

RBM Partnership to End Malaria
Multi Sectoral Working Group (RBM MSWG)
4th Annual Meeting, Session 1: 28th June 2021
Review of MSWG activities, reflection and refreshed focus
Hosted Online via Zoom

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Code of Conduct

RBM Partnership to End Malaria Multi Sectoral Action Working Group

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3. Disruption of talks by persons who are not chairing or facilitating the session.

Day 1: Monday 28th June 2021

Session 1: Review of MSWG activities, reflection and refreshed and focus

Co-Chairs: Graham Alabaster, Peter Mbabazi

This year, the RBM MSWG-4 meeting is going virtual, due to the current COVID-19-pandemic. We count 211 registrants (as of 27 June 2021). The participants are from 48 different countries, representing all WHO regions (AFRO, PAHO, SEARO, EURO, EMRO, WPRO).

Welcome & consensus on Peter Mbabazi's election as co-chair – *Graham Alabaster, UN Habitat, Peter Mbabazi, Ministry of Health Uganda, WHO*

Dr Graham Alabaster opened the meeting, welcomed participants and thanked all for their attendance. The working group was set up in 2018 because RBM had a strong interest in multi-sectorality and the Swiss Agency for Development and Cooperation (SDC) was willing finance the coordination of the working group with a multi-sectoral focus since 2017. The funding is received by Swiss Tropical and Public Health Institute (Swiss TPH). Approval was granted by the board on 14th April in 2018 in Dakar, Senegal.

Dr Graham Alabaster and Dr Robert Bos were the first co-chairs, Dr Robert Bos stepped down and was succeeded by Dr Maisoon Elbukhari Ibrahim as co-chair at the end of 2019 and stepped down in 2020. Dr Peter Mbabazi introduced his new role.

The RBM MSWG is a mechanism at global level aiming to minimize wasteful duplication, maximise synergies, and encourage harmonisation and pooling efforts for faster uptake and scale up of multisectoral strategies. The main objectives of the working group are to:

- Explore gaps in the design and delivery of integrated multisectoral approaches, building on the RBM multi sector framework.
- Encourage a wider participation in malaria control and eradication from other, non-health sectors.
- Identify addition resources to support activities
- Establish priority regions/countries where political will and resources in existing initiatives are conducive to multisectoral action.
- Develop prototype project concepts aimed at demonstrating new multisectoral approaches.

Overview of session 1, 28th June program

1. Welcome & Consensus on Peter Mbabazi's election as co-chair
2. Overview of 3-day program
3. RBM Partnership Strategic Plan 2021-2025
4. Malaria: Global Progress, Challenges and Priorities
5. Question and answer section
6. Revisiting the consolidated outcomes of the previous meetings
7. Progress report on work stream activities
 - a. Work Stream I: Malaria in the urban context
 - b. Work Stream II: Agriculture and malaria

- c. Work Stream III: The path-finder endeavour
 - d. Work Stream IV: The role of private commercial sectors in malaria
 - e. Work Stream V: Multisectoral messaging
8. Question and answer section
 9. Conclusions of day 1

RBM Partnership Strategic Plan 2021-2025 - Dr Abdourahmane Diallo, RBM Partnership

Since 2017, the RBM Partnership has been revitalised to face the challenges of a new era in global health. The RBM Partnership set out a three-part strategy in 2018 to keep malaria high on the political agenda, to promote regional approaches in the fight against malaria and to increase the financing envelope for malaria. The last year of the strategy started just before the onset of the pandemic, and that strategy enabled the community to respond to malaria effectively during one of the most challenging moments for global health. Due to this work, and the hard work of all involved, the malaria community has remained resilient in the face of the COVID-19 pandemic and has continued to build the necessary financial, political, and community support to sustain the fight against malaria.

At the beginning of the COVID-19 crisis, troubling signals were received. All LLIN campaigns appeared to be at risk to disruptions from the pandemic including implementation of global lockdowns. The global supply chain for vector control commodities, drugs and diagnostics were under threat. At global and country levels, we saw attentions were shifting entirely to address COVID-19. Modelling from the WHO suggested that in the worst-case scenario, we could see a doubling of malaria deaths, potentially reversing the progress that has been made over the last 20 years.

Due to the dedication of the malaria community, we were able to avoid the worst scenarios and keep malaria programmes on track. Campaigns were adapted to be COVID safe and widely rolled out. Major supply chain bottlenecks were successfully addressed, and a high-level advocacy helped ensure that the political will to address malaria was sustained overall. This support enabled the distribution of 170 million LLINs by the end of 2020, and more than 20 million children were protected through SMP.

Last year was a critical time for global fund applications. RBM/CRSPC provided support to 49 countries to complete their applications. This included international consultants, local meeting support for country dialogue and local consultants, country peer review through mock TRPs and expert review of proposals. \$3 billion for malaria programmes has been secured for the next three years. Over the last year, through consultations with stakeholders from all over the malaria community a new strategy has been developed to guide the partnership from 2021-2025 to build on achievements and to help the malaria community adequately face today's challenges.

The strategic objectives are:

1. To optimize the quality and effectiveness of country and regional programming
2. To maximize levels of financing
3. To facilitate the deployment and scale-up of new products, techniques or implementation strategies

These objectives are supported by four key strategic enablers:

1. Improving data collection, sharing and use
2. Increasing the effectiveness of the partnership
3. Maintaining a focused secretariat
4. Targeted advocacy and communications

Dr Diallo turned focus to the new key areas in the strategy that will require support. The first of these is with regards to innovation. We need to ensure a clear path from innovation to access. It is also of great importance to identify the role of the partnership in supporting and promoting new interventions, programme design and delivery, and how best to facilitate knowledge change that will allow for the streamlining of deployment and scale-up of new interventions, techniques and implementation strategies.

The second area concerns data for decision making. RBM has launched the Global Malaria Dashboard, a tool to facilitate high-level decision making, to address country identified bottle necks including major commodity gaps, and the status of planned vector control campaigns.

The third area concerns strategic advocacy and resource mobilisation. There is still a major gap in terms of global resources in the fight against malaria and we need to maximise the levels of financing that is available.

Finally, partnership enhancement is needed. In addition to changes around key deliverables, an important element of the strategy will be to map partners and identify gaps in organisations with technical, financial and political expertise as well as resource mobilisation. This year will see a detailed implementation plan to support the 2021-2025 strategy. Support from the community is needed to achieve these goals.

Malaria: Global Progress, Challenges and Priorities - *Maisoon Elbukhari, The Global Fund*

Maisoon Elbukhari thanked the organisers on behalf of The Global Fund for allowing them to present their work at this conference. She acknowledged that their partnership with RBM is due to their recognition that groups other than health sectors are required to achieve malaria control and elimination.

2021 marks the 20th anniversary of The Global Fund, it was founded following the United Nations (UN) session in 2001. The then secretary general of the UN charged the working group to set up a new organisation and that was the birth of The Global Fund. The partnership model is that The Global Fund pools resources and invests in programs to fight HIV, TB and malaria and also to strengthen the systems for health. Donors pledge funding at the beginning of the three-year replenishment cycles. At the 6th replenishment conference in 2019, donors pledged more than \$14 billion for 2020-2022 with the aim of saving an addition 16 million lives and averting more than 230 million new infections.

The Global Fund allocates the funds to eligible countries which is based on eligibility criteria which mainly pertains to disease burden and economic capacity. The countries then apply for funding after engaging in an inclusive consultation at national level. Following review and approval, countries implement their grants and the evaluation and oversight continue throughout the implementation to monitor progress and performance.

The current Global Fund strategy sets out the priorities to accelerate the progress against HIV, TB and malaria and improve global health. The first strategic objective is to maximise impact against HIV, TB and malaria. This is achieved through differentiated approaches adapted to the diverse country context and aligned to the UN AIDS fast-track strategy, the TB strategy and the global technical strategy for malaria. This strategic objective contributes directly to the achievement of sustainable development goal 3 (SDG). Making progress against the three diseases is unattainable without the existence of strong health systems.

The second health objective aims to build resilient and sustainable systems for health. The third objective intends to address human rights and gender related barriers to maximise impact. The

partnership model catalyses and incentivises the increased use of domestic resources and works towards an active partnership with other donors at national and global level to support control of the three diseases. The successful implementation of the strategy is also dependent on enabling factors, innovation, differentiation of services and the mutual accountability of all partners. The strategy includes ambitious goals and targets and recognises how the investment to end the three diseases contribute to and benefit from efforts to achieve the SDGs. Such as, investments to end extreme poverty, to empower women, to increase access to education, to reduce hunger, to combat climate change and to encourage economic growth all contribute to the goal of ending the three diseases.

Since the inception of the Global Fund, it has saved over 38 million lives, including 6 million in 2019. This has been made possible through the expansion in services, innovation and improved collaboration and coordination between organisations. The COVID-19 pandemic threatens to reverse the progress that has been made.

The malaria component in the current strategy intends to scale up and sustain interventions to reduce malaria transmission and death and help countries in their efforts to eliminate malaria. The Global Fund finance national, regional and multi-country grants that are designed based on need assessments and the interventions are aligned to the global technical strategy and RBM action and intervention to defeat malaria. Most of the resources are invested in countries where the burden of malaria is the highest and in countries where the least economic capacities. As malaria incidence declines, the Global Fund assists countries in monitoring surveillance and epidemic response capacities attaining the malaria free certification. To encourage the domestic investment and ensure sustainability as a country approaches transition to malaria free, the percentage of matching funds increase. The lower the disease burden and the economic ability to pay for health systems is high, the Global Fund expects a higher counterpart financing from the country. Eliminating malaria requires progress across almost all of the SDGs and eliminating malaria control and elimination does accelerate progress towards SDGs.

Malaria is currently present in more than 80 countries which can be divided into two categories, countries close to elimination and those with a high disease burden. The Global Fund provides resources to accelerate the needed investment in malaria control, prevention and treatment, while mitigating the pandemic's impact on the global progress to end malaria. The Global Fund provides 56% of all international financing for malaria and has invested more than US\$13.2 billion in malaria control programs as of June 2020. Through this funding, countries implement programs that include prevention efforts; the use of mosquito nets, spraying of insecticides and preventative treatments for children and pregnant women. Funds also support the expansion of diagnosis and providing treatment including advocacy, communication and social mobilisation efforts.

Through leveraging the economies and negotiating directly with manufacturers, the cost of insecticide treated bed nets is now US\$2 and the cost of antimalarial tablets dropped to less than US\$1 in 2019. These saving have allowed for the Global Fund to purchase more than 14 million extra nets and allow for the treatment of 24 million more people.

As of 2021, the Global Fund is on track with assisting with the elimination of malaria. However, despite signification investment since the early 2000s, the 2020 morbidity and mortality milestones were not met. Malaria is highly concentrated in low-income countries and in 2019, 95% of malaria cases globally were found in 29 countries and 95% of malaria deaths were in 35 countries. Despite the expansion in malaria control activities and increase coverage of diagnostic tools, the available resources are still limited. The funds for malaria control and elimination in 2019 were estimated at US\$3 billion falling short of the US\$5.6 billion that was the target set out. Of the US\$3 billion that was available in 2019,

30% came from the government of malaria endemic countries and the rest came from international sources led by the United States, the United Kingdom and France.

The future of malaria control is critically impacted by health systems capacities, biological threats such as biological and insecticide resistance and by socio-economic factors such as population growth, migration, poverty and climate change. To accelerate progress to the outlined targets, more investments in core epidemiological and entomological capacities but the service delivery methods also need to be optimised. Innovation is required to develop new tools, new approaches and to find resources from other sectors.

Progress over the last two decades suggests that success in malaria is feasible provided that there are well working national systems and a coordinated response to assess the data, political, socio-economic and other contributing factors.

The COVID-19 pandemic remains a large public health crisis, of that are supported by the Global Fund, 10 countries are among the top 25 with the highest cumulative number of cases. Many countries are implementing the Global Fund grant have a positive rate of higher than 5%. While daily cases in some countries are decreasing, the model suggests that infection far outweighs confirmed cases. The emergence of new variants introduces greater problems in the countries served by the Global Fund. The delivery of malaria services has been significantly impacted, according to the WHO poll survey on the continuity of public health services during COVID-19 pandemic, approximately 40% of 135 countries had reported disruptions to one or more malaria services as of April 2021. In countries funded by the Global Fund, there has been 10-16% reduction in case identification when compared to 2019.

In 2020, the Global Fund approved more than US\$700 million in support of the COVID-19 response. As of now, more than US\$1 billion has been used to support the COVID-19 response in 105 countries and 14 multi country grants. 61% of the US\$1 billion was allocated to reinforce the national response, 29% to mitigate the impact on the three diseases and 9% on urgent improvement on health systems and community systems.

The objectives for the 2023-2025 funding cycle have been identified as:

- Expand equitable access to basic primary health services that includes quality early diagnosis and treatment of malaria and accurate recording and reporting of the clinical encounters.
- Achieve and sustain adequate levels of effective vector control of locally appropriate tools.
- Optimize the implementation of malaria interventions, utilizing more granular data and capacitating decision making and action at a sub-national level.
- Drive towards elimination and facilitate prevention of reestablishment in areas near to the end game.
- Establish consistent levels of control for all areas of historically high malariogenic potential and strive for regional elimination in a select geographic area of sub-Saharan Africa to demonstrate the path to eradication.
- Contribute collectively to health system strengthening, capacity building and sustainability to prepare and respond to external threats to malaria control such as climate change, pandemics, complex emergencies, political instability.

Questions on the previous two presentations

Dr Mah from Pakistan posed the question, *“How do we make other sectors aware and participate in elimination of malaria? It is very much viewed as a health sector issue only.”* Maisoon Elbukhari responded, *“The global technical strategy acknowledged the importance of a multi-sectoral response*

to malaria and named it as one of the enabling factors to reach the GTS targets and goal which works as an entry point when negotiating at a national level. The GTS also advocated in for a health in all policies approach rather than a single disease approach when developing national malaria control and elimination strategies. The WHO is in the process of updating the GTS which is believed to reflect the experiences and lessons learned from the engagement of communities, governments and private sectors in the national malaria response. These will be good areas to monitor and try to carry to the countries as framework on a national level. It is a point of maturity as the GTS is now acknowledging all the social determinants of health on the future of eliminating these diseases.”

Revisiting the consolidated outcome of the previous meetings – Dr Graham Alabaster, UN Habitat

Dr Graham Alabaster gave an overview of the progress of the MSWG since its inception. The first meeting took place in Basel, Switzerland in October 2018, the second meeting took place in February 2019 in Geneva, Switzerland and the last in person meeting took place in February 2020 in Geneva, Switzerland. Since 2019, the interest and attendance has grown significantly from 37 to more than 80 people joining the zoom meeting.

At the inaugural meeting, the attendees tried to frame what they believed the MSWG would achieve. It was agreed that the scope and focus was on malaria, other vector-borne diseases especially *Aedes*-transmitted arbovirus infections, and, in special contexts, other infectious diseases. Specific sub-sectors were also looked at including agriculture, the extractive industry, human settlements/urban planning and development and the tourism sectors as the initial focus of the group. Prototype project concepts were developed in agriculture, mainly livestock management, irrigation and drainage which has been picked up and will be discussed in further presentations. In urban development, an in-depth case study of Accra, Ghana. Accra being one of the 100 Resilient Cities supported by Rockefeller and engaged in a major clean-up effort. Policy and technical guidance to the extractive industry, particularly on health impact assessment, performance standards and safeguard criteria.

It was agreed that there should be advocacy briefs, to be aimed at the stakeholders and policy makers outside from a top-down perspective. This has been achieved and has been manifested in some of the outputs which will be reviewed throughout the sessions. Outreach to organisations and experts outside of the health sector is still ongoing. Some areas that have delayed due to COVID-19 are collating existing information and research.

Work has begun on developing a rapid assessment tool which will be used as a guide for other sectors on how they assess a malaria agenda. Mapping of existing data on health, environmental, urban projects in malaria-affected areas is a work in progress but the main issue is desegregating data from each sector.

There has been a lot of initial discussions with other work groups, especially the vector control working group and the possibility of having some overlapping sessions has been explored. The results of the MSWG have also been shared to allow for collaborative work between all working groups.

In the second meeting the top ten activities from the first two meetings were prioritised. The Consensus Statement for the MSWG is currently being formulated alongside brief messages for specific audiences including, policy or technology oriented briefing notes aimed at stakeholder groups at different levels. Unfortunately, there has not been a lot of success in engaging with the private sector, there was some participation at some of the working group meetings but it still remains a challenge. Work on the revision of the WHO manual on environmental management for vector control with special reference to malaria and the design and implementation of feed-back mechanisms for the MSWG have not been addressed. The MSWG planned to make multi-sectoral action the theme for

the Elimination of Malaria 2020 World Malaria Day but due to COVID-19, this did not take place. Neither could events aimed at disseminating information be carried out and have been postponed to late 2021. Key speakers from other sectors have been invited to MSWG talks and were showcased throughout this conference. Promoting mapping of relevant non-health sector stake holders by country has also started and is in progress.

One area which has made huge advances in is mobilising city leaders in the Commonwealth Healthy City Agenda. It allows mayors and city leaders to be the guardians and receive guidance and advice to manage multi-sectoral processes in the cities that pertain to malaria and vector-borne disease.

Impact of rice cultivation on malaria vectors – Elliott Dossou-Yovo, Africa Rice funded by the Wellcome Trust

Since the independence of Africa from its former colonies, there has been an increase in the production of rice however, production has not been able to keep up with the consumption requirements for the continent. In 2020, approximately 40% of rice consumption in Africa is facilitated by rice importation.

There are three major rice production systems in Africa, the irrigated system with total water control on large and small irrigated perimeters (water is mainly controlled through reservoirs and drainage canals); rainfed uplands without water control; and rainfed lowland with partial or no water control.

Approximately 38% of the rice produced is from rainfed lowland areas, 32% comes from rainfed uplands and 26% comes from irrigated lowlands. The average yield is higher on irrigated lowlands compared to the rainfed lowlands and uplands but all are much lower than the potential yield from the land. Therefore, there is a large gap between farmers' yields and the maximum yields that can be achieved which suggests opportunities to improve rice yields through appropriate research.

Among the three major cereals, the crop water productivity defined as the grain yield to the total water used, is the lowest in rice when compared to corn and wheat. However, when comparing the global warming comparisons of the three cereals, rice is the highest when compared to maize and wheat.

Rice fields are a natural breeding site for malaria vectors such as *Anopheles gambiae* s.l. mosquitoes. 20 years ago, it was unclear of the role that rice fields had in the spread of malaria but now it is clear they are an ideal site for vector control. From larval sampling in Côte d'Ivoire, a hectare of rice field can generate to up to 5 million *Anopheles* females per cropping season.

Africa Rice has now developed the following rice intensification objectives:

- Increase rice yield
- Reduce water use
- Increase water productivity
- Reduce greenhouse gas emission
- Reduce malaria transmission potential

In Côte d'Ivoire, different water and nutrient management quantities were tested on their effect on rice yield, mosquito density and water productivity. Seven different treatments were used: continual flooding with the standard amount of fertiliser, alternate watering and drying starting at 10 days after transplanting combined with the standard rate of fertiliser. The third treatment used alternate watering and drying starting at two days after transplanting combined with the standard rate of fertiliser. Treatment four used intermittent irrigation and the standard rate of fertiliser. Treatment

five was continual flooding and no fertiliser, treatment six used continual flooding and a forced drainage of fertiliser prior to application and treatment seven used continual flooding without rice cultivation and no fertiliser was used.

The results showed that rice production increases the density of the mosquito population, the treatment where there was no rice, the lowest rice densities were seen. Fertiliser application increased the density of the mosquito population. It was found that alternative watering and drying significantly reduced the mosquito population in comparison to continuous flooding. In terms of yield and water productivity, alternative watering and drying and the standard rate of fertiliser application reduced mosquito densities and increased water productivity while maintaining the yield of continuous flooding. It was also found that specific field management activities such as transplanting and fertiliser application, replanting and weeding, increase the mosquito density in a rice field.

In conclusion, rice brings more malaria vectors, which is likely to increase the prevalence of malaria incidences in surrounding areas. If rice farmers had personal protection methods and vector control methods this could help them to control the approximate 5 million *An. gambiae* female mosquitoes that can be produced per hectare during cropping season. Crop management is extremely important in controlling mosquito populations such as alternate wetting and drying and using sampling tools to estimate mosquito density.

Questions and Comments

A question was posed on the scope of the work and whether other grains should be involved in the research as rice is not the only crop that provides a breeding sites for mosquitoes in Africa.

A comment was made that *“we should be careful as malaria is not the only problem with rice growing in wetlands but other VBDs like Japanese Encephalitis may also creep in.”* The question was answered that Japanese Encephalitis would be more of a concern in Asia but in Africa, malaria is of greater concern in rice fields. However, an example was given of the 1930 water releaser in Karnataka where the Krishna Raja Sagar Sam in Mysore cause malaria and JE soon followed. Mosquito populations in this instance were managed by gambusia, a larvicidal fish.

An additional comment was made that a ‘win-win solution’ would not be enough in regard to rice production and reduced mosquito populations but instead a ‘win-win-win-win’ where there is a high crop yield, an efficient water system, suitable methane production levels and low numbers of mosquitoes.

The question *“isn't it possible to engage agronomists and model strategies of increasing/maintaining rice production with reduced water/water logging?”* Responses from people within the Africa Rice organisation stated that this is what they are currently going. The approach of using rice experts who incorporate “not growing mosquitoes” into their methods has been fostered instead of entomologists who try and grow rice.

“Who is most at risk from the mosquitoes breeding in the rice fields Is it the workers in the field or nearby families living in proximal villages Do the mosquitoes bite during the day when workers are in the field or at night in the villages. What might be the role of impregnated clothing IRS or net use or strategies to prevent mosquitoes entering the houses. What would be the benefit of regular testing and treating at risk populations and reducing the parasite load in the humans. What could be the role of larvivorous fish placed in the paddy fields?” was directed at the Africa Rice team to answer in which the following responses were given *“with only a few unimportant exceptions, malaria mosquitoes ONLY bite at night. So yes, everyone sleeping within 1-3km.”* *“Preventing mosquitoes from biting the people living in the villages should not be the only solution. We found management practices that*

generate high yield and fewer mosquitoes. Such practices should be promoted along with the efforts made by the health sector.” An additional comment was made on the feasibility of using eco-friendly larvicide to fertilisers, especially those with actives already approved for pest control such as Pyriproxyfen could be a short-term solution. It was added that most farmers do not apply safety measures when applying pesticides.

Make development work for malaria and malaria work for development – The steering group – Erik Blas
Erik Blas outlined the members of the steering group who are Ahmad Raeisi, National programme manager for malaria control, Associate Professor of Epidemiology (DCD/MoHME), IR Iran. Fatima Bashir, UNDP, Geneva (Secretariat), Justin McBeath, Malaria Vector Control Strategy Lead at Bayer, United Kingdom, Luciano Tuseo, Mekong Malaria Elimination Coordinator, WHO Cambodia, Mah Talat, project director, The Indus Hospital and Health network, Pakistan, Peter Kwehangana Mbabazi – Finance and Multisectoral Collaboration Expert, NMCP-MoH, Uganda and Erik Blas – Consultant, Denmark (Secretariat). The steering group was established after the third meeting of the MSWG.

From RBM-MSWG, the aim of the steering group was to try, learn, and share in real-life situations the ideas and approaches described in the refreshed Multisectoral Action Framework for Malaria (MSAFM). The second objective was to, identify partners, tools, path-finder countries and start rolling out in 10 to 15 countries covering different geographic, epidemiologic and ecologic situations.

Since the last meeting, the steering group has been active and has held 7 virtual meetings, 3 virtual rounds of consultation with MSWG Coordinator and co-chairs for approval of membership, products and for input and guidance for future planning. Five distinct products have come out of these meetings; a concept note on how the group can move ahead, an annotated timeline, three budget scenarios and a Malaria Pathfinder Rapid Appraisal Tool (MPRAT).

The concept of benefits and selection are to reverse the vicious cycle of a lack of development and increase in malaria spread. The aim is to improve development so that malaria rates are reduced and this will be achieved by trying, learning, and sharing jointly with collaborative partners, and across countries and districts. There are a number of co and added benefits, one of these is the primary objectives across sectors participating being met including control of all diseases linked with social, economic, and environmental determinants, and inequities, including Covid-19. There will be four criteria for district selection (using the MPRAT): The hardest districts – in terms of malaria persistence and development challenges, the best people – i.e., the strongest District Pathfinder Champions with the hardest districts. The strongest local government commitment which will be expressed in terms of a written statement. The widest diversity of contexts – e.g., variety of underlying causes for malaria persistence.

The five steps to becoming malaria smart have been identified to achieve sustainable elimination. The first is to educate staff and their families, then clients and their families. Third is the production of malaria-producing activities that do not cause harm. The fourth is malaria-reducing potentials that aim to do good, and the final step is socio-economic development for malaria synergies with other sectors. These embrace what goes on in a lot of the conventional malaria programs in selected sectoral programs but this aims to do this in a collaborate way.

Malaria influences all the SDGs and all the SDGs influence malaria. The pathfinder initiative aims to release potentials for synergies and co-benefits. The 17 SDGs have been split into 5 main categories, politician/institution, economic, social, environment and climate and health. This will be monitored through malaria specific indicators, malaria specific indicators – as per NMCP / GMP. Two key indicators per SDG that are particularly relevant will be chosen for the control of malaria. Citizens and

communities, local authorities, locally present development partners, international development partners, national statistics authorities and research partners are all being contacted to be a part of a consortium.

The aim is to narrow the knowledge gap by having a better understanding of causality and thresholds. Learn how to optimise application of new technologies to better share, analyse and use information across sectors. Identify the costs and benefits of doing things differently and how they can be distributed. Finding a way to make all of it happen and find out what actually works through research.

The steering group has been ready to commence work since December 2020 but due to incremental rather than lateral thinking, the group has competition and turfs between organizations and interest groups which are preventing work progression. The lack of courage to try, learn, and share between potential stakeholders also acts as a limiting factor.

The next steps required for the steering group to progress are the need of seed funds estimated at US\$150K to meet and engage with core partners, launch with missions and wider partners. Funding would also be distributed to tool development including, workshops to facilitate the use of the existing tools. Initial set-up of social media approach, for the sharing of what has been taught. The collaboration of work with existing organisations such as the Great Lakes Border Malaria Initiative in East Africa, would be useful for Batch-1 Roll-out of forerunner countries. The steering group is asking the MSWG to request UNDP to provide a structural home for the Pathfinder Endeavour so that they can receive funds. They are also requesting UNDP and RBM for shared parenting of the Pathfinder Endeavour.

Role of the Oil and Gas Sector in Fighting Malaria – Proscovia Nabbanja, Uganda National Oil Company
Proscovia Nabbanja's presentation outlined the oil chain in Uganda, the social context, mitigation measures, challenges that need to be addresses and ways in which management plans can be supported.

UNOC is currently working on several projects in partnership with various private sector organisations. UNOC's project scope spans over seven areas; the upstream projects that deal with licencing and exploration of new resources, midstream projects that work with oil refinery, transportation and gas processing in the Kabaale Industrial Park and downstream projects that work on oil distribution and downstream bulk trading.

As a state, Uganda has seen several benefits by investing in oil-based projects. Upstream projects attract direct foreign investments that currently stand at US\$3.5 billion. It also enables the production of crude oil and gas which generates revenue in the country through high skilled jobs. The Ugandan refinery project helps to improve the country's balance of payments, provides security for petroleum products. The petrochemical development also allows for the utilisation of refinery by-products such as plastics, fertilisers and industrial gases. The East Africa Crude Oil Pipeline provided access to the international oil market which also brings in revenue. More than 5,000 jobs during the construction phase result as a direct benefit to the host community. It triggers further exploration in the region by providing infrastructure incentive for discovered oil to access the oil market. The Kabaale petro-based industrial park provides macroeconomic benefits such as, increase in industrial development in by-products such as fertiliser, polypropylene, plastics, industrial gases, Bulk LPG uptake among others. It similarly generates revenue by the government through taxes and duties. Synergies are optimised with the airport thus boosting industries, labour and equipment mobility among others.

Malaria is one of the most reported diseases in Uganda and is a major public health problem reported in the Albertine which is where most of these developments are. Uganda has the 6th highest number

of annual deaths from Malaria in Africa at 10,500 deaths annually. This has socio-economic impacts include out of pocket expenditures for consultation fees, testing, drugs, transport and subsistent at health facilities estimated at USD 0.41 to USD 3.88 per person per month. To the economy loss of workdays, reduced productivity and decreased school attendance. Malaria is prevalent in the Albertine especially along Lake Albert in the fishing and sand mining communities.

Malaria transmission occurs throughout the year in the Albertine and peaks in June, August November, and January when there are heavier rains. In a 2015 Social Health Baseline Survey indicated that 50% of visits to the Bulisa District health centres were diagnosed with Malaria.

There are several factors that UNOC are trying to mitigate however, they are aware that these factors cannot be dealt with alone and the need of multi-sectoral work is required to combat them. The main stakeholders have been identified as the Ministry of Health, schools, community-based organisations, the malaria consortium and partnering with other oil and gas companies to ensure that the mitigation measure are consistent among all organisations. Three main areas have been identified; prevention which includes targeted interventions such as avoidance of stagnant water, IRS and distribution of mosquito nets. Treatments, the availability and distribution of treatments for all who require them. Surveillance in the community by training all staff and contractors in malar control.

As interventions are established, there are challenges that are faced, especially at health facility level. These include lack of medication, equipment, suitable infrastructure, personnel and suitable housing. One of the first challenges that was faced was the misuse of mosquito nets. Collaboration with the Ministry to Health to ensure that right budget allocation is put in place to support the fight against Malaria is important to support the initiatives. Support from private sector to focus support through the obligations of their respective ESIA obligations and ensuring initiatives undertaken in a sustainable manner is crucial so that the District and Ministry of Health can take over independently.

Other supporting management plans have been identified and cover strategies and mechanisms, social, biodiversity and the physical environment. From a strategic perspective, every project must have a social management strategy, an influx management strategy, a national content framework, stakeholder engagement plan, health and safety and environment management system. These go a long way in addressing the key risk factors surrounding malaria but are not limited to malaria. From a social perspective every project has a labour management plan, a cultural heritage and archaeological management framework, community content, economic development, and livelihood plan. A community health, sanitation, safety and security plans are required. There are plans around tourism, community road safety, transport management, contractor social management control framework and gender management plans. Most of the casual labourers at the work sites are male however the UNOC are trying to employ more women so that they benefit equally from the projects. Within the biodiversity sector, there are existing frameworks such as the biodiversity and ecosystem service action plan and management plans, the alien invasive species management plan, the site clearance plan, site restoration plan and the wetlands management plan. The physical environment sector has the physical environment monitoring plan, surface run off and drainage management plan, emission and dust control plan, noise and vibration management, waste management plan and the landscape and visual management.

Questions and Comments

A comment was made to *"...remember that in development projects, mosquitoes can exploit not only the structures left behind by the project, but also the breeding sites created during the process of construction. With that in mind, let's try to make sure that building the pipeline does not provide Anopheles stephensi with an easy route inland. It is not yet reported in Tanga, but in 3 years, who knows!"* The presenter, Proscovia responded *"there are supporting management plan to address this. most important is the physical environment monitoring plan coupled with environmental audits which*

are done on a regular basis. For comfort, the EACOP pipeline is a buried pipeline 2m deep all the way and there is an abandonment plan that must be approved before the project ceases.”

A question was asked, “How are the oil surrounding populations ownership plans going to be planned?” Proscovia responded “the land and property ownership, is managed through the Resettlement Action Plan (RAP) that details the land acquisition process, compensation and livelihood restoration. IFC standards are used for this.”

Mass Action Against Malaria (MAAM) - Creating a young generation of malaria champions – Peter Mbabazi, Ministry of Health Uganda, WHO

Peter started the talk by outlining what the presentation would entail: MAAM’s framework, commitment and advocacy, the need for multi-sectoral action including child poverty and malaria. The talk will also explore ways of creating a young generation of malaria champions and possible strategic actions. Target audiences and stakeholders will be identified and the requirements of multi-sectoral engagement and the roles of schools in Uganda Malaria Reduction and Elimination Strategic Plan (UMRESP) implementation. Mainstreaming malaria multisectoral budgets and the creation of the Budget Call Circular 2021-2022 and finally the MAAM book series.

The MAAM framework is aligned with the UMRESP 2021-2025. The vision is to achieve a ‘Malaria free Uganda,’ the slogan is, “Am I malaria-free today?” and the strategy is to ‘Reach every household with all malaria interventions’ where malaria is everyone’s business requiring mass action against malaria at all levels by all stakeholders. The strategic objectives and targets are adjusted as all (100%) of households and the entire populace of risk in all districts of Uganda are in focus.

In 2018, the president of Uganda, Yoweri Museveni, committed that a malaria-free Uganda is his responsibility, and he signed the commitment. Having secured this high level of political engagement, the aim is for Uganda to be malaria free by 2030. This has also led to multi-level commitment from constituencies, districts, villages, schools, classes and individual homes.

Engaging beyond the health sector: developing ambitious national responses to the Malaria- related targets included in the SDGs will require action across all government departments, as well as the engagement of civil society and the private sector. There are critical to delivering the national commitments which include implementing health-in-all-policies, whole- of-government and whole-of-society approaches for addressing malaria. Setting national targets for malaria; developing and strengthening national multisectoral policies and plans and incorporating malaria into the national development agenda and plans. Raising awareness about the national public health burden caused by Malaria and the relationship between malaria, poverty and social and economic development.

Comparing epidemiological maps of Uganda from 2018-19, there was a correlation between poverty and malaria incidences. The highest rates of poverty and malaria were seen in Karamoja, followed by the West Nile and Busoga.

Creating a generation of malaria champions requires identifying who will be the most effective members to champion the movement in the future. MAAM books alongside COVID-19 material was distributed in schools. In previous years, interest has been sparked through the running of mass awareness campaigns and inter school competitions including malaria in science, school debates, music, dance and drama and celebrating world malaria day in schools. A clinical service presence in schools through routine malaria services attending schools allows for early diagnosis and referral.

Including children of school attending age, key stakeholders include parents and families, members of parliament, the general public, district leaders, sub-county leaders, policy leaders, religious leaders

and cultural leaders. The ministry of Education and Sports also plays a key role through school management, science teachers and school nurses that all come into contact with children and their families. These are supported by circular document, signed in February 2021 that require the above-mentioned stakeholders to commit to malaria-safe practices in schools. This is a classic example of multi-sectoral engagement.

To reach the outlined objectives, each stakeholder has been given a list of initiatives that they can get involved in to help reduce and eliminate malaria, including the use of LLINs, IRS and larval source management and how to manage cases. The roles of each stakeholder in strengthening the private sector's management of malaria have also been outlined and how to strengthen the quality of services and ensure services remain affordable. How social and behavioural communication such as the awareness to create change, social mobilisation for participation and advocacy for each stakeholder has been outlined. Malaria surveillance and monitoring and vector control leading to elimination have also been outlined for each stakeholder.

Uganda has developed guidelines for mainstreaming malaria in the multi-sectoral which advise organisations on how to facilitate this process.

The MAAM book series has been designed to educate primary school children on how to facilitate malaria control. These promote both a reading culture and the necessary education to allow for children to become future malaria champions.

Mobilizing urban level actors in multisectoral processes – *Graham Alabaster, UN Habitat*

A lot of time has been dedicated to bringing in mayors, city leaders and urban planners to get through to their sectors. Effort has been put into building the healthy cities, health people initiative, working to get multiple partners including city leaders into multi-sectoral groups to address malaria and other VBDs and NTDs. UN Habitat works closely with planners and engineers to build healthy cities and territories for VBDs and other diseases. The compendium for industry practices provides clear guidelines on who to achieve healthy territories. Work has also been done with BOVA to provide training courses on safe architecture.

The slides were shared in the interest of time.

List of acronyms

AFRO	Regional Office for Africa
AIDS	Acquired Immune Deficiency Syndrome
AMP	Alliance for Malaria Prevention
BOVA	Building Out Vector-borne disease in Africa
CRSPC	Country/Regional Support Partner Committee
DCD	Department of Disease Control
EACOP	East African Crude Oil Pipeline
EMRO	Eastern Mediterranean Region
EURO	European Region
GMP	Global Malaria Programme
GTS	Global Technical Strategy
GVCR	Global Vector Control Response
HIV	Human Immunodeficiency Viruses
IRM	Insecticide resistance management
IRS	Indoor residual spraying
ITN	Insecticide-treated net

IVM	Integrated vector management
LLIN	Long-lasting insecticidal net
LSM	Larval source management
MAAM	Mass Action Against Malaria
MOHME	Ministry of Health and Medical Education
MOOC	Massive On-line Open Course
MPRAT	Malaria Pathfinder Rapid Appraisal Tool
MSWG	Multi Sectoral Working Group
NMCP	National Malaria Control Programme
NTD	Neglected Tropical Disease
NTNC	New Tools New Challenges
PAHO	Pan American Health Organisation
RAP	Resettlement Action Plan
RBM	Roll Back Malaria
SDC	Swiss Agency of Development and Cooperation
SDG	Sustainable Development Goals
SEARO	South-East Asian Region
SOP	Standard Operating Protocol
TB	Tuberculosis
Swiss TPH	Swiss Tropical and Public Health Institute
UMRESP	Uganda Malaria Response and Elimination Strategic Plan
UN	United Nations
UNDP	United Nations Development Programmes
UNOC	Uganda National Oil Company
VBD	Vector borne disease
VC	Vector Control
VCAG	Vector Control Advisory Group
VCWG	Vector Control Working Group
WPRO	Western Pacific Region
WHO	World Health Organization