

**Results of WHO survey on demand for testing in WHO Scheme to
Evaluate Household Water Treatment Technologies**

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Table of Contents

1.0	Introduction.....	1
2.0	Survey and methods.....	1
3.0	Results.....	1
3.1	Overview of manufacturers	2
3.2	Manufacturer markets by target group and geographical location	3
3.3	HWT Scheme knowledge and interest	4
4.0	Discussion/Conclusion.....	5
4.1	Significant demand	5
4.2	Subsidized testing	6
4.3	Benefits of participation	6
Annex 1	Survey Questions	7

1.0 Introduction

Household water treatment and safe storage (HWTS) is an important intervention to improve drinking-water quality and consequently improve health. HWT provides an interim solution for 768 million without access to improved drinking-water and billions without access to safe and reliable drinking-water¹. 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 pressing need for objective and health-based evaluation and regulation of HWT.

Until recently, there have been no international specifications by which to test performance claims of manufacturers against a health-based performance benchmark. However, based on recent WHO global performance recommendations², a WHO International Scheme to Evaluate Household Water Treatment Technologies has been established. The Scheme will guide WHO Member States and procuring UN Agencies in the selection of technologies and support national governments in a number of evaluation related functions. In order to determine the initial demand for testing of HWT in the newly established Scheme, WHO conducted a short survey of HWT manufacturers. This document summarizes the results from that survey.

2.0 Survey and methods

The survey was developed with input from the WHO/UNICEF International Network on Household Water Treatment and Safe Storage (the Network) and contained 14 questions concerning HWT technologies, target markets and distribution, and manufacturer's awareness and interest in the WHO Scheme. The main objective was to understand the existing products in the market, where they are being manufactured and distributed and interest in submitting products to the WHO Scheme.

An online survey tool was created with multiple choice and open ended questions. The survey was sent via the web in August 2013 to over 1,200 Network listserv subscribers, as well as other groups who distributed the survey to their listserves, including Water Quality Association (WQA) and the Water Conditioning and Purification International (WC&P) magazine. In total, 123 manufacturers responded to the survey during a six week period (August-September 2013).

3.0 Results

The results are summarized below according to three themes: overview of manufacturers, technologies and markets, and WHO Scheme knowledge and interest.

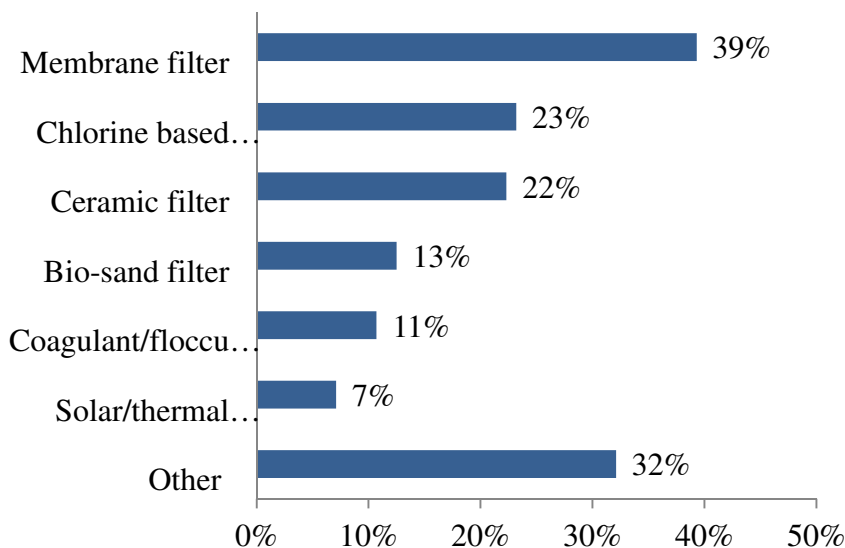
¹ WHO/UNICEF, 2013. Progress on sanitation and drinking-water, 2013 update. World Health Organization, Geneva.

² WHO, 2011. Evaluating household water treatment technologies: health based targets and microbiological performance specifications. http://www.who.int/water_sanitation_health/publications/2011/household_water/en/

3.1 Overview of manufacturers

Seventy-one (71) manufacturers, from five of the six WHO Regions, provided their location of manufacture information. Half (50%) are from WHO's Region of the Americas office and the balance are from the European Region (17%); Western Pacific Region (14%); South-East Asia Region (13%); and the Africa Region (6%) (Q14, n=71). Of the respondents, 67% classified themselves as for-profit entities, 13% as non-profit; and the remaining, 20%, as "other", which may include those companies that are for profit but have a unique structure that focuses on social impact (Q2; n=119).

The survey respondents reported manufacturing a wide variety of product technologies with filtration being most common at 74%. Filtration included membrane (39%), ceramic (22%), or bio-sand (13%) technologies (Q3; n=112). A summary of all responses on type of technology manufactured is found below in Figure 1.



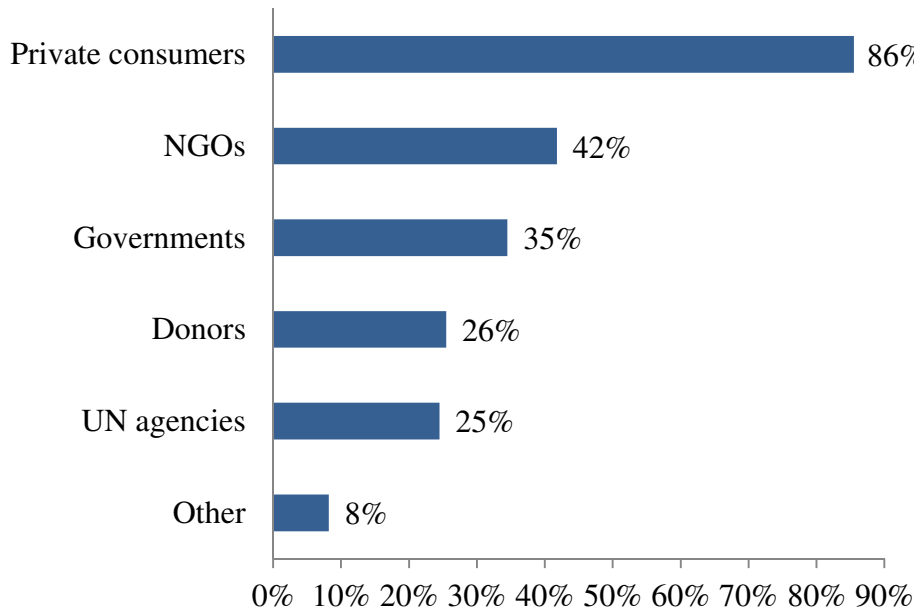
(Source: Q3; n=112)

Figure 1: What kind of drinking water treatment product does your company manufacture?

According to the responses, a majority of the manufacturers indicated they had conducted some microbial performance testing of their product. Of the 107 manufacturers who answered this question, 91% had either already undergone or were in process of undergoing performance testing (Q8; n=107). The rigour of testing varied widely, from manufacturers reporting evaluating their product against indicator fecal bacteria such as fecal coliforms to testing performance with actual pathogens, however detailed performance data by product was outside of the scope of this survey. National and in-country testing was the second most common arena for testing (36%). Again, the rigour of such testing is also highly variable and often does not include microbial performance evaluation and if it does, is limited to faecal indicator bacteria (Q9; n=81).

3.2 Manufacturer markets by target group and geographical location

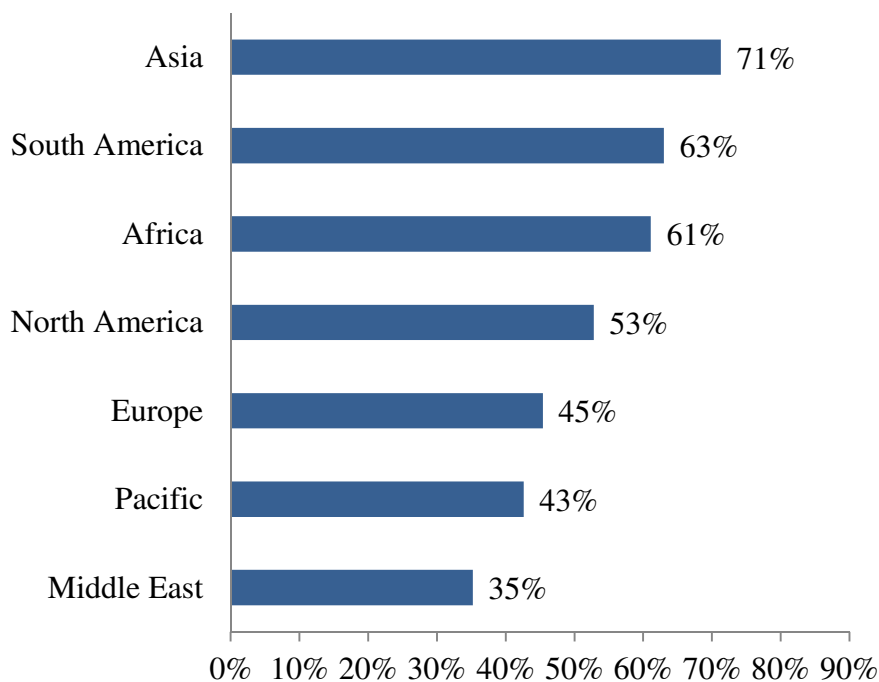
At 86%, private consumers represented the largest targeted market for the manufacturers that responded to the question. Non-governmental organizations, at 42%, represented the second largest market, followed by governments at 35%. Manufacturers could indicate more than one market and therefore the results sum to greater than 100. The summary of all the targeted markets are found in Figure 2 (Q6; n=110).



(Source: Q6; n=110)

Figure 2: *What are the primary markets for your device?*

Survey results indicate many manufactures have multiple geographic destinations for their products (Figure 3). The largest geographical market of interest for responding manufacturers is Asia at 71%, followed closely by South America, at 63%, and Africa, at 61% (Q7; n=108).



(Source: Q7; n=108)

Figure 3: What regions do you sell/plan to distribute your device?

3.3 HWT Scheme knowledge and interest

Nearly half (49%) of the respondents were familiar with the WHO Scheme before taking the survey (Q4; n=111). Of those, the majority (47%) indicated they learned about the Scheme through the WHO/UNICEF International Network on Household Water Treatment Newsletter. Other sources of information included colleagues (20%) and WHO workshops or meetings (13%) (Q5; n=55).

Over three fourths (79%) of the respondents indicated some interest in submitting their product for testing to the WHO Scheme, with 55% of those expressing that they were ‘*very interested*’. Only 6% indicated they had very little interest and none indicated that they had no interest at all (Q10; n=100). Of those interested, 58 manufacturers (64%) indicated they would be prepared to submit for the first round of testing scheduled to occur in Q1 of 2014 (Q11; n=90).

Although an overwhelming interest in submitting products for the first round of testing was expressed, respondents also stressed the need to understand the value of such testing before investing. This concern was particularly strong for manufacturers who have already invested in certification under other testing protocols and/or laboratories.

Cost to participate was also reported to be an important consideration. Survey participants were asked to consider five cost of participation ceiling considerations: 20,000; 40,000; 60,000; 80,000 or 100,000 USD. The actual testing itself will cost on average, 35,000 USD, and

therefore the ceilings represent a range from subsidized testing to testing and a contribution to the Secretariat costs of the Scheme. As shown in Table 1, as the cost of participation increases, the ability or willingness of manufacturers to participate decreases. Seventeen percent (17%) of those surveyed who would be willing or able to participate at the lowest cost, \$20,000 USD or less, while only 2% at the highest cost, \$100,000 USD.

Table 1: Would you participate in the program if it cost 20,000 USD or more?

Cost (USD)	Expected participation
\$20K	17%
\$40K	13%
\$50K	8%
\$80K	3%
\$100K	2%

(Source: Q13; n=90)

Manufacturer comments on costs included the need to know more about the test details in order to assess what is a reasonable cost for testing and to understand better their sales potential before investing in testing. Additionally, there were inquiries about potential for WHO subsidize some of the testing costs for manufacturers who cannot afford the full cost of testing.

4.0 Discussion/Conclusion

There are three main important findings and implications from the survey results. These include: (1) significant demand exists for an international HWT evaluation scheme, (2) inclusion of smaller manufacturers necessitates subsidizing pricing and (3) benefits exists for manufacturers, procurers and users of HWT. These three issues are further elaborated below.

4.1 Significant demand

The survey results clearly indicate that there is large number of HWT manufacturers targeting markets throughout the globe which have a strong interest in performance testing and evaluation. With 58 manufacturers indicating there were prepared to submit products to Round I of testing it is evident that the establishment of the Scheme is timely and very much needed. The details of testing, including the procedures for evaluation and requirements for submission, will be posted on the WHO website (http://www.who.int/water_sanitation_health/en/). The first call for testing will be issued in February 2014. Information on technical details of testing can be found in the June 2013 meeting report of the Scheme Independent Advisory Committee³.

³ WHO, 2013. Meeting of the Independent Advisory Committee to the WHO Scheme to Evaluate HWT. http://www.who.int/household_water/resources/WHOSchemeEvaluateHWT_IACMtg_June2013_Final.pdf

4.2 Subsidized testing

It is recognized that small manufacturers, often located in developing countries, serve an important segment of the HWT market. As the results indicate, such manufacturers may not have the resources to afford the full cost of testing which will range from 25,000-40,000 USD depending on the type of technology. Donor funds have been made available to provide partial subsidies for manufacturers that meet specific criteria. Such criteria include: size and capital resources of the manufacturer, manufacturer country of origin/location (with priority to those countries where safe drinking-water is least accessible), cost per litre of treated water delivered on site, and plan for scale-up, application and distribution.

4.3 Benefits of participation

There are a number of benefits of the Scheme. First, manufacturers will have an objective and internationally recognized evaluation of their product. This will allow them to effectively target and distribute their product in a number of resource constrained countries. Second, governments, UN agencies and other procurers of HWT will be provided with a list of products that meet one of the three performance criteria and thus be able to make an informed choice about product selection. Considering that rigorous assessments of HWT microbiological performance requires advanced laboratory equipment and know-how along with sophisticated institutional structures often lacking in resource constrained countries, providing such information directly to government will fill a large existing gap. Third, users of products that meet one of the WHO performance criteria will have assurance that their health is indeed being protected through regular use of such products. In addition, the Scheme will produce technical tools and provide training to build the capacity of national laboratories in resource-constrained settings to allow for complimentary testing. Finally, it is hoped and antidotal evidence suggests that the Scheme will spark new innovation in HWT, influencing the development of low-cost, highly performing products that are user friendly and appropriate for resource constrained settings.

Annex 1: Survey questions

1. Are you a manufacturer of a microbiological reduction drinking water treatment product?

Yes

No

2. What is the status of the organisation?

Non-profit

For-profit

Hybrid (i.e. a social impact oriented business)

Other (please specify)

3. What kind of drinking water treatment product does your company manufacture?

Chlorine based product

Bio-sand filter

Membrane filter

Ceramic filter

Solar/thermal product

Coagulant/flocculant

Other (please specify)

4. Have you heard about the WHO Scheme to Evaluate Household Water Treatment Technologies?

Yes

No

5. If yes, where did you hear about the Scheme?

International Network on Household Water Treatment Newsletter

WHO workshop or meeting

Colleague

Other (please specify)

6. What is your primary market(s) for your device? (Please select all that apply)

Private consumers

UN Agencies

Donors

NGOs

Governments

Other (please specify)

7. What regions/countries do you sell/plan to distribute your device?

North America
Europe
African Continent
South America
Middle East
Pacific
Asia
Specific countries

8. Have you had your product performance tested?

Yes
No
In process

9. If yes, what organisation/standard that your product was tested for/against?

10. How would rate your interest in submitting your product for testing?

Not interested	Not very interested	Neither interested or uninterested	Somewhat interested	Very interested
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11. Would you be interested in submitting in the First Round (October/November 2013)?

Yes
No
Please explain:

12. What would you expect to pay to have testing completed and have your product listed on the WHO website?

13. Would you participate in this programme if it cost 20,000 (USD)

Would you participate in this programme if it cost 40,000 (USD)

Would you participate in this programme if it cost 60,000 (USD)

Would you participate in this programme if it cost 80,000 (USD)

Would you participate in this programme if it cost 100,000 (USD)

Yes

No

Please explain:

14. Please provide the following information:

Name:

Company/Country:

Email Address: