

VCWG work stream 2

Annual Meeting, session 4 – May 4, 2022

Q&A in chat function

Theme: Larval source management	
Facilitators: Jen Armistead and Prosper Chaki	
Presentation 2: MESA Alliance LSM landscaping. Beena Bhamani, MESA Alliance	
Questions/Suggestions	Replies
<p>Comments on building up on the LSM MESA Tracker:</p> <ul style="list-style-type: none"> - Michael Macdonald: Maybe we could also "crowd source" from VCWG members a landscape of those country programs and companies implementing LSM that may be 'routine' rather than higher. - Mohan Rao Arasada: Feasible suggestion for consideration. - Elisabet Martí: shared link to MESA: MESA website http://www.mesamalaria.org/ - Richard Reithinger, RTI: FYI A Cochrane review on habitation manipulation/modification for malaria control is currently under review; which will complement/update the Cochrane Reviews on LSM by Tusting et al. (https://bit.ly/388YBEi), Larviciding by Choi et al. (https://bit.ly/3kG0KtP) and Larvivorous Fish by Deirdre et al. (https://bit.ly/30ZiAp0) 	
Presentation 4: Community based larval source management in Kenya. Lenson Kariuki Principal Medical Entomologist NMCP -Kenya	
Barnabas ZOGO: Understand why you are not implementing larviciding in the rainy season but are you expecting a significant impact as malaria cases usually are the highest levels in the rainy season?	We are viewing it in terms of fixed and few sites after the rains or before the rains. During the rainy season the habitats are not fixed and many which will have a cost implication.
Ole Skovmand: Bti residual effect is a few days, so will you have a population build up before next application 2-3 months later?	We will be doing weekly monitoring after application and the data will guide us on frequency of application. That's why I indicated that we will mainly rely on monitoring data.
Anne Wilson: Will you use routine data for monitoring epidemiological impact?	We will use routine data from health facilities within the catchment area. However, we are trying to engage research and academic institutions for cross-sectional/prevalence data.
Sheila Ogoma: What are some of the main challenges when working with the community?	Packaging of information and community perception that LSM might be the solution to their malaria problem hence they think other interventions that are more personal driven such as use of nets are not necessary. Also lower level community political interference - who will be engaged in the project.
Prosper Chaki: With bulky stocking of biolarvicides wondering whether you have plans to monitor their efficacy over time taking note that the shelf life may actually be affected by the high temperature fluctuations.	That's true. Indeed, we have set two sites where we will be running controlled efficacy trials through KEMRI.

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<p>Corine Ngufor: In terms of costs, how do you think LSM will compare to other core-interventions? Does the LSM project affect the availability of funding for other malaria control measures? Are you planning to combine LSM with other interventions?</p>	<p>Well, at the moment I may not exactly talk much about cost but based on historical data, the LSM impact on reduction of malaria burden especially if it is community based is clear.</p>
<p>Denis: Is application done once in every 2/3 months? Also, how long will baseline data be collected?</p>	<p>Frequency of application will be guided by weekly monitoring data and also data from the controlled efficacy sites, but the claim label indicates 2-3 months residue. Baseline data will be collected for 14 days.</p>
<p>Further explanation by Lenson</p>	<p>The use of two biolarvicides is based on how they are affected by biotic and abiotic factors. Bti is not suitable for organically polluted water and undergoes photolysis fast and therefore suitable for fast moving non-organically polluted water. <i>B. sphaericus</i> is not affected by organic matter and photolysis is very slow and therefore suitable for stagnant and organically polluted water where <i>Culex</i> mainly breeds.</p>
<p>Presentation 5: Implementation of Community-based Larval Source Management for Enhancing Malaria Control in mainland Tanzania. A process narration. Denis Kailembo, NMCP / Swiss TPH – TEMT Project</p>	
<p>Mark: How do you make the selection of biolarvicide, Bti or Bsph? <i>Anopheles</i> vs <i>Culex</i> species?</p>	<p>We are using both products, will be alternated within the rounds.</p>
<p>Sheila Ogoma: What are some of the main challenges when working with the community?</p>	<p>It is important to provide necessary information on LSM both to the councils and the community. It especially helps using the current local government structure. This assists the acceptability of the intervention within the community.</p>
<p>Denis Kailembo: Is application done once in every 2/3 months? Also, how long will baseline data be collected?</p>	<p>Frequency of application will be guided by weekly monitoring data and also data from the controlled efficacy sites but the claim label indicates 2-3 months residue. Baseline data will be collected for 14 days.</p>
<p>Jo Lines: While VCWG is thinking about LSM in rice, I would like to ask if anyone else is working on the idea of putting Bti into farmers' fertilizer? This was first tried out by a Tanzanian group including Humphrey Mazigo, Eliningaya Kweka, Leonard Mboera, among others. We</p>	<p>Silas Majambere: Not aware of the trial of mixing larvicides and fertilizers. I would anticipate more issues with such a process than what it would resolve. Do you know which products they were mixing? Would be interested to know more. Prosper Chaki: They used Bti (Bactivec).</p>

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wondered if anyone else is following up on it?	
Theme: Human behavior, human centered design (HCD), and vector control Facilitator: April Monroe	
Presentation 3: AEGIS Kenya Social Science: rationale, methods, interim results and implications. Prisca Oria Kenya Medical Research Institute (KEMRI)	
Questions	Replies
Sheila Ogoma: Do you also ask about use of traditional mosquito repellent methods (burning of stuff)? Do you think the visibility of smoke from the coils is a characteristic that encourages its use?	The respondents were not asked this question.
Joe Wagman: Can you describe the results of the overlay of human and mosquito behaviors? Does this mean that much of the time that HLCs were recording outdoor landings, there was no one else outdoors (other than the mosquito collectors)?	There were HLC collectors indoors and outdoors and household members went about their lives normally (or at least as close to normal as possible). For the observations of human activity, we also observed and recorded hourly. We were therefore able to overlay the hourly mosquito data and the hourly behaviour data for analysis.
Fred Yeomans: After R1 which products were some households not using anymore/as much? Presumably coils etc rather than nets?	Both. But we were more concerned about ITNs and reinforced the key message of continued ITN use and the fact that the SRs are still under research and even if they proved significantly effective, they would be an additional strategy to ITNs.
Jane Miller: Do you have any idea of the costs associated with use each month?	Sorry we don't have the information about monthly cost at this point but the project is working on it and we hope to have it at the end of the project.
Gaby Zollner: Did the study participants comment on whether the spatial repellent seemed to have an effect in reducing other insects (such as houseflies, ants, etc.)?	Yes, mainly cockroaches.
Presentation 3: BOHEMIA Broad One Health Endectocide-based Malaria Intervention in Africa. Caroline Jones and Felisbela Materrula	
Questions	Replies
Lina Finda: My colleague and I (in Tanzania) did a survey and in-depth conversations on communities'	In Mopeia, we did all the mobilization, sensitizing the community that the medication should be taken in the presence of the field team, not out of control, but in order to have the correct record of the entire process. There was a case of a participant who asked

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<p>perceptions of MDA with IVM, where IVM had previously been used for control of LF, and what they said was that often people would take the drugs from the community health workers so as not to offend them, but once they left they would throw the drugs away, because generally, people do not like taking drugs, especially when they are not sick. How will you respond to a challenge like this?</p>	<p>to be taken after leaving the team. This participant was excluded from the project, but these are very rare cases.</p>
<p>April Monroe: What is one piece of advice you would give to colleagues who want to consider end-users and affected communities more intentionally in their work?</p>	<ul style="list-style-type: none"> - Leave your own preconceptions at the door and actively listen. - Centre empathy: By rooting problem-solving in empathy, we make room for truly collaborative and creative novel solutions to the complex problems of malaria control and prevention. - Reflect on how you influence what people tell you and what you hear. In qualitative research the researcher is the 'tool'. - 'The researcher is the tool'. - With active community engagement: Begin planning for it as soon as you begin conceptualising the project. It requires well thought out investments in resources (e.g. plan, talent, time, funds, etc.) and works well when carefully thought through. - One thing I learned with engagement of the public for GM technologies is that if you are not the first to provide information, then they will get information from either the web or anti-GM groups. If this information is negative, then it is extremely hard to change their minds. So you have to think carefully about engaging the public early in any engagement activities.
<p>April Monroe: What are you most excited about for the future of this type of work?</p>	<p>I'm excited about novel solutions that can be designed alongside communities as the true experts of their needs and the needs of their communities. As new threats and new innovations emerge, like stephensi and the RTS,S vaccine, HCD has the power to bring groups together to create solutions that work - solutions that resonate with users and are truly sustainable.</p>
<p>Theme: Research updates on innovative vector control Facilitators: Sheila Ogoma and Allison Tatarsky</p>	
<p>Presentation 1: Mark-release-recapture experiment in Burkina Faso demonstrates reduced fitness and dispersal of genetically-modified sterile malaria mosquitoes. Franck A. Yao, Institut de Recherche en Sciences de la Sante, Burkina Faso</p>	
<p>Questions</p>	<p>Replies</p>
<p>Oliver Briet: Obviously it makes an eventual</p>	<p>I agree with you that a release program is more expensive when the GMO mosquitoes have reduced fitness, because at this point</p>

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<p>release programme more costly when GMO mosquitoes have reduced fitness, but is it perhaps a good thing that the GMO mosquitoes have a reduced fitness as this reduces risk of spreading uncontrolled (a concern identified in the survey in the previous presentation)?</p>	<p>you will have to do multiple releases, but it is a good thing that the GMO mosquitoes have reduced fitness because it reduces the risk of uncontrolled spread.</p>
<p>Presentation 2: Updates on ATSB. Michal Gez. Westham Co.</p>	
<p>John Invest: Do you have any data of % loss of bait stations when they are deployed not in a trial and just left in the village. I would suspect there is a loss rate?</p>	<p>We expect to conduct operational research to address this question.</p>
<p>Ole Skovmand: There are a lot of other beneficial insects in the hymenopteran group, predatory, parasitoids or polinators, have you measured impact on these?</p>	<p>We run a proof of concept in Mali in 2016–2017 in which we deployed ASB (without dinotefuran) including a food dye. All insects in the vicinity were collected with malaise traps. Results were published here: https://malariajournal.biomedcentral.com/articles/10.1186/s12936-021-03704-3].</p>
<p>Jeffrey Hii: How effective is ATSB in a 'lush' forested environment where exophilic/exophagic <i>Anopheles</i> and with many flowering (pollinating) plants?</p>	<p>You may notice, in our presentation, the variation in the results between the countries and some time between the clusters and it might be related to availability of natural sugar sources. Also, an early experiment that looked exactly into this point, presented some reduction in the efficacy in sugar environment yet, the effect was sufficient in all the experiments. Although we have done some botanical mapping with Oxford University (unpublished), we are aware of some knowledge gaps and we are still learning the new ATSB method, especially elements that are related to 'mosquitos' behaviour'.</p>
<p>John Invest: Does the ATSB still use a natural sugar bait and does this not put a limit on volume you could manufacture?</p>	<p>Yes, we use natural sugar bait. We are confident that the availability of this bait, for at least the first five to seven years of commercialization, will be sufficient to meet the demand for this product.</p>