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Collaboration Key to Management of Vector-Borne Diseases in Irrigation Schemes in Malawi

Key messages

- **Agricultural developments such as irrigation schemes are important for an agriculture-based economy such as Malawi for stimulating economic growth and rural development but they pose a threat to vector-borne disease (VBD) patterns.**
- **The Ministry of Health (MoH), Ministry of Agriculture (MoA) and other actors cannot continue to work in silos to address this cross-cutting issue which requires intersectoral action.**
- **Policies need to be formulated to provide guidance, accountability and clarity and ensure resources are channeled to initiatives to address the prevalence of VBDs in irrigation schemes.**
- **Support for research is vital as it provides insights into VBD transmission patterns that result from climatic, environmental and land-use changes.**
- **Clear mechanisms need to be formulated to ensure data sharing that will support learning and adaptation in responding to fast-evolving patterns of disease.**

Background

Globally, vector-borne diseases (VBDs) account for more than 17% of all infectious diseases, causing more than 700,000 deaths annually (1). In Malawi, a number of VBDs pose a serious threat to communities. For example, malaria is the leading cause of mortality and morbidity among children under 5 years with a prevalence of 35.4% in 2020 (2), and schistosomiasis is among the 20 causes of outpatient visits to health facilities in the country with between 40% and 50% of the population at risk of infection (3).

Climate change and other anthropogenic factors further exacerbate the impact of VBDs. For instance, the transmission season for malaria is expected to increase from 3-4 months to 7-9 months and to the highlands which historically were not malaria endemic areas (4).

Water resource management projects including irrigation schemes such as the Shire Valley Transformation Programme can impact vectors' ecology and transmission patterns. These burden healthcare systems, exacerbate social and health inequities, and reduce socioeconomic development, especially in areas with vulnerable populations. Vector control is therefore key to reducing the burden of VBDs, but it is often excluded in policies and plans for irrigation schemes.

Objectives and Methodology

This brief summarizes results of a policy analysis study that examined the context and gaps in Malawi's agricultural and health policies on VBD control and management in irrigation schemes. It also sought to outline the strengths, weaknesses, opportunities and threats to VBD control in the irrigation schemes. This was done through a desk review of Malawi's agriculture and health policy documents and key informant interviews (KII) with various stakeholders to identify policy options for addressing VBDs in irrigation schemes.

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Key Findings

Incorporation of VBD Control in Policy Documents

Currently, there are no comprehensive policies or guidelines in place for the control and management of VBDs within the Ministry of Agriculture (MoA). A total of 14 relevant documents analysed found that only 4 out of the 8 agricultural government policies, acts and strategies addressed VBD Control and management. Interestingly, as early as 1998, a report on Water Resources Development and Vector-Borne Diseases in Malawi called for the control of vector-borne diseases in water resource development projects in the country (5). Somehow, this recommendation got lost down the line as most recent documents do not have provision for VBDs including the 2022 National Irrigation Policy (6). Other recent documents that do not address VBDs are: the National Irrigation Acts (2022 and 2001), the Malawi National Agricultural Sector Wide Approach Environmental and Social Management Framework (7), the Concept Note on the Establishment and Management of Mega Farm Project by the Ministry of Agriculture (2021) (8), and Lilongwe Agriculture Development Division February 2016 Report (9)

The Agriculture Sector Wide Approach Support Project II (ASWAp-SP II) provides for a Pest Management Plan, which refers to the use of pesticides for both crop protection and against VBDs. The Shire Valley Transformation Programme Draft Updated Environmental and Social Impact Assessment (ESIA) 2022 (10) included a baseline characterisation of health issues in the study area and particularly water-related diseases, with mitigation measures for schistosomiasis, which was identified as acommon disease in irrigation schemes. The ESIA informed the Environmental and Social Management Plan (ESMP) for Phase 2, which described how the requirements in the ESIA will be implemented (11).

In the health sector, the Health Sector Strategic Plan III (12) and National Health Policy (2018)

(13) mention vermin and vector control as one of the priority areas. More specific policies such as the National Environmental Health Policy (14), Neglected Tropical Diseases (NTDs) Master Plan 2023 (15), and National Malaria Strategic Plan (2023-2030) (16) list strategies to achieve integrated vector management, but neglect to mention the roles of key partners. Moreover, the only standalone policies for specific vectors cited by key informants within the health sector was the Malaria Strategic Plan, which makes provisions for indoor residual spraying and long-lasting insecticide-treated nets. While WHO guidelines exist for the control of schistosomiasis and lymphatic filariasis, these guidelines have not been adapted to the specific context of Malawi.

Inclusion of VBD Control and Management in Budgets

The study found that VBD control and management was not included in the budget of irrigation schemes. However, opportunities for inclusion appear in cases where a feasibility study is carried out and the need for VBD control and management is identified. Under the MoH, lack of resources was identified as one of the challenges to implementing VBD control and management specifically

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by the district environmental health offices. This was especially the case when activities were required beyond the facility, a lack of allowances, long distances and poor road networks were reported as challenges.

Ownership of VBD Control and Management

There is a lack of ownership of VBD control and management from both the MoH and the MoA. The MoH reported that it was necessary for the MoA to initiate the process and involve them in addressing VBD control and management issues. The lack of a formalised mechanism for engagement such as taskforce or sub-TWG and collaboration between the two ministries was cited as the major hindering factor.

Input from Researchers into VBD Policies

Researchers working in the field of entomology play a crucial role in the monitoring and surveillance of vector populations. However, they cited that there were few opportunities available to engage with decision-makers and influence policies. Further, they observed that their research findings compete with other priorities to inform policy decisions.

Policy and Programme Recommendations

Collaboration and Stakeholder Engagement

TThere is a need for MoH as the overarching authority to initiate dialogue with the MoA and other stakeholders on the control and management of VBDs. Its role will extend towards coordinating actions, allocating responsibilities, monitoring activities, and evaluating results. Also, irrigation policies should not be made in isolation; rather their formulation should include input of the MoH. The development of policies will provide the guidance and the framework for the design and implementation of sound strategies for tackling VBDs in iriigation schemes. All stakeholders including supervisors at both MoH and MoA should be oriented on programme policies, guidelines, and supervision schedules related to VBD control, with a focus on compliance through indicator allocation and reporting emphasis. Additionally, there is a need to organise community awareness sessions to educate communities surrounding the irrigation schemes about VBD risks and their involvement in the control and management efforts.

Photo credit: Linga irrigation scheme nkhatabay

Resource Availability

Implementation of VBD control and management activities in irrigation schemes is only possible if there is availability of VBD prevention resources in irrigation schemes. This includes expert personnel, specialised equipment, and sound infrastructure. VBD control and management needs to be included in the budgets of irrigation schemes following feasibility studies. Adequate funding need to be allocated to Environmental Health Officers to allow them to conduct activities to control, manage and monitor VBD beyond routine health facility activities.

Technical Working Groups

There is a need to strengthen the existing, but currently inactive Vector Control Technical Working Group (TWG) by, among others, incorporating the MoA. Furthermore, it is important to establish suitable multi-sectoral platforms and frameworks for making decisions related to VBD control. One such measure could be the formation of a TWG solely dedicated to VBDs where experts from the MoH, MoA and other relevant actors convene regularly to monitor, deliberate and agree on joint actions/solutions for reducing VBD prevalence.

Involvement of Researchers

It is important for government ministries to regularly engage with researchers and involve them in policy formulation processes to ensure sound evidence-driven decision-making. This may involve creating platforms to facilitate co-production of knowledge to ensure research meets the entomological needs of the country, as well as ensure policymakers, funders and investors take ownership of the results generated. The generation of epidemiological data will also enable assessment of the public health value of new vector control interventions.

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