

# Connecting WASH with NTDs: a cross-sector imperative

Development practitioners and scholars have often overlooked the importance of neglected tropical diseases (NTDs) in their work on water, sanitation and health (WASH), and epidemiologists have neglected the importance of WASH in their studies of NTDs. In June 2017, COUNTDOWN brought together experts from different disciplines from the Liverpool School of Tropical Medicine (LSTM) and the Institute of Development Studies (IDS), UK, to share their perspectives and inspire innovative thinking to address the development and policy conundrum that NTDs present. This briefing offers the outcome of their discussions and outlines their recommendations.

## BACKGROUND

Schistosomiasis (SCH) and soil transmitted helminths (STHs) are classified as NTDs and predominantly affect poor and marginalised communities in sub-Saharan Africa.<sup>1</sup> More than 200 million people are infected with SCH and more than a billion with STHs.

Both diseases are transmitted through contact with infected water or soil (see box).<sup>2,3</sup> Symptoms include urinating blood, fever and general ill health, diarrhoea and stomach pain. SCH can also damage reproductive systems.<sup>4</sup> In some communities, almost everyone is infected.

## KEY MESSAGES

- Poor, disenfranchised people suffer disproportionately from NTDs.
- NTDs lead to stigma, lack of wellbeing and reduced social status, reinforcing poverty and social injustice, as well as debilitating physical symptoms.
- There has been little political incentive to persuade policymakers or practitioners to prioritise action on NTDs.
- Stronger multisector, integrated approaches to WASH, NTDs and development are needed at all levels.



*A fisherman casting a net at Barombi Kotto, Cameroon, where urogenital schistosomiasis is endemic in this crater lake. Photo: Dr Suzy Campbell*

Treatment and control for SCH and STHs is currently delivered through Mass Drug Administration (MDA) programmes.<sup>5</sup> In theory, this is easy, cheap and effective, yet it does not solve the problem in the longer term. People receiving MDA will often get re-infected following contact with infected water or soil as they go about their daily activities.

Water and sanitation principles also need to be addressed to reduce reinfection. Sanitary systems which separate faeces from human contact would limit exposure to STHs, but this does not accept the reality of most people's lives and sanitary infrastructure. Furthermore, as SCH is transmitted in urine, successful faecal containment methods are not always sufficient on their own.

Most countries' NTD programmes do not systematically collect evidence of SCH and STH disease burdens.

## SCH AND STH TRANSMISSION

SCH is transmitted through contact with water infected with a parasite which develops in an aquatic snail.<sup>10</sup> Infection often occurs during routine activities such as bathing, laundry, collecting drinking water, fishing and farming.

STHs are parasitic worms transmitted through soil, plant material, vegetables and water. They enter the environment through the eggs which are contained in infected human faeces.

Poor sanitation is a primary cause of transmission for both SCH and STH.

## THE POLICY AND DEVELOPMENT CONTEXT

*"We should all be ashamed of the lack of progress with respect to controlling neglected tropical diseases through improved water and sanitation interventions"*

– Professor Lyla Mehta

The label 'neglected tropical diseases' refers to 20 diseases known to lead to enormous disability and suffering and yet can be controlled and eliminated.<sup>6</sup> They score poorly in terms of funding, resources and academic attention against outbreak and epidemic diseases such as HIV/AIDs, tuberculosis, malaria and Ebola. Yet, the broader ramifications of NTDs can include issues such as stigma, lack of wellbeing and reduced social status – and these personal dimensions resonate with, and reinforce, issues of poverty and social injustice. There are multiple, often underestimated, benefits of health and sanitation which are seldom captured in development statistics.

The World Health Organization (WHO) is at the forefront of developing policy for the control of SCH and STHs, advocating for preventative chemotherapy as the cornerstone of control.<sup>7</sup> This approach is effective but insufficient. In 2015, WHO signalled its prioritisation of WASH as a critical component of tackling NTDs.<sup>8</sup> However, much conceptual thinking and protocol development is still needed to reach a guiding environmental framework that can put this revised policy into effective action.

Recognising the need for a holistic approach is important as NTDs, including SCH and STH, have to date been dealt with in isolation from other development issues and government concerns. In addition, academics working in development have

tended to focus on nutrition separate from both water and hygiene, and from the health impacts of parasite burden such as stunted growth, nutrient deficiency, poor academic performance and anaemia.

Multiple government ministries and departments are affected by the impact of NTDs, including rural and urban municipalities, health, water and sanitation departments, women and child development, and social development departments – and each struggles to meet its own remit. Often they work in different ways, some on preventative strategies, others resorting to fire-fighting measures or technological fixes. They have different priorities and rarely consider an integrated approach to water, sanitation and wellbeing. High levels of NTDs, including SCH and STH, and slow development progress suggest that unintended and contradictory outcomes can result from separate discussions and policy on NTDs, water and sanitation.

The Sustainable Development Goals (SDGs) provide an opportunity for reflection and new prioritisation. NTDs now have a specific dedicated target and indicator in SDG 3, "Ensure healthy lives and promote well-being for all at all ages", to track interventions. Further, WHO Director General Margaret Chan has argued that NTDs are the litmus test for universal health coverage and should be used as an equity tracer in the SDGs.<sup>9</sup>



## WHY WE NEED A BROAD INTERSECTORAL RESPONSE

People continue to be infected with NTDs because of the environmental, socioeconomic and political environment in which they live. Interventions to address NTDs need to look beyond biomedical interventions and ensure that rights of citizenship are considered in NTD interventions.

This includes making claims on governments to address: basic needs, access to safe water, control over resources, livelihoods, environmental sustainability, gender issues, and politics and power relations.

Any consideration of water and sanitation as an approach to NTDs, in particular SCH and STH, needs to consider how the broader structural environment shapes women's, men's, girls' and boys' behaviours in relation to disease prevention.

This includes consideration of:

- How water needs and usage relate to other livelihood activities.
- How access to health services shapes awareness of disease prevention.
- How people's differing experiences and perceptions of risk may lead to increased disease exposure.
- How behaviours are influenced by, and in turn influence, environmental sustainability.
- How different community members have differential access to resources, and the gender and power relations in which these are embedded.

This last point is perhaps the most important as it both informs people's exposure to unsafe water and impacts on the behaviours of others. For example, women and girls are often responsible for collecting and using water within households and as such are exposed to different disease risk from boys and men.

An intersectoral approach which brings these socio-political and environmental issues to the fore would help to develop more effective holistic solutions.



*A Malawian household in the rainy season, during which local flooding aids transmission of soil-transmitted helminthiasis. Photo: ILRI/Mann*

## MOVING FORWARD

NTDs cannot be addressed in isolation or with a single intervention.<sup>11</sup> The intersection of water, sanitation and livelihoods is experienced daily by people in ways that have helped make NTDs the policy and development conundrum that they are. In short, the politics of power and the politics of poverty matter.

To deal with this challenge, academic and sectoral silos need to be broken down and intersectoral/disciplinary work promoted. This needs to be the case at all levels – local, provincial, national and global. Stronger and more robust information systems need to be developed so that a wide range of actors – including health system experts, donors, government representatives and policymakers – can find out about SCH and STH, as well as other NTDs, and participate in intersectoral solutions.

There needs to be a greater awareness that governments, development agencies, service providers, communities and ordinary people may understand safe and improved water or sanitation very differently. These local realities need to be understood and embedded in NTD action. However, solutions which overburden women with the

### RECOMMENDATIONS

- Promote intersectoral working
- Embed NTD action in local realities
- Recognise women's labour as finite
- Develop strong, robust information systems
- Retain flexibility in policies and interventions

responsibility of sanitation, hygiene and behavioural change must be avoided. Women's labour is not infinitely elastic and collective responsibilities should be promoted. International funding needs to be mobilised, in provision and upkeep of infrastructure as well as monitoring of context-specific indicators at the local level.

Finally, any policies and interventions for treatment and control need to incorporate flexibility to address unanticipated and long-term outcomes.

### REFERENCES

- 1 Christinet, V., et al., Female genital schistosomiasis (FGS): from case reports to a call for concerted action against this neglected gynaecological disease. *International Journal for Parasitology*, 2016. 46(7): p. 395-404
- 2 Pullan, R.L., et al., Global numbers of infection and disease burden of soil transmitted helminth infections in 2010. *Parasites & Vectors*, 2014. 7(1): p. 37.
- 3 GAHI. Global burden. 2017 [cited 2017 6 July]; Available from: <http://www.thiswormyworld.org/worms/global-burden>.
- 4 Gyapong, M. and S. Theobald, The sexual and reproductive health issue you've probably never heard of.... *openDemocracy* 50.50, 2015.
- 5 Campbell, S.J., et al., Water, Sanitation, and Hygiene (WASH): A Critical Component for Sustainable Soil-Transmitted Helminth and Schistosomiasis Control. *PLOS Neglected Tropical Diseases*, 2014. 8(4): p. e2651.
- 6 CDC. Neglected Tropical Diseases. 2017 [cited 2017 6th July]; Available from: <https://www.cdc.gov/globalhealth/ntd/index.html>.
- 7 WHO, Water sanitation and hygiene for accelerating and sustaining progress on neglected tropical diseases: A global strategy 2015-2020. 2015, World Health Organization: Geneva.
- 8 Campbell, S.J., et al., Water, Sanitation, and Hygiene (WASH): A Critical Component for Sustainable Soil-Transmitted Helminth and Schistosomiasis Control. *PLOS Neglected Tropical Diseases*, 2014. 8(4): p. e2651.
- 9 WHO, Water sanitation and hygiene for accelerating and sustaining progress on neglected tropical diseases: A global strategy 2015-2020. 2015, World Health Organization: Geneva.
- 10 Stothard, J. R., Campbell, S. J., Osei-Atweneboana, M. Y., Durant, T., Stanton, M. C., Biritwum, N.-K., Rollinson, D., Ombede, D. R. E. and Tchuem-Tchuente, L.-A. (2017). Towards interruption of schistosomiasis transmission in sub-Saharan Africa: developing an appropriate environmental surveillance framework to guide and to support 'end game' interventions. *Infectious Diseases of Poverty*, 6, 10.
- 11 Dean, L., Tailoring mass drug administration to context: implementation research is critical in achieving equitable progress in the control and elimination of helminth neglected tropical diseases in sub-Saharan Africa. *International Health*, 2016. 8(4): p. 233-234.

*Special thanks to participants: Jeremy Allouche, Resource Politics Cluster, IDS; Gerry Bloom, Health & Nutrition Cluster, IDS; Lyla Mehta, Resource Politics Cluster, IDS; Shilpi Srivastava, Resource Politics, IDS; Linda Waldman, Health & Nutrition Cluster, IDS; Suzy Campbell, Parasitology Department, LSTM; Eleanor MacPherson, International Public Health, LSTM and Russell Stothard, Parasitology Department, LSTM.*

### FURTHER INFORMATION

For further information, please email:  
[Russell.Stothard@lstmed.ac.uk](mailto:Russell.Stothard@lstmed.ac.uk)