

## CLIMADE AFRICA WORKING GROUP MEETING MINUTES – MEETING 2

---

**Host:** Centre for Epidemic Response and Innovation (CERI)

**Date:** February 27, 2024

**Time:** 12:00 – 13:00 p.m. (SAST)

**Facilitators:** Dr Houriiyah Tegally

---

**Attendance/ No. of Participants:** 63

**Start time:** 12:00 p.m. (SAST)

### **Purpose of the meeting**

Preponderance of vectors and increased activity of some mosquito-borne viruses in Nigeria

### **Agenda Items**

1. Welcome
2. Presentation by Professor Bernard Onoja titled: Preponderance of vectors and increased activity of some mosquito-borne viruses in Nigeria.
3. Discussion and feedback

### **Discussion points and questions**

- Welcome and brief introduction by Dr Houriiyah Tegally
- Professor Bernard Onoja's presentation on the Preponderance of vectors and increased activity of some mosquito-borne viruses in Nigeria highlighted on:
  - o Ecological zones and the impact of climate change
  - o Population density and molecular evidence of vectors
  - o Epidemiology of mosquito-borne diseases in the region
  - o Recurring outbreaks
  - o Insight into current activity
- Mosquitoes are commonly found in Nigeria, there are 112 genera and > 3500 known species.
- Causes of Desertification

- Climate variability
- Extensive Cultivation
- Cultivation of marginal lands
- Bush burning
- Fuel extraction.
- Faulty irrigation systems
- Overgrazing
- Nigeria is a hotspot for emerging diseases.
- Climate change allows for different dynamics for vector-borne diseases.
- Control methods.
- Flooding in Nigeria with an increase in farmlands has caused the spread of mosquito larvae to be washed onto banks.
- Early years of arbovirus research in Nigeria
- First isolation of chikungunya virus in 1963 in mosquitoes
- First isolation of Rift Valley Fever in Nigeria.
- Diurnal temperatures for *Aedes* species in April 2013 – Jun 2014 in rainforest regions in Nigeria with an average temperature of 30.2 °C.
- Vector population and sampling in Nigeria.
- Possible regions for an increase in vector populations.
- *Ae. albopictus* ability to cross niches.
- Molecular evidence of vector species
- Phylogenetic analysis of *Ae. aegypti* and *Ae. albopictus*.
- Epidemiology of some mosquito-borne diseases
- Guinea savannahs – 20.5% seropositivity for dengue which shows DENV circulation in the region.
- DENV serotypes among *Aedes* mosquitoes in Nigeria
- CHIKV detection in Lagos
- CHIKV and Yellow Fever have been found in mosquito pools.
- Changing ecotypes of DENV -2 serotype in Nigeria and the emergence of cosmopolitan and Asian lineage.
- Outbreaks of recurring arboviruses
- Rift Valley Fever in livestock.
- CHIKV in 2019-2022 – showed acute infections during the rainy season.
- Zika virus seroprevalence which showed previous exposure.

- Whole Genome Sequencing (WGS) unravels cryptic circulation of divergent DENV lineages.
- Ban on plastic pollution involved in increased vector populations and spread.
- PCR is required to prevent cross-reactivity for arboviruses.
- There is limited reporting for arboviruses due to no national reporting in Nigeria.
- There is an opportunity to look for socio-economical determinants.
- Request for collaboration within Nigeria.
- Ongoing problem with undifferentiated febrile illness.
- How are outbreaks identified if there is a lack of testing and symptomatic treatment?

### **Adjournment and Closing points.**

1. The meeting was adjourned at 13:01 p.m. (SAST).
2. Climade meeting will be held every last Tuesday of the month.

### **Next Meeting**

March 26<sup>th</sup>, 2024, at 12:00 p.m. (SAST).

**Submitted by:** Yajna Ramphal

**Approved By:** Monika Moir