing tools for developing certification policies and implementing regulatory processes.

Based on a desk review of public health evaluation schemes and discussions with key stakeholder groups named above, three main options emerged for an international evaluation HWT scheme. These options, listed from the greatest WHO involvement to the least are to: (1) Direct involvement in testing, formal review of results and explicit final recommendations, (2) Indirect involvement in testing, formal review of results and final recommendations, (3) Indirect involvement in testing, no formal review of results, compilation of findings but no WHO recommendation. The components of each of these three along with the associated, estimated costs are detailed in **Table 1** on the following page.

As shown in the Table each option has advantages and disadvantages. Option 1, while providing the most rigorous evaluation is also the most expensive and may be difficult to sustain financially. Also, this option may be prohibitively slow in evaluating devices and thus hamper implementation efforts. In discussions with external stakeholders one of the common complaints of some of the other WHO evaluation schemes is the length of time required (several months to several years) for products to be evaluated. Option 3 is the least costly and thus may be the easiest to support financially, however, given the lack of WHO and Expert Committee oversight, it may not provide too little technical support to Governments, implementers and donors in their regulation and or selection of HWT devices. Option 2 provides the greatest balance between cost and efficiency while also strengthening national regulation and complementary evaluation activities. Therefore this "middle of the road" option is described in greater detail in the following section.

Table 1. Evaluation scheme options

Option	WHO involvement in testing	WHO Expert Committee involvement	WHO final recommendations	Estimated duration [1]	Estimated Cost (USD)	Advantages	Disadvantages
1	-Manufacturer sends device and payment for testing to WHO; WHO then transfers payment and device to designated testing laboratory -WHO completes on-site inspections of manufacturing sites and testing laboratories	-Develops and approves harmonized testing protocol -Reviews testing results and issues recommendation letter -Oversees on-site inspections -Meets annually	-WHO issues formal letter regarding performance -WHO publishes list all tested devices and performance level achieved online	12 months	2 000 000 (Includes one full-time WHO professional.)	-rigorous oversight -harmonized protocol allows for comparability -full time WHO staff member can respond to issues as they arise	-costly -formal rules and regulations of WHO does not allow for rapid response
2	-Device and payment sent directly to the testing laboratory designated by WHO	-Develops and approves harmonized testing protocol -Develops criteria for designating testing laboratory -Meets annually	-WHO publishes list all tested devices and performance level achieved online	6 months	800 000 (Includes one full-time WHO professional.)	-harmonized protocol allows for comparability -full time WHO staff member can respond to issues as they arise	-less rigorous in regards to oversight of testing laboratories
3	-Device and payment sent directly to one of several laboratories	-Develops criteria for determining list of testing laboratories -Does not issue harmonized protocol -Meets initially and on ad-hoc basis	-WHO provides link to testing laboratories, where evaluation results may be listed (protocols may or may not be publicly available)	3 months	400 000 (Includes only one part-time WHO professional).	-least costly	-very difficult to compare results from different labs without harmonized protocol -lack of WHO involvement may lead to false claims/lack of credibility

1: This is an estimated time and is based on a number of factors including type of HWT technology and associated test protocol (i.e. filters require more through-put and testing to ascertain performance during the lifetime of the device).

4. Components of preferred scheme (Option 2)

Given the factors highlighted in Table 1, the preferred option which balances costs and efficiency with credibility and rigour is Option 2. The specific components of this option are discussed in further detail below and include (1) establishment of Evaluation Secretariat and Expert Review Committee, (2) call for manufacturer submissions, (3) technical submission to laboratory and costing, (4) evaluation of product, and (5) independent appraisal of evaluation outcomes and recommendations.

4.1 Establishment of Evaluation Secretariat and Expert Committee

An Evaluation Secretariat will be established to oversee the Scheme functions and provide strategic direction. It is envisioned that one full time WHO staff member will coordinate the activities of the Evaluation Secretariat. In addition, an independent Expert Review Committee will be established. This Committee will initially have three main aims: (1) develop criteria for inclusion as a collaborating laboratory, including procedures for maintaining status; (2) select initial collaborating laboratory; and (3) develop harmonized laboratory protocols and reporting of results. Specific terms of reference will be created for this Committee, consisting of no more than 8 members, all with extensive knowledge in microbiology, drinking-water treatment and laboratory testing. Members will be required to complete the WHO Declaration of Interest form and be available for meetings twice a year to review evaluation reports from the collaborating laboratory and make recommendations on performance of HWT.

Initially, only one laboratory would be selected based on the criteria developed and approved by the Expert Committee (see Appendix 1 for draft criteria). Limiting the initial number of labs to one is important for simplifying scheme functions and ensuring timely review of evaluation results. The precedent for using one lab for a particular type of evaluation has been established by both WHOPES and the WHO Rapid Evaluation of Malaria Diagnostics.

In later phases, depending on the demand for testing and as laboratories become more equipped and advanced in the developing world, additional laboratories may be selected to participate in the Scheme. Existing WHO Collaborating Centres and the WHO Global Laboratory Director (GLaDMap)[5] would serve as the starting point for identifying candidate laboratories. Examples of potential candidate laboratories include the National Science Foundation (USA)[6], and DHI (Denmark)[7], and the National Environmental Engineering Research Institute (India)[8].

One harmonized set of protocols would be used to conduct the evaluation. This protocol would be proposed by the collaborating laboratory and revised and agreed upon by the Expert Committee. The protocols would be based on the evaluation principles outlined in the WHO document. Specific items for consideration in the protocols include sufficient microbiological challenge testing to enable categorization of devices into one of three

[5] WHO, GladMap. http://www.gladmap.org
[6] NSF International. http://www.nsf.org/
[7] DHI Group. http://www.dhigroup.com/
[8] National Environmental Engineering Research Institute. http://www.neeri.res.in/

performance tiers, reference pathogens, mimicking of a range of source water quality conditions, and testing products over the entire expected lifetime of use. Once approved by the Expert Committee, harmonized protocols would be made available to the public and for use in national laboratories. Such laboratories would not be official evaluation scheme labs and therefore results from these would not be acted upon by the Expert Committee. However, use of such protocols would be one way to build national capacity and allow for complimentary analyses of technologies made by local manufacturers without sufficient resources to submit for international evaluation.

4.2 Call for manufacturer submissions

Manufacturers of HWT technologies would be invited to submit devices and supporting technical documentation to the selected Collaborating Laboratory. A formal call of submissions detailed in an expression of interest (Appendix 2) would be sent through various channels, including but not limited to relevant WHO listserves and newsletters[9], WHO webpages, WHO and UNICEF regional and country offices and at relevant drinking-water and public health conferences and events[10]. These calls would be time limited and conducted with regularly. Grouping the calls and evaluations in batches would increase the efficiency of review by the Expert Committee and allow for all involved stakeholders to plan accordingly. For more information on the timing of each component of the scheme refer to Appendix 3.

In submitting devices manufacturers would agree to pay all fees related to shipping devices to the collaborating laboratory and those costs associated with the evaluation itself. Several major manufacturers of HWT expressed the sentiment that the benefits of public recognition for meeting WHO recommendations would outweigh evaluation costs.

All manufacturers would be required to submit detailed documentation of their technologies to ensure a minimum level of performance had been achieved before undergoing evaluation in the laboratory. In addition, manufacturers would be required to sign a WHO Standard Confidentiality and Material Transfer Agreements. Such an agreement would allow WHO to publish the results of the evaluation and explicitly prohibit manufacturers from using the WHO name and logo on the product itself and/or in any promotional materials. An example of such an agreement is the one used for the WHO/TDR-FIND Malaria Product Testing Programme[11].

Those manufacturers that have already had their technologies reviewed by recognized testing agencies, such as the NSF, would be invited to submit these results. These would then be sent to the collaborating laboratory for review and determination of additional testing based on the harmonized protocol and three levels of performance outlined by

[9] WHO Water, Sanitation, Hygiene and Health Newsletter, UNICEF/WHO International Network on Household Water Treatment and Safe Storage Newsletter.

[10] Possible venues include the World Water Forum 2012 for which WHO is coordinating activities relating to household water treatment, the Singapore International Water Week, and the Stockholm World Water Week.

[11] http://www.wpro.who.int/NR/rdonlyres/5B8674BB-1377-4945-9B2B-C8FFA201F0EF/0/EOIAnnex1_2_3_AppendixA_B_C_D.pdf

WHO. For example, additional microbiological challenge testing would be needed to determine if a device that met NSF's minimum log reduction of 6/4/3 for bacteria, viruses and cysts also met WHO's "highly protective" level of performance of 4/5/4 log reduction for the same three pathogen groups.

4.3 Evaluation of technology in collaborating laboratory

Based on the approved protocols, the collaborating laboratory will evaluate the technologies. The results would be presented in a standard structure based on a template developed by the laboratory and approved by the Expert Committee. These reports would be publicly available. In addition, the raw data would be made available upon request and could be used for training purposes to develop national capacities in laboratory testing, data review and data analysis.

4.4 Review of evaluation and recommendation

All laboratory evaluation reports will be sent to the Expert Committee for review and appraisal. The Committee will meet twice a year to discuss the laboratory evaluation reports and make a recommendation, based on the principles WHO has set forth on evaluating HWT. Recommendations will be described in a formal report published online. Such recommendations will not constitute a certification of technologies and the WHO logo will not be used in association with the laboratory report or packaging/marketing of the technology. The precedence and legal approval for such recommendations has been established by the WHO evaluation schemes mentioned previously.

4.5 Role of Main Stakeholders

The role of the key players in the evaluation scheme is briefly highlighted below. These will be elaborated upon through Terms of Reference created with the Expert Committee, and Collaborating Laboratory.

- WHO
    - manage Secretariat functions;
    - convene Expert Committee; and
    - liaise with Member States on Expert Committee recommendations and implications for national regulations and programmes.
- Expert Committee
    - establish criteria for collaborating laboratories;
    - establish criteria for submission of interest from manufacturers;
    - review and approve laboratory protocols;
    - review and make recommendations on laboratory evaluation reports.
- Collaborating laboratory
    - develop global laboratory protocols based on principles outlined in WHO document; and
    - conduct evaluations of HWT.
- Private Sector/Manufacturers

- provide annual contribute to pooled trust fund to support Secretariat, meetings and capacity building activities;
- adhere to submission and evaluation process; and
- use recommendation as specified (i.e. cannot use WHO logo as a formal certification of device).

- Governments
  - participate in workshops and meetings regarding evaluation outcomes and implications for regulations; and
  - provide human resource and financial support to develop national laboratories;
  - facilitate research permissions for local off-the-shelf testing.
- Implementers
  - consider preferential selection of recommended devices in projects and programmes; and
  - assist in educating individuals about recommendations and health-based targets.
- Donors
  - provide annual contribute to pooled trust fund to support Secretariat, meetings and capacity building activities; and
  - engage in capacity building efforts through existing ongoing health, water and development programmes.

5. Scheme budget

The proposed budget for Phase I (2012-2013) is approximately 800 000 USD. The specific costs are detailed in **Table 2** on the following page. The majority of the budget will require regular funds for maintaining the Secretariat and convening the Expert Committee. Additional funds will be needed for providing a subsidy to smaller manufacturers and capacity building workshops. In order to save costs, maintaining the website, publication of harmonized protocols and development of training materials will be carried out through WHO in-kind services and with input from Network working groups.

As stated, the full costs for the shipping of products and actual evaluation will be borne by the manufacturer. Some funds are included in the budget to subsidize smaller manufacturers who cannot afford the full evaluation fee but have products that qualify for evaluation. Costs for shipping of technologies and actual testing are expected to range between 20,000-30,000 USD. The range represents the varying effort needed to test different technologies. For example, evaluating a membrane over the expected or claimed lifetime would require considerable more testing and consumables compared to a single use product, such as chlorine.

Table 2. Estimated Phase I evaluation scheme costs

Over the 2-year period 2012-2013 (in '000s of US$)

	2012	**2013**
Activities and outputs	(Amounts in US$ '000s)	
Evaluation scheme secretariat services		
Staffing: WHO P4	260	260
Maintaining website (in-kind services from WHO)	0	0
Expert Committee Meetings (1 x per year; additional video and tele-conferences as needed)	30	30
Publication of harmonized protocols (online only)	0	0
Sub Total	**290**	**290**
Evaluation associated services		
National/regional capacity building workshops on risk-based evaluation and national regulation (2 x year)	50	50
Development of training and outreach materials (Secretariat with input from consultant)	10	10
Sub Total	**60**	**60**
Grand Sub Total	**350**	**350**
WHO overhead (13%)	46	46
GRAND TOTAL	**396**	**396**

The primary funding mechanism for the scheme would be annual contributions sought from a variety of stakeholders. These contributions would be pooled in the trust fund which would support the Scheme Secretariat and capacity building activities. Levels of support could be established to accommodate the varying financial capacities and interest of contributing partners. For example the highest tier could be 100 000 USD, followed by 50 000 USD and 10 000 USD. With four top-tier annual paying members, six middle-tier contributors, and ten bottom-tier contributors, the scheme would be fully funded. To ensure financial sustainability, contributing partners would be asked to commit to at least three years of consecutive funding.

6. Additional Considerations

It is recognized that many small manufacturers may not be able to afford the cost of evaluation and thus be excluded from the scheme. While a few of these may benefit from the subsidy, demand may exceed available funds. It is also recognized that in situations of emergencies the use of locally available and manufactured devices can be advantageous for fostering development of the industry and increasing consistent and correct use both during and after the emergency. For example, several humanitarian agencies, including UNICEF, Potters without Borders, and the Red Cresent Society, are supporting the local manufacturing of ceramic filters in Southern Somalia for distribution among populations displaced by the Horn of Africa crisis and without safe drinking-water.

For these two situations a simplified "short-track" could be established where products are not actually sent for evaluation at the collaborating laboratory, but a desk review of the available evidence on performance would be examined and recommendations

provided. In addition, simple field-tests could be conducted to validate that the technologies are removing pathogens of concern sufficiently to result in public health gains. Such technologies would not be categorized in the three tiers as those evaluated in the Scheme, but such a review could prevent wide distribution of poor performing devices while supporting those devices that provide public health benefit to continue to meet local needs.

Another consideration concerns devices for which the quality may be highly dependent on locally sourced materials and manufacturing processes. One such example is ceramic filters. The market for these filters is increasing as are the number of local manufacturers, currently estimated at about 45 globally. Given the potential variability in the manufacturing and as a result the performance of such products, evaluating such technologies only once, may be insufficient and for most local manufacturers prohibitively expensive. One alternative would be to have a manufacturing checklist that could be used to independently assess the quality of such factories. The basis for such a checklist already exists in the document *Best Practice Recommendations for Local Manufacturing of Ceramic Pot Filters for Household Water Treatment* (The Ceramics Manufacturing Working Group, 2011). Funding for finalizing the checklist and conducting such audits, which could be managed at a national level, would need to be further considered.

7. Next steps

The immediate next steps are to circulate this discussion note among key stakeholders to gain input on the key components and obtain financial backing for the trust fund in order to establish the Secretariat. These items along with others are detailed below. Ideally these next steps would occur in December 2011 and Q1 of 2012.

- Circulation of proposal and final input among
    - WHO Legal Department
    - Network Advisory and Public Private Partnership Groups
    - Microbiology and testing experts
- Approval of scheme by WHO Legal Department
- Securing scheme finances
    - Requests to manufacturers, donors and foundations to contribute initial annual dues to Scheme trust fund
    - Great specification of costs to manufacturers for most common technologies
- Establishment of collaborating laboratory
    - Finalize criteria for inclusion as testing laboratory
    - Candidate list of laboratories
    - Selection of Phase I laboratory
    - Initial and continuing approval of laboratory
- Establishment of Expert Committee
    - Develop Terms of Reference and invite candidates
    - Hold first meeting to review and approve harmonized protocol

8. References

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Waddington, et al., 2009. *Water, sanitation and hygiene interventions to combat childhood diarrhoea in developing countries*. International Initiative for Impact Evaluation. Synthetic Review 001.

Appendix 1: Draft criteria for selection of collaborating laboratory

The following provides the key considerations for selecting the initial collaborating laboratory. These criteria will be reviewed and revised by the Expert Committee before finalized.

- at least 10 years of experience evaluating microbiological performance of HWT
- financially diverse and stable clientele (i.e. workload related to the WHO Evaluation Scheme must not comprise more than 25% of total workload)
- demonstrated ability to efficiently and effectively complete evaluations in a timely manner
- continually meet national and international laboratory standards (i.e. International Organization for Standardization Standards)
- demonstrated neutrality in regards to conflict of interest in major private sector interests
- agreement to use harmonized protocol and make results available to WHO and the public
- existing WHO Collaborating Centre and/or GladMap partner
- Others as developed

Appendix 2: Expression of interest

The following outlines the required items of an expression of interest which would be sent to all interested manufacturers.

1. General manufacturer and product information
    -Name and contact information of manufacturer
    -Contact information for corresponding representative of manufacturer
    -Product type and commercial name

2. Specific product information
    -Place of manufacture
    -Technical details of product materials and performance

3. Results from other laboratory evaluations
    -Summary of microbiological results
    -Details of testing (year, place, protocols used)
    -Raw data (upon request)

4. Signed agreement to abide by WHO legal requirements
    -Will not use WHO name or logo on promotional materials

All materials related to the EOI should be sent no later than XX, 2012 to:

Water, sanitation, hygiene and health
World Health Organization
20, avenue Appia
1211 Geneva 27
Switzerland
Tel: +41 22 791 XXXX
Fax: +41 22 791 41 59
Email:
With copy to hhwater@who.int

Appendix 3: Timeline and key milestones

The following presents an approximate timeline