

# WASH: The silent weapon against NTDs

## Working together to achieve prevention, control and elimination

Water, sanitation and hygiene (WASH) are a crucial but all too often underplayed part of the prevention and control of Neglected Tropical Diseases (NTDs). Diseases including Trachoma, Soil-Transmitted Helminthes (STH) and Schistosomiasis all demand practical WASH interventions so that their prevention, treatment and ultimately their elimination can be achieved by the international community as soon as possible.

Table 1 outlines, in order of significance, the clear linkages between WASH and NTDs in terms of their transmission, control and prevention.

**Table 1. The link between WASH and NTDs**

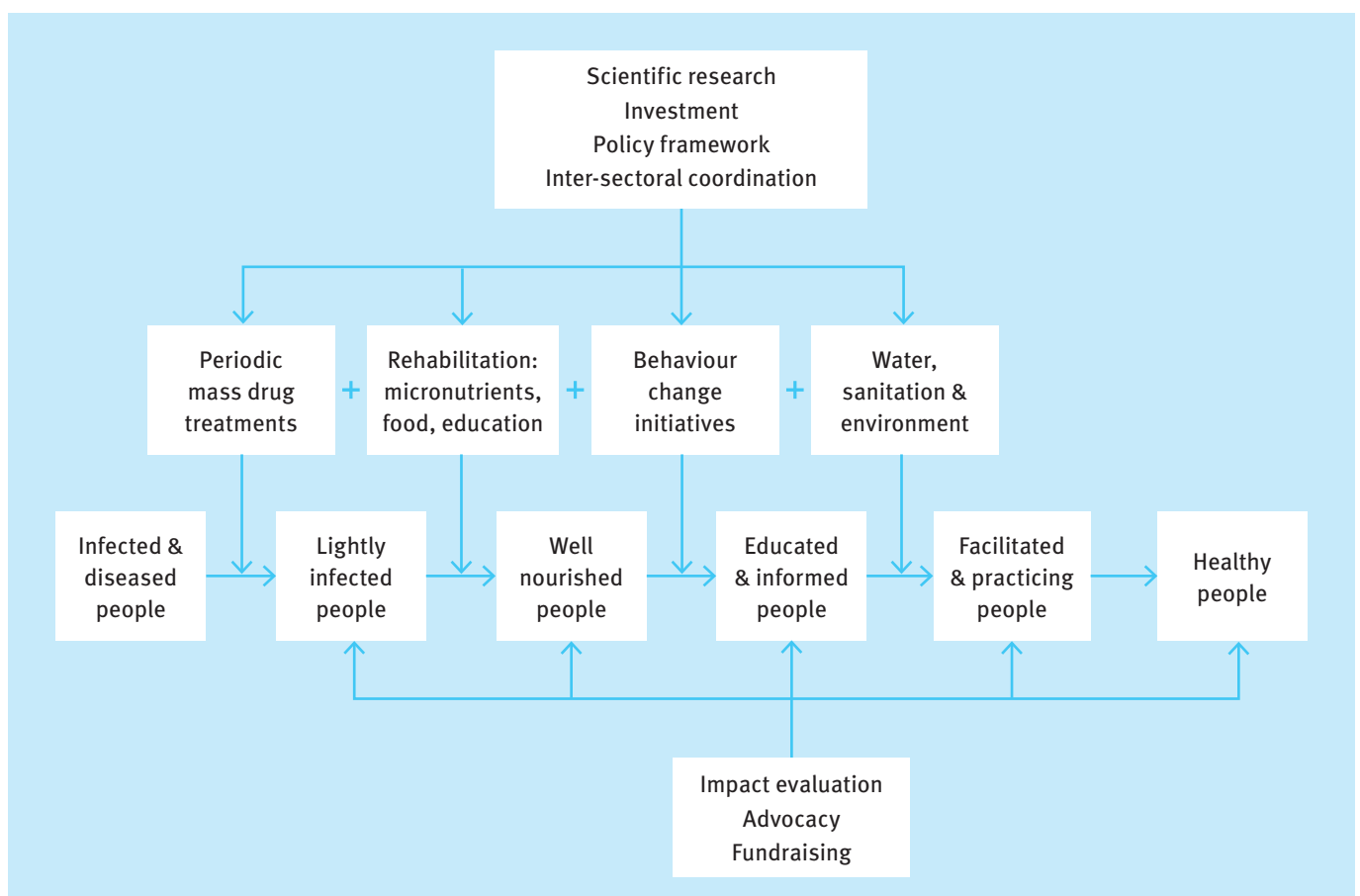
Disease	Link aspect	Transmission, control and prevention
<b>Trachoma</b> <sup>1</sup>	Sanitation, hygiene, water	Transmission between infected persons through flies. Prevention through promotion of face washing of children, improved access to clean water, and proper sanitation for disposal of human waste to reduce fly population and transmission.
<b>Soil-Transmitted Helminthes – intestinal worms</b> (ascariasis, hookworm, trichuriasis) <sup>2</sup>	Sanitation, hygiene	Eggs ingested through contaminated vegetables or water, or directly by children placing soil in mouth; hookworm larvae penetrate skin when walking barefoot on contaminated soil (no direct person-to-person transmission). Prevention through improved sanitation and hygiene (hand washing).
<b>Schistosomiasis</b> (bilharzia) <sup>3</sup>	Sanitation, water	Infection via eggs of worms in human faeces and urine deposited in water where emerging larvae enter freshwater snails. After development in snail, larvae forms emerge in water and penetrate skin during contact with infested water. Control measures include snail control, improved sanitation and health education and reduced contact with surface water.
<b>Dracunculiasis</b> (Guinea worm) <sup>4</sup>	Water quality	Transmitted through ingestion of water fleas in contaminated water. Control measures: water source protection (protected wells/bore holes, treatment of contaminated water sources with insecticide temephos and water filtration; case containment; health education surveillance and reporting.
<b>Cysticercosis</b> <sup>5</sup>	Hygiene, sanitation, water	Adult tapeworms in humans produce eggs that contaminate areas, allowing pigs to become infected. Larval stages develop in pigs, which are then consumed by humans. If humans consume eggs they also develop cysticercosis or neurocystercosis (a major cause of epilepsy). Prevention requires strict meat inspection regimens, health education, thorough cooking of pork, sound hygiene, and adequate water and sanitation by preventing pig access to human waste.
<b>Echinococcosis</b> <sup>6</sup>	Hygiene, water quality, (animal) sanitation	Humans acquire infection from eggs from infected dogs that are infected by ingestion of hydatid cysts at slaughter (usually from sheep or other herbivores). Prevention: avoiding food or water contaminated by dog faeces; hand washing with soap after handling animals. Control based on control of slaughter practice preventing dogs accessing offal.
<b>Endemic Treponematoses</b> (inc. Yaws) <sup>7</sup>	Sanitation, hygiene	Transmitted through skin contact with an infected person. Overcrowding, poor personal hygiene and poor sanitation facilitate spread.

Disease	Link aspect	Transmission, control and prevention
<b>Leptospirosis</b> <sup>8</sup>	Water	Transmitted through contact with animal (rat) urine or with water contaminated with animal urine. Epidemics occur in rural areas associated with flooding.
<b>Lymphatic Filariasis</b> (elephantiasis, caused by roundworm) <sup>9</sup>	Sanitation (prevention), hygiene (treatment)	Parasites transmitted by mosquitoes. Poorly constructed latrines increase presence of LF-transmitting Culex mosquito vectors. Patients with chronic disabilities resulting from LF are advised to maintain rigorous hygiene and take necessary precautions to prevent secondary infection and aggravation of the condition; availability of water for limb washing important in reducing severity of LF.
<b>Human African Trypanosomiasis</b> (Sleeping Sickness) <sup>10</sup>	Sanitation (prevention), hygiene (treatment)	Transmission between infected persons through flies. Prevention includes promotion of face washing of children, improved access to clean water, and proper sanitation for disposal of human waste to reduce fly population and transmission.
<b>Chagas Disease</b> <sup>11</sup>	Food hygiene	Caused by a parasite transmitted by triatomine ('kissing') bugs, whose presence is linked to poorly constructed housing (not WASH). Vector control is the key preventive method, but good hygiene practices in food preparation, transportation, storage and consumption are also recommended.
<b>Dengue</b> <sup>12</sup>	Water storage management	Virus transmitted by mosquitoes. Mosquito control includes covering, emptying and frequent cleaning of domestic water storage containers; applying appropriate insecticides to outdoor water storage containers. Epidemic control through insecticide spraying.
<b>Foodborne Trematode Infections</b> (liver/lung flukes) <sup>13</sup>	Food hygiene	Worm eggs in human faeces produce larvae that develop in aquatic snails that produce larvae that develop in food products (fish, crabs/crayfish, water plants). Prevention includes good food preparation practices, safe disposal of human faeces to avoid eggs entering snail-infested water; changing food preparation practices.
<b>Onchocerciasis</b> (river blindness) <sup>14</sup>	Water resource management	Parasite transmitted by blackfly in riverside locations. Measures for blackfly control include insecticide treatment of larval breeding sites (fast flowing water) but including water-flow manipulation if possible (dam sites, spillways).
<b>Buruli Ulcer</b> <sup>15</sup>	None	Bacterial infection, transmission route not established.
<b>Leishmaniasis</b> <sup>16</sup>	None	Many different forms and complex epidemiology. Transmission by sand fly bites. Prevention through vector control.
<b>Leprosy</b> <sup>17</sup>	None	Not highly infectious, transmitted via droplets, from the nose and mouth, during close and frequent contact with untreated cases.
<b>Rabies</b> <sup>18</sup>	None	Transmitted to humans from infected animals through contact with infected saliva, through bites or scratches.
<b>Scabies</b> <sup>19</sup>	None	Transmission through skin-to-skin contact.

The link between WASH and the diseases known as NTDs has been known for many years. The Rockefeller Sanitation Commission was initiated in the United States almost 100 years ago to help define the challenges of hookworm elimination and acknowledged the important role that sanitation plays in interrupting the transmission routes of STHs. The Commission concluded that the “cure alone is almost useless...because the patient can go out and immediately pick up more hookworm disease. The cure should be accompanied by a sanitation campaign for the prevention of soil pollution”<sup>20 21</sup>. This was one of the first studies to realise this. Many more have since supported the proposition that while drug-based treatments may offer a control option, WASH is a necessary part of the set of tools to ensure that NTDs are prevented and the risk of is sustainably eliminated.

## Integration: developing a common understanding

Before discussing how to integrate across the WASH and NTD sectors, it is essential to have a common understanding of terms such as integration. Within the NTD literature, integration often refers to the delivery of multiple drugs for the treatment of several NTDs at the same time—combined preventative chemotherapy (PCT)<sup>22 23 24</sup>. This definition of integration differs to the use of the term in some development sectors, including WASH, in which it is referred to as “the delivery of a range of interventions through coordination across a variety of sectors and with participation of all relevant stakeholders to achieve a common goal”<sup>25</sup>. How this latter explanation of integration could manifest in a program to prevent and control NTDs is demonstrated in Figure 1. This conceptual model explains that interventions including mass drug administration, nutrition, education, behaviour change and WASH should be implemented together to achieve ‘healthy people’ as the end goal in the long-term. Both approaches (PCT and WASH) provide opportunities for integration and can operate alongside one another to achieve the common goal of NTD control and elimination<sup>26 27</sup>. Indeed, they should be “coordinated and combined with the goal of maximising efficiency”<sup>28</sup>.



**Figure 1. A conceptual model of the main components of an integrated NTD prevention and control program<sup>29</sup>**

## NTD control and prevention strategies: WASH is recognised as essential

The position of WASH within many of the NTD control and prevention strategies is clear and upfront. The World Health Organisation (WHO) has taken a lead role in coordinating the prevention, control, elimination and eradication of a number of NTDs, publishing ‘*A Roadmap for Implementation: accelerating work to overcome the global impact of Neglected Tropical Diseases 2012*’ which outlines six key NTD interventions, including the provision of safe water, sanitation and hygiene<sup>30</sup>. Recognition of WASH at this overarching strategy level is promising as it suggests a commitment that paves the way for disease-specific strategies and program implementation that also prioritise WASH.

As Table 1 outlines, the evidence of the link between NTDs and WASH is sharpest for Trachoma, STHs, Schistosomiasis and Guinea Worm. The guiding documents and global strategies for preventing and controlling each one of these NTDs acknowledges that WASH must play an essential role, as highlighted below.

### Trachoma

In 1998, the WHO formed the Alliance for the Global Elimination of Trachoma by 2020 (GET 2020) to roll out the *SAFE strategy*, a plan to eliminate Blinding Trachoma by 2020. This strategy links the four components of Surgery—Antibiotics—Facial Cleanliness—Environmental Improvements (including sanitation) to holistically address the problem of Trachoma.

### Soil-Transmitted Helminthes (STHs)

The *Comprehensive Strategy for the Control and Prevention of Worm Infections* jointly published by the WHO and UNICEF includes the provision of safe water supply and adequate sanitation as a necessary control strategy<sup>31</sup>. The *WASHED (Water, Sanitation, Hygiene Education, Deworming) framework* published by Children Without Worms (CWW) is a sector-based comprehensive approach to STH control that advocates for water, sanitation and hygiene interventions to break the cycle of STH reinfection<sup>32</sup>.

### Schistosomiasis

In May 2012, the World Health Assembly (WHA) approved a new resolution on the elimination of Schistosomiasis. The resolution urges Member States to ensure access to essential drugs, mobilise resources to sustain control activities and to broaden Schistosomiasis control measures to other disease control programs and health systems. Importantly, it also promotes access to safe WASH and health education as essential for the control of this disease<sup>33</sup>.

### Guinea Worm

The WHA adopted a resolution in 2011 seeking to finalise the eradication of Guinea Worm. Set in 1981, this goal is within reach thanks to partnerships between the United States Centers for Disease Control and Prevention (CDC), UNICEF and The Carter Centre who initiated the *Guinea Worm: Countdown to Zero program*. The resolution recognises that to bring this disease under control, water resource management and the distribution of filters is required to eliminate the Guinea Worm larvae from entering the host through ingestion<sup>34</sup>. The elimination of Guinea Worm is in sight with only 500 reported cases estimated for 2012<sup>35</sup>.

## Snapshots of integration between WASH and NTDs

The integration of WASH into the prevention and control strategies of various NTDs has translated to some practical good practice programming examples by these two sectors. These snapshots below are examples where the link between WASH and NTDs has been respected from the beginning, where co-implementation of WASH and NTD programs has occurred, and where multiple health interventions including WASH have been rolled out with success. From these snapshots, some important lessons can be drawn.

### WASH for worms in Timor Leste<sup>36</sup>

The University of Queensland, in partnership with the Nossal Institute for Global Health, Menzies School of Health Research and Wateraid Australia, is currently conducting research into the impact of WASH interventions on STHs. The research hypothesises that “a community-based WASH program will reduce infections...with intestinal parasites above that achieved through mass chemotherapy with... albendazole”<sup>37</sup>. A randomised control trial (RCT) has been designed to determine if the reinfection of STHs is significantly reduced following a CLTS intervention in Timor Leste.

A recent WHO/UNICEF report has noted the disease load of STHs is between 25-30% in Timor Leste<sup>38</sup>, and interventions to prevent and control this disease in a sustainable way are necessary. Drawing out the real value of this WASH intervention for STH prevention is important and will add to the evidence base that supports the need for greater linkages between WASH and NTDs.

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### School Health and Nutrition programs by Save the Children<sup>39</sup>

Since 1998, Save the Children have implemented School Health and Nutrition (SHN) programs across numerous countries which integrate nutrition (including micronutrient supplementation), improved access to water and sanitation, treatment of NTDs (including deworming and Schistosomiasis control) and health education (including hygiene promotion) to improve children’s health and nutrition status to increase their attendance and performance at school.

This program is based on the *Focusing Resources on Effective School Health (FRESH) framework* which includes the following core components<sup>40</sup>:

- 1 School health policies that advocate for the role of teachers in health promotion and delivery;
- 2 Safe water and sanitary school environments;
- 3 Skills-based health education that promotes good health;
- 4 Access to health and nutrition services for school age children.

A SHN program was implemented by Save the Children in Bangladesh between 2002 and 2008 when a situational analysis revealed schoolchildren suffered from micronutrient deficiencies, worm infestations and regular bouts of diarrhoea. Only limited access to safe water and sanitation was available in local schools. To address these problems, Save the Children utilised the existing education infrastructure to deliver basic health and nutrition services, provide health education, improve the water and sanitation situation in schools and communities and build capacity to support and sustain these activities.

By the conclusion of the project, 127 schools in the region had been reached with an impact on over 33,500 schoolchildren. An end line survey was undertaken to assess the overall changes in children’s health and nutrition status and behaviours. It was found that the worm loads in these children were much lighter, that the school and household environment improved significantly with respect to water, sanitation and hygiene over the life of the project and that school attendance and completion rates were up.

Based on the success of the above program, Save the Children has been working with the Ministry of Health (MOH) and the Ministry of Education (MOE) of Bangladesh to expand the SHN programming nationally.

The SHN program introduced in 1999 in Nepal by Save the Children was similarly effective at improving the health and school attendance of children and by 2006, the Nepalese government had created and implemented a SHN strategy that embedded nutrition, NTD treatment and WASH interventions into the school environment. Nepal's Ministry of Education and Sports (MOES) and the Ministry of Health and Population (MOHP) developed a strategy in partnership with Save the Children that emphasised:

- the implementation of a comprehensive and standardised package of SHN interventions including WASH;
- building the capacity of teacher, health works and School Management Committees (SMC) including students at all levels.

As a result of this strategy, a small program that was reaching 10,000 children is now reaching 300,000 (and will eventually reach approximately 5 million children) with treatments for parasites, iron supplementation, safe drinking water, sanitation, hygiene and health education<sup>41 42</sup>.

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### Changing WASH behaviour to control STHs in Cambodian schools<sup>43 44</sup>

This Cambodia-based project is a partnership between Children without Worms (CWW), Helen Keller International (HKI), the Cambodian Ministry of Health (MOH) and the Ministry of Education, Youth and Sports (MOEYS). The project seeks to prevent and control STHs among primary school children through the development of a national school curriculum that will increase knowledge of STHs and promote behaviours that will help reduce transmission, such as improved sanitation. The overall goal is to better promote the comprehensive CWW *WASH(ed) framework* for water, sanitation, hygiene, education and deworming.

The project began in 2009 with phase 1, a design and pilot stage, where the primary outcome was a national school-based curriculum to teach children how to prevent STH. Information collected during phase 1 highlighted the need to increase knowledge and understanding of the effective ways of preventing and controlling STH infections amongst both teachers and students. More communication materials, latrines, soap, water filters and other important resources were needed in primary schools so that students have the opportunity to change their behaviour. By the conclusion of this phase, the curriculum addressing STHs was approved by the MOEYS.

The Annual Narrative Report on the project for the period of October 2011 to September 2012 details the activities that have been carried out more recently in Phase 2 of the project. The curriculum has been introduced into teaching colleges and is being rolled out to teachers already in the classroom. There is a focus on monitoring and evaluating the knowledge, attitudes and practice of teachers and students with regards to STHs (and WASH) to help determine and plan the best interventions in schools. Behaviour change communication materials have been developed that reference the importance of safe and improved sanitation and hand washing for the prevention and control of STHs.

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### Worms and WASH(ED) in Nicaragua<sup>45</sup>

In 2005, the Ministry of Health in Nicaragua undertook a survey which found the national disease burden of STHs to be 84%. In response, STH prevention and control activities were implemented. In 2011, CWW and two Masters' degree candidates from George Washington University undertook a research project to assess the success of these efforts.

They noted that Nicaragua had successfully and significantly reduced the disease burden caused by STHs, and implicated three major factors in this success:

- 1 Advocating for an integrated *WASH(ED)* (*Water, Sanitation, Hygiene Education, Deworming*) framework to promote comprehensive STH control;
- 2 Managing partnerships to effectively implement mass drug administration (MDA) strategies;
- 3 Bolstering government commitment and capacity to sustain STH control activities over the long term.

The Ministry of Health in Nicaragua (MINSa) promptly recognised “the limitation of MDAs as a strategy to prevent infection and in partnership with other ministries, community organisations, NGOs and international donors, made considerable efforts to address the vulnerability of countless children in the cycle of infection and reinfection due to poor sanitation and lack of access to clean water both at school and in the home”<sup>46</sup>. Acknowledging the significant challenges for governments wanting to implement WASH programs, including funding and capacity constraints, MINSa focused on hygiene education programs that encourage behaviour change and support prevention over the long term. Partnerships with agencies such as UNICEF, who have a history of implementing WASH programs, were utilised to increase sanitation coverage.

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### Achieving Trachoma control in Ghana through the SAFE Strategy<sup>47 48</sup>

The Ghana Health Service first introduced the National Trachoma Control Program and implemented the *SAFE strategy* in 2001, with the hope of eliminating Trachoma in Ghana by 2010. Working in collaboration with the Carter Center, a population-based Trachoma prevalence survey was conducted to determine the regions in Ghana where Trachoma were endemic.

Over the next 5 years, the program evolved and moved into all endemic districts in Ghana. In 2003 latrine construction and the installation of water points was introduced into the program to tackle the environmental improvement component of the SAFE strategy. Acknowledging the crucial role that latrines play in the long-term control of Trachoma, in 2005, the National Trachoma Control Program committed to constructing 5,000 household latrines per year. A new latrine promotion strategy that hoped to reach the ‘poorest of the poor’ was developed. In partnership with the Carter Center, WaterAid, World Vision Ghana, UNICEF, West African Water Initiative, USAID and the Church of Christ over 12,507 household latrines were constructed in Ghana between 2001-2008.

An impact evaluation in 2008 noted that water coverage improved from 50% to 80% and latrine coverage improved from between 0-1% to between 2-38% as a result of this project. The percentage of children with clean faces or faces without discharge rose from 70% to 93% in endemic areas in Ghana. Meanwhile the prevalence of Active Trachoma significantly reduced from more than 16% to less than 3% in the population<sup>49</sup>.

Unfortunately these examples of integration between WASH and NTDs are not widespread, with the majority of NTD programs continuing to focus on drug-based interventions, providing multiple antibiotic treatments for multiple diseases<sup>50 51</sup>. There are concerns that these drug-based interventions alone cannot effectively prevent and control NTDs<sup>52 53 54</sup>, and that integration with other sectors including WASH, health and education is increasingly necessary<sup>55</sup>.

One reason why programs focus their efforts for integration towards drug-based treatment approaches may be because WASH interventions are often perceived as complex, expensive and infrastructure-based activities that require long-term investment. NTD programs have not always experienced success when they have attempted the implementation of WASH. In contrast, drug-based treatment approaches, such as PCT, have offered more immediate and measurable outcomes. Furthermore, this approach is facilitated by large-scale drug donations from some of the world's largest pharmaceutical companies, which significantly reduce the costs associated with drug treatment.

## Integration is challenging: How we could do it better?

Part of the slow progress in achieving integration between the WASH and NTD sectors could be attributed to the approaches that have been undertaken to date. Better integration could be achieved by developing partnerships between agencies implementing NTD programs and agencies implementing WASH, sharing knowledge including the current WASH best practice and making a significant commitment to long-term planning and implementation.

### Developing effective partnerships between sectors

Very few organisations that are highly experienced in NTD programming have a similar level of expertise in the area of WASH. Similarly, WASH programs are often implemented without consideration of the burden of NTDs within a particular service delivery area, or evaluated in terms of their impact on disease reduction. This means that the two sectors and the agencies within them operate towards a different set of goals. Given the complexity of WASH interventions and the existing availability of WASH expertise, developing effective partnerships between NTD and WASH organisations is a pragmatic approach. Such a partnership requires a fundamental shift from traditional NTD vertical programming through MDA to horizontal programming that integrates the activities of the WASH, health and education sectors to construct a holistic and comprehensive approach to NTD prevention and control<sup>56</sup>.

The NTD sector has developed robust private sector relationships with pharmaceutical companies who have contributed millions of dollars in donated products each year to help treat NTDs. Private sector involvement in WASH activities as part of an NTD program has not been extensive to date, and sharing this integration conversation with this important actor may also help to drive the prevention and control activities further.

### Sharing information to better understand WASH best practice

The ad hoc delivery of WASH interventions by non-WASH agencies can lead to the use of approaches no longer commonly engaged by specialised agencies, or approaches that directly contradict recent learning on good practice WASH programming. For example, approaches such as latrine construction or the use of hardware subsidies to increase sanitation coverage confuse demand-creation approaches such as Community-Led Total Sanitation or CLTS (see below). This focus on providing subsidised latrine construction as a means to improve access has led to the inequitable and unsustainable distribution of latrines that often remain unused because they are culturally or technically inappropriate or simply unwanted<sup>57 58</sup>. The WaterAid Sanitation Framework refers to nine sanitation principles that should underpin any sanitation approach (see Figure 2). It explains that the use of hardware subsidies has led to the construction of facilities that are then left unused, are expensive to construct and often generate little or no behaviour change within communities or households because of perverse financial incentives. Instead, subsidies should be used for promotion activities to encourage the use of latrines built with household funds.



**Figure 2. Nine sanitation principles<sup>59</sup>**

- 1 Every latrine should be a wanted latrine: supply-driven programs focused on usually-subsidised delivery of hardware alone do not work; at best they provide thousands of expensive, unwanted (and unused) latrines.
- 2 Peoples' awareness of sanitation can be very low - programs which focus on promoting sanitation and building informed demand are more effective than those which focus on the supply of latrines.
- 3 Households are the real investors in sanitation, not public agencies. The investment ratio is typically ten to one. Programs which pay attention to household interests and dynamics tend to be more effective.
- 4 People rarely want sanitation for reasons of health; promotion which focuses on privacy, convenience, safety, dignity and status is more effective because it resonates with people's own interests.
- 5 Small-scale businesses and some community-based groups are very significant actors in the supply of sanitation goods and services, promoting and providing the services people really want. Programs which invest in understanding this market and matching supply with people's demand are often the most effective.
- 6 Sometimes communities can and do take collective action to address sanitation issues. Usually, however, support is needed to help communities take collective action.
- 7 Hardware subsidies- for latrine components- can have unintended consequences. The number one desired outcome- sustainability- is achieved through effective promotion, not through reduced price hardware. A wanted latrine is clean and well maintained—a latrine for life.
- 8 Subsidies for hygiene promotion, sanitation marketing, supporting small-scale providers, school sanitation, institutional sanitation and city-wide networks can all be justified as sanitation is both a merit and a public good.
- 9 Effecting behaviour changes (including adopting hygienic practices and investing in and using latrines) takes time. Programs which are in place for the long-term are more effective than short-term projects.

The WASH sector has embraced an alternative approach to hardware subsidies to achieve the widespread construction of latrines—**Community-Led Total Sanitation (CLTS)**. CLTS is a sanitation approach that seeks to empower communities to take collective action to stop open defecation. It leverages emotions including pride, disgust and shame to mobilise people through a 'triggering' process. It is a hardware subsidy-free approach that encourages communities to use local, affordable and appropriate materials to construct a basic latrine. This approach can increase latrine coverage and sustainable behaviour change through ownership and empowerment.

Another promising approach to encouraging sanitation behaviour change is **sanitation marketing**, which seeks to understand the motivations and constraints on households regarding sanitation construction and use. The approach assumes that many people are willing to pay for sanitation that will satisfy their requirements if the technology is packaged and marketed appropriately and the supply mechanism is easily accessible. Most toilets in developing countries are already built by the informal sector and are paid for by households. Sanitation marketing ensures that suppliers have the capacity to provide services that the consumers demand. The approach builds upon marketing principles to identify the 'messages' that will convince people to 'buy into' sanitation. Characteristics include self-replication, sustainability, stimulating livelihoods, and accounting for social and cultural differences.

Combined approaches may be necessary depending on the specific context. One such example is **Total Sanitation and sanitation marketing (TSSM)**, initially developed by the World Bank Water and Sanitation Program (WSP), which “combines demand-side and supply-side measures to generate widespread sanitation demand and increase the supply of sanitation products and services at scale”<sup>60</sup>.

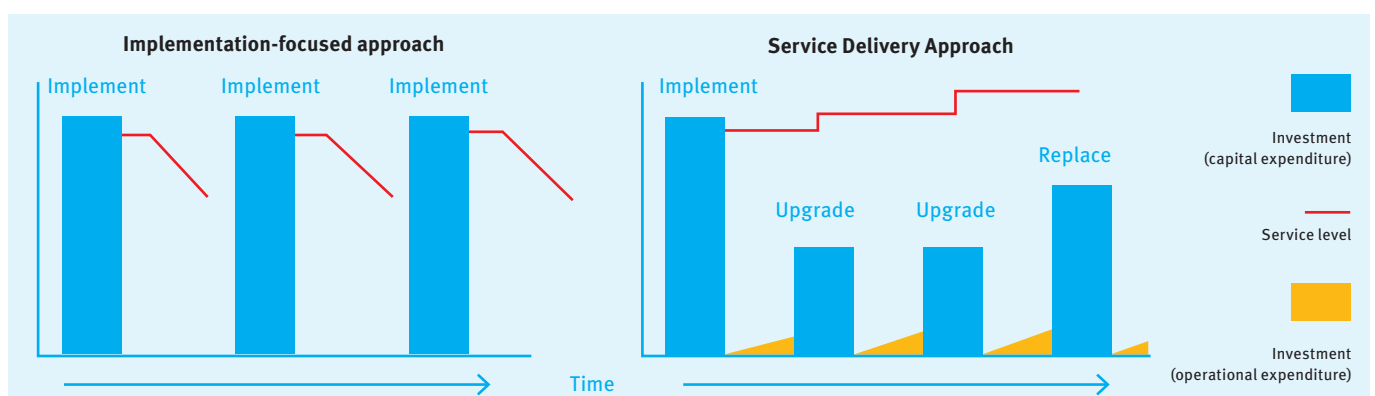
The sustained hygienic use and proper maintenance of latrines is necessary to ensure that increased latrine availability translates into improvements in health outcomes. Developments in other hygiene behaviours, such as hand washing with soap, safe water storage and the disposal of infant faeces are also needed to break the cycle of NTD transmission (see Table 1). The safe disposal of infant and child faeces is essential for the control of NTDs due to the heavy pathogen load it carries and the vulnerability of infants and children to faecal-oral disease transmission. Very little is currently known about the disposal practices for infant and child faeces, or the number of NTD programs seeking to ensure these practices are safe<sup>61</sup>. For many years the WASH sector has relied on a hygiene *education* approach and this has not lead to sustained behavior change. Current best practice now emphasises *hygiene* promotion based on formative research to understand the *motivators* for behavior change and then provide the *opportunities* and the *ability* to put new behaviours into practice<sup>62</sup>.

An issue that needs reflection when discussing how to better integrate WASH and NTDs is equity. NTD prevention and control programs are designed to target areas where disease is endemic, and vulnerability in the population is high. Often these programs quite successfully reach and provide treatment for the ‘poorest of the poor’. In contrast, recent analyses of the progress made towards achieving the water and sanitation MDG targets has indicated that the majority of progress in WASH access has occurred in the middle and upper wealth quintiles in developing countries, which means the poorest still live without improved access to water and sanitation<sup>63</sup>. WaterAid Australia has recently published a set of case studies and practical tools on how to maximise equity and inclusion in WASH<sup>64</sup>. Both sectors are attempting to ensure that the services they provide reach those most in need, and a useful way of achieving this is to share disease burden and water point mapping information and data and make sure those with the highest disease burden and the poorest access to WASH are receiving interventions of both.

### WASH for the long-term prevention and control of NTDs

To achieve a fundamental shift in the prevalence of NTDs globally, a sustained and long-term approach is needed. As the NTD/WASH Coordinator for a consortium of organisations attempting to tackle NTDs, Stephanie Ogden notes...“the WASH sector wants to ensure *sustainable* access to water and sanitation; a timeline that may look out 30, 40, or 50 years”<sup>65</sup>. There is increasing awareness within the WASH sector of the need to move from thinking about program implementation to a Service Delivery Approach (SDA) and sustainable behaviour change; this requires new ways of working and increased investment in long-term operations and maintenance (see Figure 3)<sup>66</sup>. Indeed, continuing to provide access for populations already served is as crucial as building new services.

**Figure 3. Service Delivery Approach to WASH**



In contrast, many of the NTDs, including STH and Trachoma, are targeted for elimination by the year 2020. There are concerns that this short timeframe may result in interventions that cannot maintain disease elimination. The recent reappearance of Guinea Worm in Chad after its verified elimination is a stark reminder of the need to remain vigilant with a long-term view for NTD prevention and control<sup>67</sup>. WASH interventions can help sustainably break this cycle of disease.

## Some practical opportunities for integration

While stakeholders in the WASH and NTD sectors recognise the importance of integration, efforts to actively build on this have been slow to take off. Drawing on the lessons imparted by the snapshots, as well as the analysis on how integration could be done better, there are a number of practical opportunities that may encourage the sectors to move forward towards integration and ultimately disease elimination.

- 1 **Talk the same language.** Seek to understand how other sectors use terms such as integration and try and speak a language that is understood by all. With this in mind, the NTD sector should think of WASH as a resource need necessary for the prevention, control and elimination of NTDs.
- 2 **Think about the integration of WASH and NTDs from the beginning,** and embed this thinking in strategies and programs. Both sectors have a responsibility to consider how their activities do and can impact on each another. It is only through working together that the elimination of NTDs can be achieved.
- 3 **Utilise existing research and explore new research opportunities** to enhance the evidence base of effective NTD prevention and control programming and its link to WASH.
- 4 **Build on foundation activities** such as mapping to inform integrated program planning, implementation and sustained NTD prevention and control<sup>68 69</sup>.
- 5 **Share information and data on the impacts of NTD and WASH interventions** collected from indicators included as part of sector monitoring and evaluation frameworks . This can be via tools including country-level health information systems or the NTD Global Milestone Scorecards.
- 6 Seek to develop **sustainable programs** that have a long-term vision and engage the appropriate partners and strategies to achieve and maintain the elimination of NTDs. This demands that NTD programs think about WASH and behaviour change as essential ingredients. This may pose challenges to funding bodies that are used to shorter-term project cycles and strive for well-defined outcomes.
- 7 For larger organisations operating in multiple sectors, explore the opportunities for **integration between WASH and NTD programs internally,** and focus efforts on scaling up good practice within national programs. If new to the area of WASH, **partner** with international, national and local agencies who implement high quality and sustainable WASH programs.
- 8 **Utilise existing infrastructure** such as schools and community health services to implement integrated programs that address NTDs and WASH, while continuing to build capacity to manage integrated programming in other more challenging settings such as very remote communities or at the household level.
- 9 **Global partnerships** such as the one established under the London Declaration help to emphasise and draw new partners into a global commitment to fight against NTDs. Establish and emphasise WASH on the agenda of these global partnerships and encourage WASH and NTD leaders to drive the agenda. Translate achievements made at this global and organisational level to country-level programs.

**10 Expand communication channels** between the two sectors. Encourage the inclusion of organisations from other sectors including health, WASH and education to participate in national taskforces for NTDs. Advocate for WASH in these forums, recognising it as a foundation of health and necessary for the prevention and control of NTDs. Reinforce the communication channels by making them two-way. Represent the interests of NTDs and participate in the international, national and regional meetings of other sectors including WASH.

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**Neglected Tropical Disease NGDO Network**

## Endnotes

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