

# South-South learning exchange

## *Building networks for arbovirus preparedness*

### Executive summary

- Outbreaks of *Aedes*-borne arboviral diseases including dengue and chikungunya are increasing in frequency and scale across Africa, where there is limited knowledge and preparedness to respond to these global threats.
- RAFT organised two South – South learning visits bringing together vector control experts from Africa, Asia and Latin America to facilitate an exchange of knowledge and experience on managing arboviral diseases.
- These visits aimed to strengthen the capacity of African vector control programmes to anticipate emerging arboviral threats and enhance strategic preparedness through improved technical understanding and operational knowledge.
- Participants highlighted the need for multisectoral engagement, including increased professional and public awareness, to achieve effective and timely disease control.

### Bringing together arboviral experts

Against a backdrop of other emerging threats in Africa, arboviruses are a growing public health concern. A [2022 survey](#) from the World Health Organization revealed deficiencies in arbovirus outbreak preparedness, surveillance and control across Africa.

RAFT organised two South –South learning exchanges between Ministry of Health staff and scientists from African, Asian and Latin American arboviral control programmes. The visits, in [Thailand](#) and [Cameroon](#), facilitated opportunities to exchange technical insights, to discuss successes and barriers in the implementation of vector control initiatives, and to share expertise in advanced research, surveillance systems and response preparedness between countries.



### Participating countries

#### Cohort 1

1. Tanzania
2. Uganda
3. Burkina Faso
4. Nigeria
5. Côte d'Ivoire

Host country  
Thailand

#### Cohort 2

1. Cameroon
2. Burkina Faso
3. Tanzania
4. Côte d'Ivoire

Host country  
Cameroon  
Visiting countries  
Thailand, Mexico

### Lessons learned: shortfalls in awareness

Despite frequent outbreaks, there remains a lack of accurate data on arboviral disease in Africa. Significant shortcomings also exist in public awareness and knowledge of arbovirus vector bioecology. Participants concluded that:

- Robust surveillance systems are needed to strengthen the capacity of national programmes to identify emerging arboviral threats. For this, training opportunities in laboratory, diagnostic and clinical management are essential to raise awareness amongst health providers and enhance reporting.
- Co-ordination and collaboration between routine surveillance systems and entomological surveys could be bolstered to ensure effective dissemination of all available information to policymakers for translation of research into practice.
- Engagement with social and political thought leaders, municipal authorities and community leaders needs to be a top priority for controlling *Aedes* mosquitoes and preventing disease.

## Context appropriate vector control tools: Sub-Saharan Africa

Control methods relevant for *Aedes* management in sub-Saharan Africa discussed during group sessions:

### Environmental management

- Effective waste management models to remove or destroy larval breeding sites e.g. clean-up campaigns, tyre recycling

### Community participation

- Educating and engaging municipal leaders and community volunteers in vector surveillance and environmental management

### Entomological surveillance

- Ovitrap made from recycled bottles to trap mosquitoes and monitor the presence, distribution and density of *Aedes* vectors

### *Aedes* control interventions\*

- Integrated vector management
- Chemical and biological agents suitable for domestic water storage containers: eg. larvivorous fish
- Space spraying during outbreaks

\**Aedes* control interventions must be selected based on local context as evidence of effectiveness is limited, and no single intervention is suitable for all ecological or sociocultural settings.

## Recommendations: Strengthening arbovirus preparedness

Action is needed from participating countries to improve arboviral disease knowledge and research uptake. Real-time arbovirus surveillance requires development of guidelines for deployment of surveillance tools, standard operating procedures and field survey methods. Programmes should aim to integrate epidemiological and entomological data to enable data-driven decision-making, as knowledge of populations at risk, vector diversity and ecology enables local adaptation of vector control methods.

To learn from the successes and strategies used to overcome barriers in other countries, a pool of case studies should be established presenting models of effective vector control, including examples of engagement of community volunteers, stakeholder involvement and public health advocacy. Controlled trials to demonstrate cost-effectiveness at scale are also needed.



## What's next?

Further collaborative actions for capacity sharing were identified:

- Use knowledge gained to review and strengthen national plans to enhance arboviral preparedness and disease control at country-level.
- Establish an inter-regional networking platform for sharing regular updates on arbovirus surveillance, outbreak control and research between South-South countries
- Raise the profile of *Aedes*-borne diseases among national stakeholders and among the public
  - e.g. RAFT TechTalk webinar series; update medical curricula, CPD courses and experience sharing platforms for health staff; school and celebrity campaigns for public awareness
- Collaborative research to address priority areas, such as:
  - Methods to harmonise surveillance for urban vectors, including *Aedes aegypti* and *Anopheles stephensi*
  - Cost-effectiveness of integrating malaria and arbovirus surveillance (both epidemiological and entomological)
  - Characterising the effect of past-exposure and cross-reactivity with other arboviruses in disease severity.