

# Accelerating Progress for Schistosomiasis Control and Elimination Post-2020

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*25<sup>th</sup> – 26<sup>th</sup> April 2019, Radisson Blu, Addis Ababa, Ethiopia*

## Executive Summary

The World Health Organization 2012-2020 Roadmap for NTDs has motivated and inspired huge progress in the control and/or elimination of NTDs including schistosomiasis. As the end of the Roadmap timeframe approaches, there is a need to establish a new vision for schistosomiasis for the period of 2021 to 2030 to accelerate the current momentum towards elimination and to demonstrate the contribution of schistosomiasis elimination to the global development agenda. A consultation meeting [see Appendix A for agenda and participant list] was organized by the Global Schistosomiasis Alliance, in collaboration with the WHO NTD department and hosted by the Ethiopian Federal Ministry of Health. The purpose of the meeting was to consolidate feedback from experts and stakeholders on the new proposed WHO goals for schistosomiasis and to discuss and agree on potential sub-targets and indicators for the new NTD Roadmap.

This important meeting was generously supported by the Bill and Melinda Gates Foundation and was attended by 45 delegates representing the following organizations and Ministries of health: CIFF, CDC USA, ESPEN, SCI, Countdown, GSA, Merck, End Fund, Bill and Melinda Gates Foundation, Hellen Keller International, NALA Foundation, Sightsavers, Swiss TPH, World Vision International, and country representatives from Brazil, Burundi, Cameroon, Egypt, Ethiopia, Kenya, Mali, Nigeria, Uganda, Rwanda. WHO representatives at the meeting included the Geneva NTD department, WASH department, and WHO regional offices; WHO AFRO, WPRO-SEARO and EMRO [see Appendix A].

The desired outcome from the meeting was identified as: **Defined goals, targets, indicators and milestones for schistosomiasis control and elimination post-2020 and community-led implementation of the Schistosomiasis Action Plan.** This was achieved, with concrete outputs from the meeting feeding into the WHO process and giving the schistosomiasis community a clear voice and position in the normative process of the WHO.

The following concrete outputs were produced: Firstly, a document [Appendix B] consolidating the consultation feedback on the proposed WHO goals was developed. The document listed concerns & feedback on interpretation, feasibility, practical implications and risks and included suggested changes or actions to address the concerns for each of the two proposed goals:

1. Global elimination as a public health problem, measured by proportion of heavy infection intensities
2. Interruption of transmission in selected countries, measured by zero autochthonous infections over a period of 5 years

This document was sent to the WHO NTD team in Geneva and to the WHO regional representatives on the 26<sup>th</sup> of April.

The second output was a statement based on the consultation meeting which was presented to the WHO Strategic and Technical Advisory Group for NTDs (STAG-NTDs) by a GSA partner on the 29<sup>th</sup> of April 2019 [Appendix C].

Prior to the meeting a subset of potential sub-targets and indicators were presented in a GSA “working document” which was shared with meeting participants and other stakeholders to collect the view of the schistosomiasis community. These sub-targets and indicators were discussed in the meeting and, based on the discussions and feedback, are being further developed by the GSA as a future output. These potential sub-targets and indicators will be shared with the WHO NTD team for consideration for the new NTD Roadmap to help strengthen the new global strategy on schistosomiasis and measure progress toward the new 2030 goals.

The meeting was closed by the Federal Ministry of Health with enthusiastic feedback from the meeting participants, endorsing the GSA meeting and highlighting that it brought together diverse representatives from the schistosomiasis community, consolidated expertise and provided clear feedback as one community on the WHO goals.



## Meeting Report

### Day 1

Professor David Rollinson welcomed delegates on behalf of the GSA and thanked everyone for their participation and the Federal Ministry of Health for hosting this important meeting. The meeting was officially opened by Dr M. Kassa of the Federal Ministry of Health of Ethiopia. The desired outcome, objective and outputs of the meeting were introduced by Mr Nebiyu Negussu (FMoH), Dr Gautam Biswas (WHO) and Professor Paul Hagan (Meeting Chair).

#### Session 1. Progress up to 2020 and current schistosomiasis situation

*Objective: Inform and update all participants of progress made on the 2020 NTD Roadmap*

*Moderators: David Rollinson and Nebiyu Negussu*

To set the scene and context for the meeting this first session focused on presentations from different schistosomiasis endemic regions. The speakers each gave an overview of schistosomiasis control progress, current priorities and challenges in their respective regions/countries.

Dr Maria Rebollo Polo gave an overview of schistosomiasis progress in the African region (WHO AFRO) highlighting the excellent progress made to treat 75% of school-aged children in the region. All the data is currently available via the ESPEN portal<sup>1</sup>. Dr Rebollo highlighted that the schistosomiasis priority for 2019 in the African region is reaching 100% geographical coverage for treatment, particularly for the 15 countries in the initial/ scaling up phase. This will be achieved by optimizing treatment targets using subdistrict and community data, using targeted implementation and supporting countries to mobilize political will, domestic funding and sustainability. Furthermore, ESPEN will assist countries in identifying and addressing partner gaps and increasing technical capacity. A crucial challenge for the region is the timely reporting of good, reliable data, high cost of MDA in challenging settings, low coverage of adults and pre-school aged children, low implementation of the other PHASE (Preventative chemotherapy. Health education. Access to clean water. Sanitation improvement. Environmental vector control) strategies and emergence of hybrids in schistosomiasis transmission settings.

Dr Aya Yajima presented on the schistosomiasis situation in South East Asia and Western Pacific Region (WHO WPRO and SEARO). The species responsible for schistosomiasis in these regions are zoonotic. MDA has significantly reduced schistosomiasis, in some countries reaching elimination as a public health problem (defined as less than 1% heavy infections) however with poor WASH infrastructure, and zoonotic transmission prevalences have bounced back in some places. Moreover, a key learning point from this region is that focusing on Elimination as a Public Health Problem (EPHP) eventually led to a drop in political commitment and compliance. The goal in these countries should be the interruption of transmission (also called elimination of transmission) to secure the gains. Dr Yajima gave an overview of the diverse approaches used in different settings in Cambodia, Laos, the Philippines, Indonesia and China, highlighting that all Asian countries are close to

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<sup>1</sup> [Expanded Special Project For The Elimination Of NTDs Portal](#)

elimination. Dr Yajima highlighted the key recommendations from the WHO Bi-regional consultation towards elimination of schistosomiasis in Asia which took place in Jakarta in March 2019. These included:

- Operational definition of elimination of transition (incidence of new indigenous infections in humans, other animals and intermediate host snails reduced to zero)
- Validation of elimination of transmission after 5 consecutive years of adequate post-intervention surveillance with no new indigenous infections reported
- Western Pacific countries should aim to achieve criteria by 2025 with verification by 2030.
- Community empowerment through a One Health approach should be the core strategy for elimination of transmission of Asian schistosomiasis
- WHO should collaborate with partners in independent validation and standardization of diagnostic techniques for *S. japonicum* and *S. mekongi* in definitive (human and other animals) and intermediate (snails) host in low transmission settings.

Dr Reda M Ramzy gave a brief overview of schistosomiasis in the Eastern Mediterranean region: several countries claim to have interrupted transmission of schistosomiasis (Iran, Iraq, Jordan, Morocco, Saudi Arabia and Tunisia for *S. haematobium*, Oman for *S. mansoni*). Surveys to demonstrate interruption of transmission are underway/planned for Iran, Iraq, Morocco and Oman. Dr Reda highlighted that MDA integrated with snail control has resulted in significantly decreasing prevalence of infection in Egypt and Saudi Arabia, where EPHP has largely been achieved with prevalence of heavy intensity infection less than 1% in 97.4% of studies districts. The next goal is interruption of transmission.

A short overview of the impact of preventative chemotherapy on schistosomiasis in the African region was presented by Dr Penelope Vounatsou. Using published data from 2000-2017, predominantly from school-aged children (before 2000 it was 1/3 adults, 2/3 children, after 2000 almost only children data). Survey data are related to climatic, WASH, environmental data, all used to predict relative risk. From 2010 to 2017 there was a 51.23% reduction in relative risk for *S. haematobium* and a 23.16% reduction in relative risk for *S. mansoni*. Combined this is a 41.4% reduction in relative risk for both species, with prevalence dropping from 23.7% in 2010 to 14.4% in 2017. Burkina Faso, Malawi, Mali, Niger and Togo have achieved over 75% coverage in 2011-2017 and a reduced relative risk by around 50% (the coverage data are at country level not district level).

Dr Jeann Marie da Rocha Marcelino presented the national schistosomiasis programme in Brazil, representing the Americas region. The objective for Brazil is EPHP using an integrated approach including:

- test and treat in all populations in endemic areas, including adults
- a combined health education
- surveillance of snails and
- environmental management integrated approach

Currently, 75% of tested individuals have low intensity of infection. When looking at mortality and hospitalization rates for schistosomiasis from 2007 to 2017, morbidity was reduced by 76% and

mortality by 14%. The Ministry of Health (MoH) supports regions with medicines and diagnostics kits, has published a guide on health education for schistosomiasis control, provide a distance learning course on clinical and epidemiological approaches to schistosomiasis to build technical capacity. The MoH are undertaking a survey with FioCruz to validate the diagnostic urine test (POC-CCA) in eight municipalities. False positive and trace results pose a particular challenge for POC-CCA. Current challenges are: ensuring policy prioritization for NTDs, improving epidemiological data, reaching 1.5 million people needing treatment and integrating NTD control with the primary health care network and with the sanitation sector.

Dr Obiageli Nebe gave a brief overview of the current schistosomiasis situation, priorities and challenges in Nigeria. Nigeria is aiming to control schistosomiasis morbidity (less than 5% heavy infections) by 2022 and to eliminate schistosomiasis as a public health problem (EHPH) by 2025 (less than 1% heavy infections). After extensive mapping surveys it was reported in 2017 that a total of 139,645,032 people are at-risk of schistosomiasis, with 39,100,606 school-aged children and 1,456,085 adults requiring preventative chemotherapy for schistosomiasis. In addition, 27.4 million pre-school aged children require treatment. There has been an impressive scale up of MDA in Nigeria. Two states carried out impact assessments in 2018 and showed a clear picture of a significant decrease in prevalence in local government areas (61% and 58% decrease for each state). Key challenges highlighted were: i) the scaling up of treatment to school-aged children in all endemic LGAs including how to reach nomadic populations and non-enrolled school aged children, ii) how to deal with areas of rapid re-infection, iii) lack of snail control support, iv) little to no WASH interventions in all endemic LGAs, v) insecurity and insurgency in parts of the country impacting MDA and vi) the need for capacity building and resource mobilization. Whilst some of these key challenges will be addressed in 2019/2020, Dr Nebe highlighted the need for guidance on what to do once elimination as a public health problem has been achieved and that focused advocacy efforts at the national, state and LGA levels will be critical for resource mobilization, domestic resourcing, sustainability and scale up to 100% geographical coverage.

#### **Discussion:**

Success of schistosomiasis programmes needs to be recognised as remarkable progress has been made over the past 10 years; all regions are progressing towards elimination as a public health problem, some have entered the last mile especially SEARO, WPRO and EMRO. Interventions and strategies in addition to MDA are being implemented (e.g. One health, snail control, health education, test-and-treat) at different levels, although these do not take place across the board and can be improved. There has been a significant risk reduction for *S. haematobium* (>50%) and *S. mansoni* (>20%) in Africa. Coverage in the African region is 72.4% of school-aged children, however only 13.3% of adults.

Data reporting and quality is an issue and needs to be improved to be comparable and of use in the future. Data collection and reporting must include PSAC, SAC, adolescents and adults. Data should be disaggregated, and precision mapping used to target implementation of strategies at the lower level. Targeting interventions to transmission foci could efficiently use PZQ and save resources (including human resources, transport costs, etc) that could be invested into other strategies e.g. WASH

There is a risk of resurgence (bounce back) of prevalence even when elimination as a public health problem has been achieved. Challenges include lack of access to WASH, focality of disease, the need to define “hot spots” and their root causes to tailor interventions. Stopping MDA/PC treatment is not an option before access to WASH and behaviour has improved, otherwise all the investments and gains made will be lost due to resurgence of schistosomiasis.

## Session 2. Achievable Goals and 2030 targets

*Objective: Discuss WHO proposed targets, milestones and indicators for schistosomiasis 2030*

*Moderators: Simon Brooker and Louis-Albert Tchuem-Tchuente*

At the start of the session it was agreed that feedback on the proposed 2030 goals would be collected during the next two sessions and sent to the WHO. Dr Amadou Garba Djirmay gave an overview of the proposed goals for 2030, their positioning in relation to the Sustainable Development Goals to “Leave no one behind”<sup>2</sup> and the WHO’s General Programme of Work 2019-2023 (Triple billion, 1 billion more people with health coverage, 1 billion lives improved, 1 billion more people made safe)<sup>3</sup>. The proposed goals are:

1. Global elimination as a public health problem (EHP), measured by proportion of heavy infection intensities (less than 1% heavy infections in all endemic areas of the country)
2. Interruption of transmission in selected countries, measured by zero autochthonous infections over a period of 5 years

The goals were proposed based on WHA resolution 65.21<sup>4</sup> calling for schistosomiasis elimination where appropriate, the WHO Schistosomiasis progress report 2001-2011 and strategic plan 2012-2020<sup>5</sup>, evidence of the impact of PC in reducing morbidity due to schistosomiasis and modelling of prevalence thresholds for PC (in lower prevalence countries modelling showed the EHP can be achieved in 5-7 years of PC implementation).

Dr Jaspreet Toor presented a modelling perspective on the WHO goals. The NTD Modelling Consortium used:

- The WHO definition of EHP as less than 1% prevalence of heavy intensity infection in SAC by Kato-Katz
- Random coverage at each round of MDA and
- Different age-profiles of infection in which the adults harboured a low to high burden of infection relative to SAC (simulated across all ages).

Key modelling insights included: In low to moderate prevalence settings community-wide treatment is not necessary to achieve EHP, SAC-only annual treatment for up to 3 years is sufficient. In high prevalence settings community-wide treatment is required to achieve EHP, both SAC and adults need to be treated annually and the required coverage levels to achieve EHP depend on the burden

<sup>2</sup> [United Nations \(2015\) Sustainable Development Goal 3 Ensure healthy lives and wellbeing for all at all ages.](#)

<sup>3</sup> [World Health Assembly resolution 71 WHO Thirteenth general programme of work 2019-2023](#)

<sup>4</sup> [World Health Assembly resolution 65.21 \(2012\) Elimination of schistosomiasis](#)

<sup>5</sup> [World Health Organization \(2012\) Schistosomiasis Progress Report 2001-2011 and Strategic Plan 2012-2020](#)

of infection in each age group. Therefore, M&E data needs to be collected from all age-groups to inform the optimal treatment strategy. Despite achieving EPHP, overall prevalence could still be high, particularly in non-targeted age groups. Stopping treatment after achieving EPHP is highly likely to lead to resurgence of schistosomiasis. It may be feasible to maintain EPHP with less frequent treatment and WASH. Elimination (interruption) of transmission would alleviate the need for ongoing treatment. Dr Toor highlighted that modelling is being used to look at elimination (interruption) of transmission thresholds, again currently based on Kato Katz and preliminary analysis suggests elimination of transmission can be detected at 1% Kato-Katz prevalence two years post-treatment.

#### **Discussion:**

The group discussed: How would EPHP in all endemic areas be measured? Impact assessment and re-mapping protocols are currently being developed by WHO M&E working group, the aim is to have options available according to the state of the programme, the diagnostic test used, and the different hosts for schistosomiasis in the area. Implementation guidelines will be released summer 2019 and will be simplified to one threshold, on annual treatment and expanded to all in need (under a universal health coverage approach). Treatment/MDA decision is not made on intensity of infection but on prevalence, while intensity of infection measures progress to EPHP. The importance of improved MDA implementation, particularly targeted MDA only to areas that are endemic, was highlighted. Programme managers raised the question of what to do once EPHP is achieved and highlighted that there is a terminology problem around EPHP, since governments, donors and the public will interpret that success as schistosomiasis no longer being a public health priority, resulting in interventions being stopped, or compliance to suffer and coverage to drop. Communication needs emphasis that EPHP is not the final goal. Once EPHP has been achieved, moving to interruption of transmission will require sub-district knowledge of where transmission is occurring and targeting interventions to those areas. This requires knowledge of what it takes to transition from EPHP to interruption of transmission and the costs entailed. It is clear that interruption of transmission happens alongside economic development and government investment.

Whilst recognising that the two goals proposed are important and the resulting targets need to be clearly defined. Clear, evidence-based strategies and guidelines are needed that indicate how to achieve these goals and how to transition from EPHP to interruption of transmission. Research providing strong evidence-based recommended strategies is required.

Risk mapping will be important to define the interventions. In high transmission settings additional interventions are needed to achieve EPHP.

#### Session 3. Programmatic implications of 2030 targets

*Objective: Discuss current and future implications of the proposed 2030 targets and determine how these will be monitored and assessed.*

*Moderators: Yaobi Zhang, Jiagang Guo*

Discussions on the programmatic implications of the 2030 goals were continued in session 3. Dr Garba highlighted that for interruption of transmission, new guidelines on tools measuring the absence of infections in different hosts are being developed. Protocols (sampling strategy, diagnostic techniques and where to survey) are being developed by WHO working group which will then be field tested and evaluated by the WHO M&E working group.

Professor Louis-Albert Tchuem-Tchuente and Dr Fiona Fleming discussed how to measure progress towards the goals:

Decision making is based on two infection measures or metrics: prevalence and intensity of infection. Prevalence enables a MoH to decide on PC strategies and on interruption of transmission but not on achievement of EPHP. Measuring prevalence requires a marker of infection. Intensity of infection enables an MoH to decide on achievement of EPHP but does not allow MoH to decide on PC strategy or achievement of interruption of transmission. Measuring intensity of infection requires measuring a proxy for number of worms i.e. number of eggs using Kato-Katz and urine filtration.

The current framework for schistosomiasis is described in WHO's guide for managers of control programmes<sup>6</sup>. Treatment frequency (annual, biennial or triennial) is based on prevalence of infection. Process, performance and impact M&E is conducted continually or periodically throughout. After 5-6 years of PC, programmes re-evaluate treatment frequency based on prevalence whereas the evaluation of intensity, or prevalence of heavy intensity to be precise, is required as it is the global target and determines which phase a programme is in.

Prevalence helps to determine the specific interventions required, as seen with the modelling. Evidence demonstrates that as prevalence reduces, intensity of infection also reduces. There is also evidence that egg negative, low intensity and moderate intensity morbidity pathology exists and with unreliable diagnostic tests to measure intensity of infection, especially in low endemic settings. Important questions concern whether having an intensity of infection-based goal is necessary and of use to MoH for decision making as well as whether existing evidence can be used to propose EPHP as a prevalence measure.

Additionally, precision continues to be a challenge for measuring progress given the highly focal nature of schistosomiasis transmission. Questions remain what diagnostic, survey design and sample size should be used, as well as what intervention units and target populations should be applied/targeted?

Finally, crucial information for measuring progress to these goals include measuring critical targets including treatment coverage, water and sanitation coverage, integrated vector management, one health, drug efficacy monitoring, domestic financing and ownership as well as health system strengthening. These may not all fall under the remit of the schistosomiasis and NTD programmes but access to and reporting quality data across sectors is crucial to measure progress to the proposed goals and to identify criteria and critical decision points for programmes.

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<sup>6</sup> World Health Organization (2011) Helminth control in school age children: a guide for managers of control programmes - 2nd ed



## Discussion:

The use of prevalence versus intensity of infection was debated. The group was reminded that eggs are what cause the morbidity in humans and number of eggs has been shown to be correlated with morbidity. With other diagnostics (not using eggs) the link between transmission and morbidity is not clear, however morbidity control underlies EPHP. Conversely, it was argued that there is a relationship between prevalence and infection intensity and reducing prevalence is the more ambitious goals. It was also pointed out that you can have low infection intensities and still have morbidity in the population. Appropriate sensitive diagnostics are crucial, yet they present the risk of false positives (e.g. challenge for CCA). It was discussed whether using multiple and different diagnostics for different hosts and at different stages of programmes was appropriate, as well as the need to ensure that different diagnostics are used to monitor different age groups. Moreover, the definition and diagnosis of Female Genital Schistosomiasis was discussed as well as the importance it plays in “leaving no one behind” and in linking it with the HIV community. It was suggested that other morbidity measurements could be used in country such as ultrasonography and hemastix.

The issue of terminology around elimination as a public health problem was highlighted again. This was deemed an important challenge since misunderstanding the terminology can incur high risks such as loss of political will, lack of funding for MDA, ceasing MDA and resurgence of schistosomiasis. Other terms were discussed such as morbidity control, elimination of morbidity etc. It was clear that schistosomiasis programmes need to ensure a continuum in order to avoid resurgence, as highlighted by China. Discussions concerning the goal of interruption of transmission and whether it should be defined as the end goal. However, interruption of transmission is only achievable for certain countries (those who have achieved EPHP). EPHP is an intermediate goal that countries can achieve with the aim of transitioning later to interruption of transmission. Messaging and clarity is key in advocacy at the global, national, state and community levels.

Debate around the verification process of interruption of transmission focused on the difficulty in measuring zero incidence and the development of a clear protocol. Modelling could assist in identifying thresholds and sampling size and could be validated using field data. Surveys carried out in the Dominican Republic and in St Lucia using antibodies and PC CCA did not find any positive infection in children, next steps are to look at adults and other hosts. These results will provide a picture of what interruption of transmission looks like and in turn will inform the system for verification. Multiple cross-sectoral indicators may be needed in a package to show that interruption of transmission has been achieved.

## Session 4. Synthesis, summary and wrap-up of Day 1

*Objective: Produce consensus list of goals, targets, indicators and milestones*

*Moderators: Wendy Harrison and Paul Hagan*

The group discussed the feedback and how to best present it for the WHO and for STAG. A table was drafted for each goal to document concerns/feedback, including suggested change and/or actions. The following themes were identified:

- Interpretation
- Feasibility
- Practical implications
- Risks

The table was reviewed and finalised in Day 2 and sent to the WHO NTD department (Appendix C).

## Day 2

### Session 5. Access to preventative chemotherapy

*Objective: Based on 2030 targets and Schistosomiasis Action Plan determine workplan to achieve Access to PC and schistosomiasis elimination.*

*Moderators: Moussa Sacko and Antonio Montresor*

To set the context for this session brief talks were given by Drs Lynsey Blair, Johannes Waltz and Sultani Hadley Matendecheo. The discussion was then opened to the floor and focused on what is needed to improve access to PC.

Universal health coverage needs to be available. 250 million praziquantel tablets are available for donation by Merck (single donor) for SAC and adult treatment. Although some estimates propose that more than 250 million tablets will be needed, the full number of tablets available have not been utilised, indicating that this may not be the case. New methods could be applied to estimate the number of tablets required. Merck can produce an additional 100 million tablets, but these would not be donated. Merck is working on producing a new formulation of praziquantel which extends the shelf life of the tablets (from 2 to 3 years) and reduces the amount of packaging. Given the limited number of tablets available, it is important that they are used efficiently, and that any potential gap in the number of tablets available and number of treatments required is avoided.

Mapping is required to allow for targeted use of praziquantel and to avoid overtreatment in specific areas. Treating at community-level rather than district-level could also prove beneficial in preventing overtreatment. Due to donor fatigue, advocacy for more praziquantel and paediatric drugs is needed in order to avoid dependency on a single donor (pre-SAC paediatric formulation is starting phase III). Healthcare centres could be used for supplying praziquantel to those that miss treatment or where treatment is not otherwise available.

More in-country evidence is required to understand which population groups require treatment e.g. pre-SAC prevalence data. Additionally, mapping and community-level data are needed to inform treatment strategies. Mapping protocols are currently being developed to allow for impact assessment and targeted treatment. Data with more sensitive diagnostics may reveal that more treatments are needed. Manufacturing capacity and high-quality EPI are also challenges being faced.

### Session 6. Interventions to sustain control and lead to elimination

*Objective: Based on 2030 targets and Schistosomiasis Action Plan determine workplan to achieve sustained control and elimination targets.*

*Moderators: Steffi Knopp and Reda Ramzy*

This session covered key interventions to secure the gains made by schistosomiasis control programmes and to move to the proposed 2030 targets. To set the context of the discussion for this session brief talks were given by Drs Sophie Boisson, Abraham Asmare and Dorin Turgeman on WASH and NTDs working together and on behaviour change components of these interventions. Professor David Rollinson and Dr Paulin Mwinzi gave an overview of environmental management and snail control interventions. The discussion was then opened to the floor and focused on what is needed to ensure cross-sector activities were taking place and good strategies were being used to prevent resurgence and to move to the next goal of interruption of transmission.

It is difficult to achieve elimination/interruption of transmission and to prevent resurgence without improved WASH, behaviour change and/or snail control alongside MDA. In the past, interruption of transmission has been achieved with the addition of snail control. A WASH-NTDs toolkit<sup>7</sup> and the WHO molluscicide user manual<sup>8</sup> are now available for country NTD programmes. Coordinated snail control has been recommended in the 2017 WHA resolution 71.16<sup>9</sup> and Global Vector Control Response (GVCR)<sup>10</sup>. Snails can be killed using either chemicals (with potential associated risks to habitat and fish populations) or natural interventions. Guidelines for lab and field testing of different available molluscicide are available and 23 countries have been trained on snail control. Techniques, such as xenomonitoring can be used to detect infected snails and eDNA approaches for detecting cercariae in the water are under development.

NTD programmes should not deliver WASH services but coordinate and jointly plan with respective organizations and ministries working on WASH (e.g. planning common goals). More collaborations between NTD programmes and WASH are needed. For WASH to be successful effective behaviour change interventions (e.g. to ensure water contact is avoided) and advocacy activities are required. WASH measures can be sustained through community ownership as community-government collaboration for WASH behaviour change leads to sustained achievements. However current WASH investments are not yet reaching the most vulnerable individuals, better targeting is required. The measurable beneficial impact of WASH is still unknown. It was emphasised that more data are therefore required. Central risks/challenges of WASH and behaviour change activities include reverting to old behaviours once activities recede, as well as making WASH measures scalable across multiple schools.

In summary, snail distribution/habitats need to be mapped and checked for infection and snail control should be timed alongside MDA. Overall challenges of snail control include political will and lack of stakeholders, access to molluscicide, country capacity and funding. Snail control plans have been met with resistance from several stakeholders (environmentalists not comfortable). Advocacy for environmental improvement and snail control is therefore needed.

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<sup>7</sup> [WASH and Health working together: a 'how to guide' for NTD programmes](#)

<sup>8</sup> [World Health Organization: Field use of molluscicides in schistosomiasis control programmes: an operational manual for programme managers](#)

<sup>9</sup> [Resolution WHA 70.16: An integrated approach for the control of vector-borne diseases](#)

<sup>10</sup> [Global Vector Control Response 2017–2030](#)

## Session 7. Moving towards interruption of transmission

*Objective: Inform participants of countries ready to transition to interruption of transmission and inform/determine what should be the process for verification.*

*Moderators: Pauline Mwinzi and David Rollinson*

Drs Amadou Garba Djirmay, Reda Ramzy and Steffi Knopp provided the necessary context for the discussion which focused on experiences from countries aiming to interrupt/eliminate transmission and what the challenges and risks are currently being faced.

The WHO target for 2030 is to reduce the number of individuals requiring PC to 50 million. The progression of countries to EPHP and interruption of transmission has been planned by WHO based on conversations with regional focal points. It is likely that multiple strategies will be required to reach interruption of transmission (for example, biannual MDA has been unable to achieve elimination of transmission in Zanzibar, ZEST study). Programmes need to adapt and target interventions to a given area (e.g. more intensive treatment in required areas or adoption of a test and treat strategy). Risk-mapping to detect hotspots is required along with a clearer definition of hotspots. It is important that behaviour change occurs for interruption of transmission to be attainable. Improvements in health systems are needed. The additional impact of snail control and behaviour change could not be accounted for within the ZEST study due to low prevalence levels.

There are concerns over safety of conducting surveys in some areas/countries due to conflict. Infected migrants have been shown to re-introduce infection in country areas where schistosomiasis was no longer present. Additional risks are zoonotic transmission and overtreatment occurring in some areas. Transmission will also be maintained if the correct age-groups/individuals are not treated. Highly sensitive POC diagnostic tools and mapping of communities will allow for monitoring of progress towards interruption of transmission. It is important to be aware that if the WHO EPHP threshold changes, countries may have to change their goal.

## Session 8. Country ownership and resource needs

*Objective: Based on 2030 targets and Schistosomiasis Action Plan determine workplan to achieve Access to PC and schistosomiasis elimination.*

*Moderators: Maria Rebollo Polo and Sultani Hadley Matendehero*

This session focused on the exchange of lessons learnt and current approaches to mobilize resources, foster in-country domestic resources and country ownership for sustainability. Brief talks were given by Mr Warren Lancaster, Mr Eugene Rebuereziza and Mr Nebiyu Negussu. Discussions focused on what strategies and tools should be used to foster sustainability in-country.

There is evidence that some countries and their governments are already actively supporting schistosomiasis interventions. Support from more countries is needed with an improved transition from external investors/funders to local funders. A change needs to come from ministries of health. It is vital that domestic financing is encouraged and that small milestones are celebrated to aid in promoting community and country-level ownership.

The END Fund has teams that work with countries to establish infrastructure to obtain donations from in-country organizations/stakeholders/philanthropists etc. Advocacy and connections from government/NGOs are key (e.g. teams working on NTD financing collaborate with MoH personnel in order to engage them more and to make the Ministry of Finance aware that NTD programmes are a good use of their funds). Raising awareness of NTDs among health professionals and donors is beneficial. The Ethiopian Ministry of Education is revising guidelines to provide water in schools.

The number of donors and donations willing to fund this cause is limited. Investors are not thinking about long-term investments (e.g. END Fund investors typically provide two cycles of 3-year investments). Investors want to see results. Donor fatigue is a risk and donors expect countries to take ownership once they leave. Models could show the financial contribution moving from external donors to within-country funding over progression of a treatment programme. An investment case could also be built.

*Session 9 Synthesis, summary and wrap-up.*

*Objective: Determine the next steps for implementing the schistosomiasis action plan to achieve the 2030 targets.*

*Moderators: Paul Hagan*

The group agreed on the document containing feedback on the proposed goal [Appendix C] and that a statement based on these would be presented to STAG by Dr Wendy Harrison on behalf of the GSA. Key discussion points from Day 2 were captured in a template and circulated to all participants for further feedback with the meeting report [Appendix D].

The participants were invited to give feedback on the meeting itself and on the GSA, in particular if there were ideas on what more the GSA could do to assist the schistosomiasis community.

Participants were very happy with the meeting and the opportunity to provide feedback on the proposed WHO goal for schistosomiasis. Sincere thanks were given to the GSA executive team, the WHO, the Ethiopian FMOH, the Bill and Melinda Gates Foundation and to the Chair and Rapporteurs of the meeting.

The meeting was officially closed by Mr Nebiyu Negussu from the FMOH.

Appendix A: Meeting Agenda and Participant List

Appendix B: Global Schistosomiasis Alliance consultation feedback on the WHO proposed goals for schistosomiasis post-2020

Appendix C: Statement made to STAG on behalf of the GSA

Appendix D: Day 2 GSA session discussion outputs