

# Multisectoral engagement- use of fish in mosquito larvae control - the Rwandan experience

6th Annual RBM Multi-Sectoral Working Group Meeting  
18-20 April 2024  
Lemigo Hotel, Kigali, Rwanda

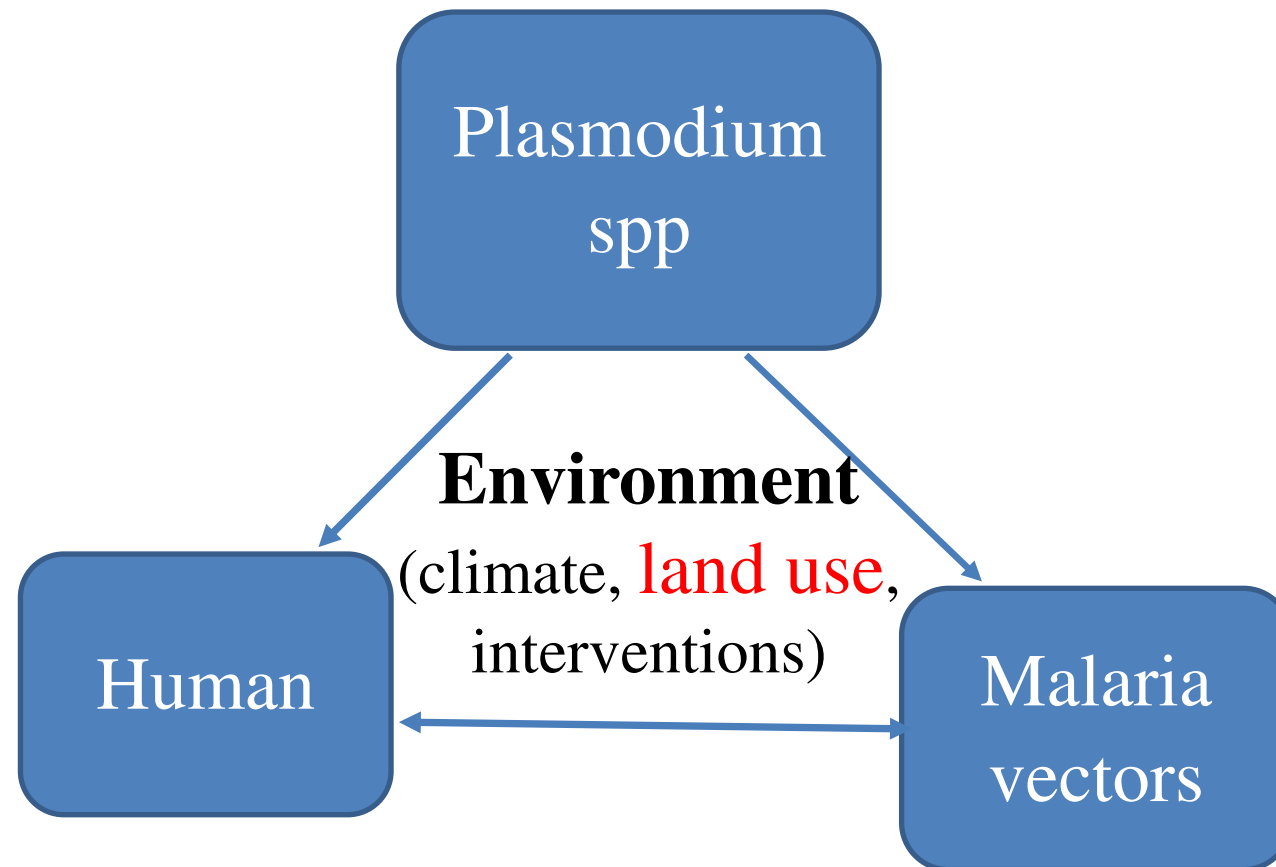
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**April 18<sup>th</sup>, 2024**

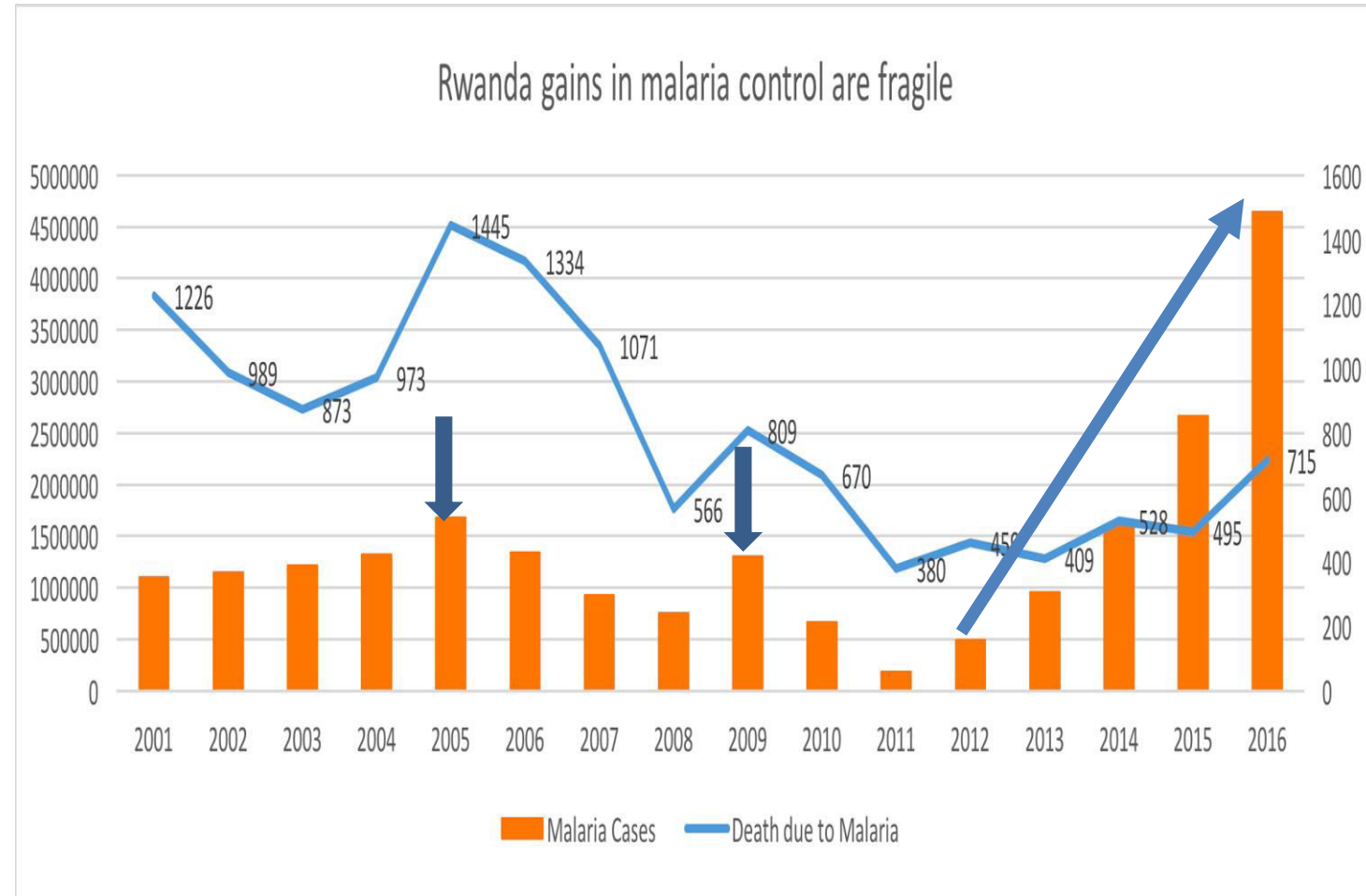
# The key determinants of malaria transmission

(human-Plasmodium-vector)



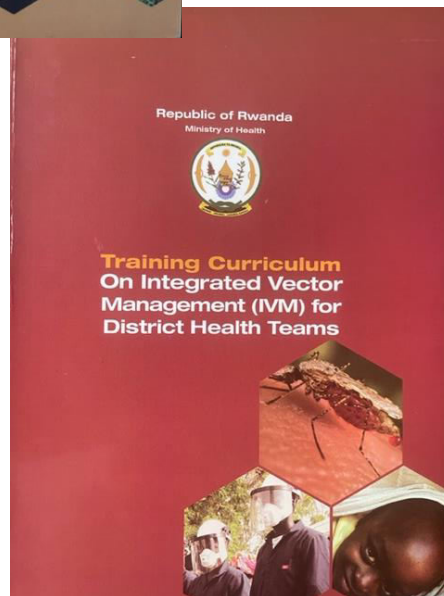
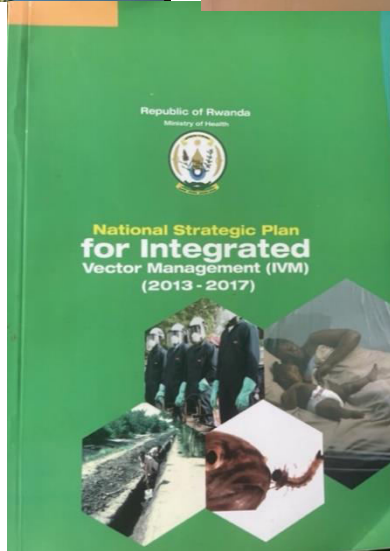
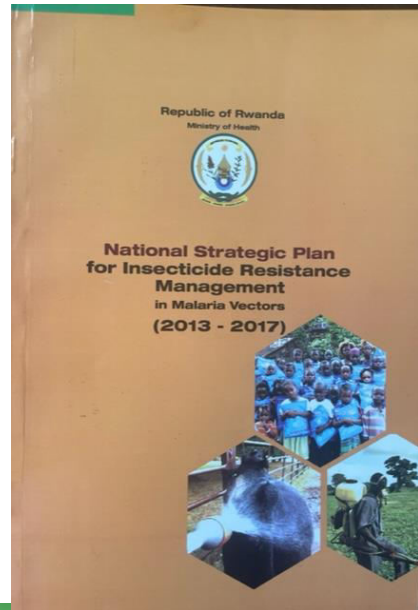
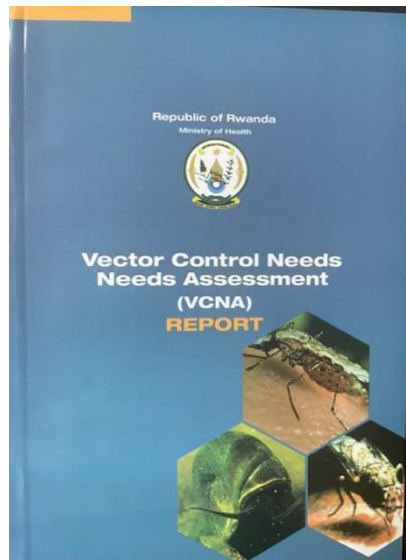
# Background on malaria patterns, Rwanda

- ✓ Malaria stills a major public health Problem in Rwanda
- ✓ The entire population at risks with perennial transmission
- ✓ Repetitive resurgences of malaria (2005, 2009, 2012-2015)
- ✓ Last resurgence was marked by an exponential increase of incidence, 36 to 409 cases per 1000 populations



# Malaria resurgence management

## Prior strategies



### 2013-2015

- IVM based strategies
- Insufficient financial resources and capacities
- Lack of implementation frameworks and functional inter-sectorial collaboration
- Not addressing the root causes.
- Malaria continue to increase

# Malaria resurgence management

## Contingency plan 2017-2020

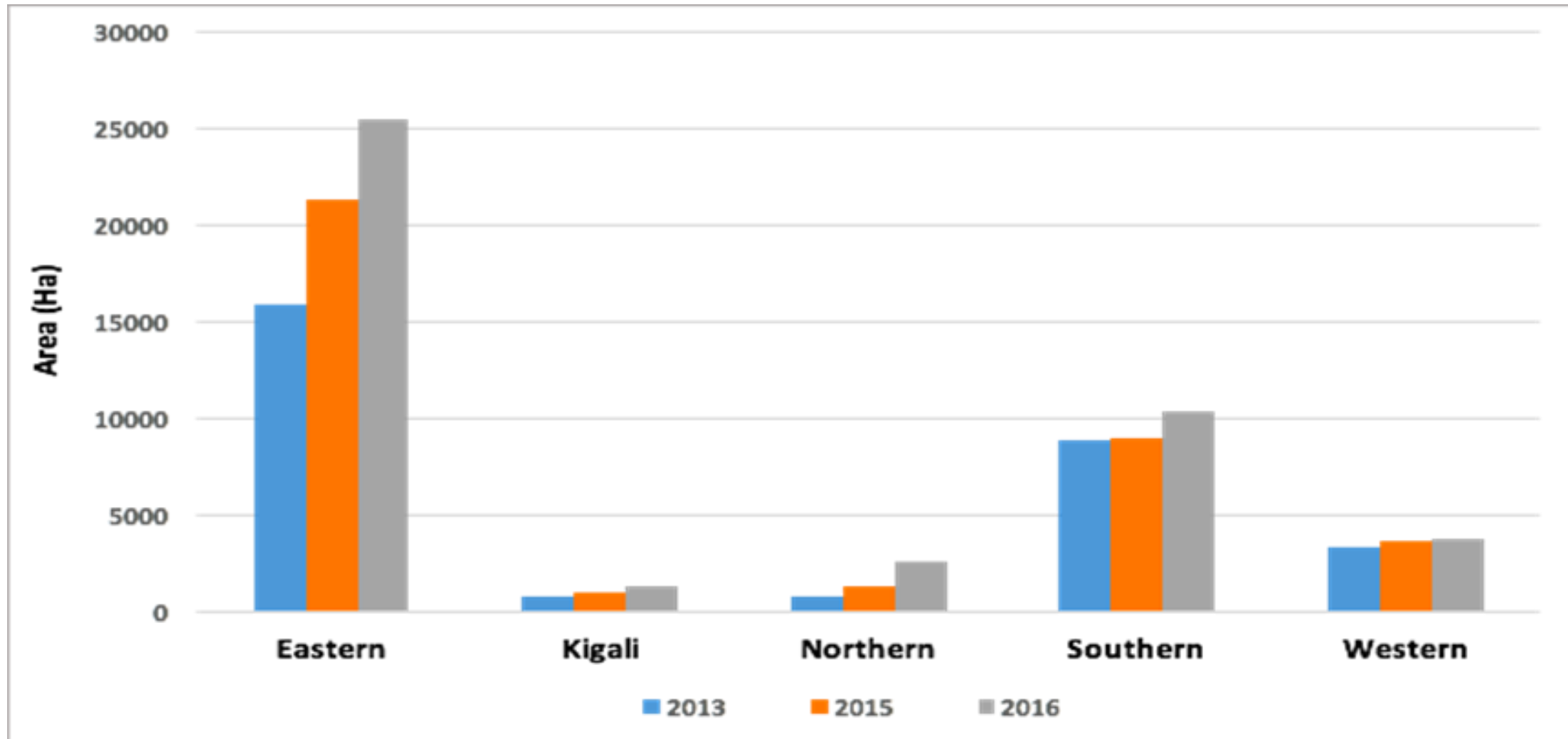
- The upsurge in malaria alerted all key stakeholders in 2015.
- A meeting of all stakeholders recognized the immediate actions.
- A review of the existing strategies and proposal of contingency interventions.
- Then Malaria Contingency Plan developed, validated by the Prime Minister office to guide the way forward.
- The strategy started to be implemented from January 2016 but malaria stilled increasing.
- The identified gaps reviewed and addressed in 2017

# Malaria resurgence management

## Validated key root causes

- Insufficient coverage of IRS and significant drop of effective LLINs coverage at community level.
- Resistance to pyrethroid insecticides used both in ITNs and IRS interventions
- Frequent climatic anomalies such as the increase in temperature and rainfalls,
- Resurgence of efficient indoor vectors such as *Anopheles gambiae* s.s.
- Increase in water bodies due to scaling up of development projects such as rice farming, water dams used for different purpose, pits from mining or construction projects etc...
- Lack of functional inter-sectorial collaboration

# Increase in irrigation areas in Rwanda, 2013-2016





# Goal of the revised Malaria Contingency Plan 2017-2020

Contribute to the reduction in mortality and morbidity of malaria in Rwanda by :

- ensuring that an appropriate and timely response is in place using evidence based interventions
- set up systems to support timely response to the malaria upsurge functional at the national, district, health facility and community levels in Rwanda and involving all stakeholders.

This plan consolidated the collective engagement of key malaria response stakeholders



# Proposed responses to malaria resurgence, in Rwanda

- Consistent and Effective full LLINs Coverage
- Ensure Consistent and Effective blanket IRS in High Malaria Endemic Districts
- Larval Source Management
  - Habitat modification and manipulation,
  - **Biological control using larvivorous fish** and other predators of mosquito larvae
  - Larviciding.
  - Multi sectorial interventions
- **Integration, Collaboration and Coordination with Key Stakeholders**
- Cross Border Collaboration

# Implementation of Revised MCP Interventions

## Fish Farming, Larviciding and Repellent plants

- **Proposed intervention: Fish Farming, Larviciding and Repellent plants**
- **Brief intervention description**
  - Biological control with larvivorous fish, other predators.
  - Intermittent cultivation and irrigation, etc....
  - Use of cooperatives platform for BSCC but also as main actors in MCP 2017-2020
- **Leading institution: Ministry in Charge of Agriculture, Rwanda Cooperative Agency**

# Progress in fish farming in Collaboration with MINAGRI

- FY 2017-2018, planning of production and restocking of 1 Million fingerlings (Tilapia)
- FY 2021-2022: 38,850,000 Tilapia fingerlings produced and stocked in different water bodies, mainly in water dams
- 2022-2023:
  - ✓ 40 Millions of fingerlings produced with stocked
  - ✓ 45,000 Mille Tons of fishes produced from aquaculture and capture fisheries
- New fish farming systems under exploration: Fish farming in **rice channels** and **Pen culture** in lakes and dams' shores



# Progress in fish farming: policy changes

- Revision of the Animal production and health law with its Ministerial Orders including one regulating the Aquaculture and Fisheries activities which is already approved by the Cabinet
- Regular meetings between
  - local authorities
  - fish farmers and fishing cooperatives
  - Police and Army marine
  - Senior management of the Ministry agriculture and Rwanda Agricultural Board;



**How to translate the problem into opportunities?**

**THANK YOU**