

# EMERGING INFECTIOUS DISEASE SURVEILLANCE AND RESEARCH IN KENYA

OBSERVING BIOSAFETY & BIOSECURITY & CONSIDERING THE DUAL  
USE DILEMMA

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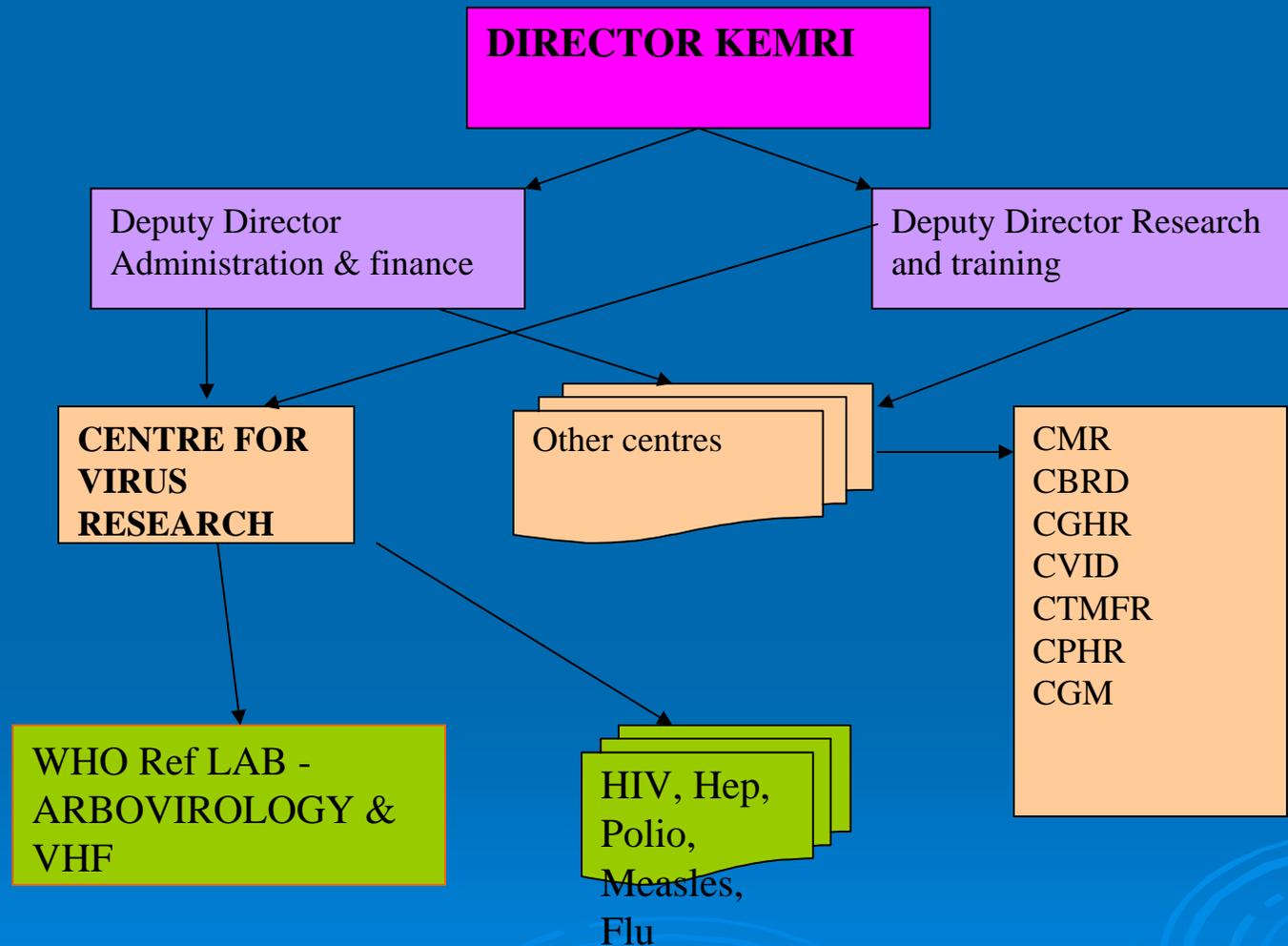
REGIONAL BIOSECURITY WORKSHOP  
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# BIOMEDICAL RESEARCH IN KENYA

- Biomedical research activities in Kenya are hosted by KEMRI and the science and medical faculties of the National universities.
- The Kenya Medical Research Institute (KEMRI) is a state corporation, established under the Science and Technology (Amendment Act of 1979).
- It is one of the leading health research institutions in the region.
- The Institute comprises of 10 centers constituted based on disease problems and geographic locations.

# KEMRI ORGANISATIONAL CHART



# ROLE OF KEMRI IN SURVEILLANCE AND RESEARCH

- KEMRI houses a WHO collaborating centre for Arbovirus reference and research. Mandated;
- To provide lab support to Kenya MOH during arbovirus outbreaks
- To undertake research on arboviruses
- To carry out arbovirus surveillance
- To assist in training on laboratory techniques for virus isolation, characterization, diagnosis, biology and research.

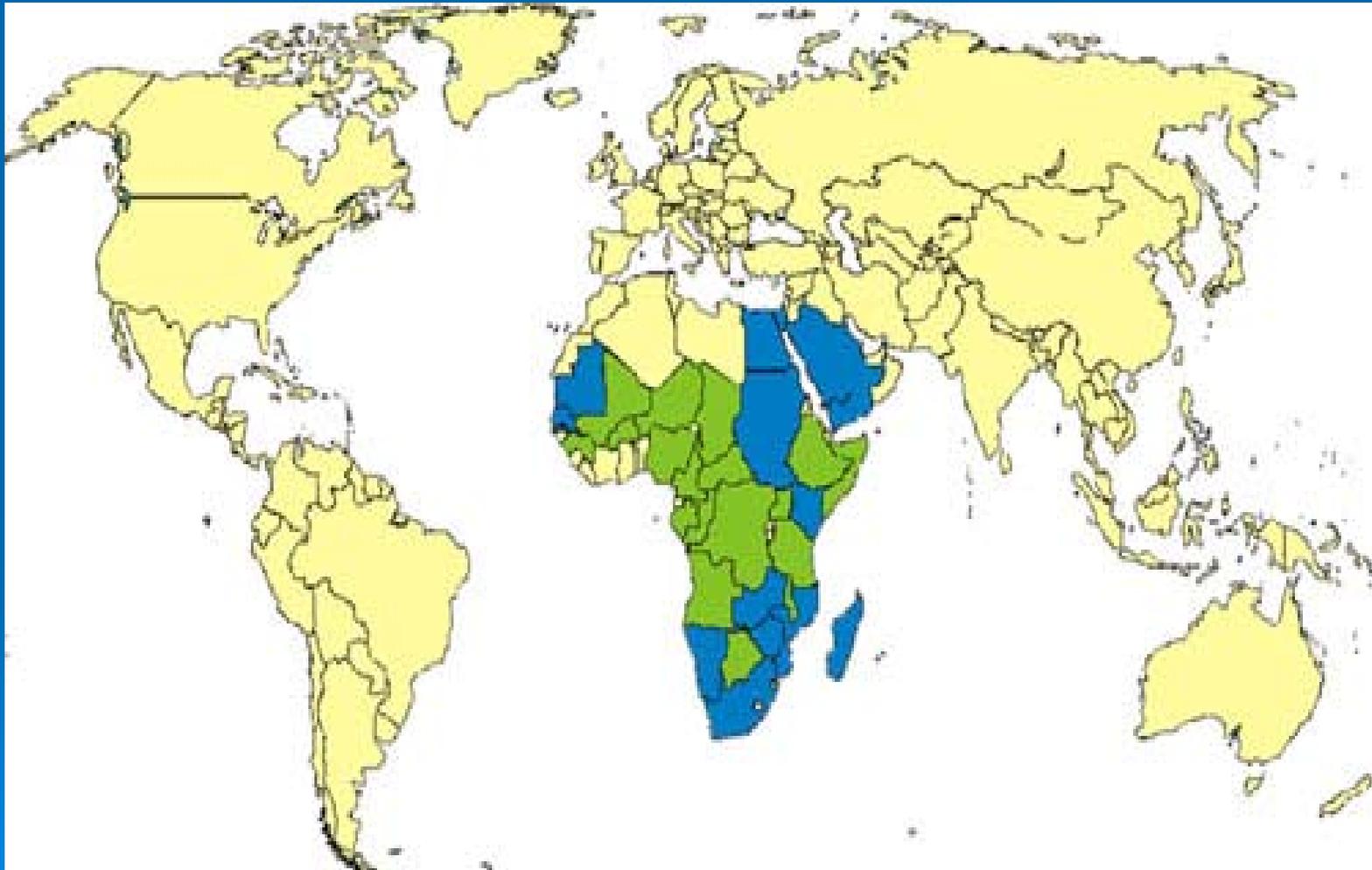
# WHO Ref Lab “Terms of Reference”

- **To identify and characterize arbovirus and hemorrhagic fever virus strains.**
- To perform serological diagnosis of arbovirus and hemorrhagic fever diseases
- To investigate the epidemiology, diagnosis pathogenesis and treatment of arboviruses and hemorrhagic fevers pathogenic for humans.
- **To provide limited quantities of reference reagents to collaborating laboratories for the diagnosis of arboviruses and hemorrhagic fevers.**
- **To maintain prototype and reference strains of arboviruses and hemorrhagic fevers viruses.**
- **To actively participate in efforts to recognize and investigate unusual disease occurrences and outbreaks which may appear.**
- To collect and disseminate epidemiological and technical information on arboviruses and hemorrhagic fevers.

# OCCURRENCE OF EID IN KENYA

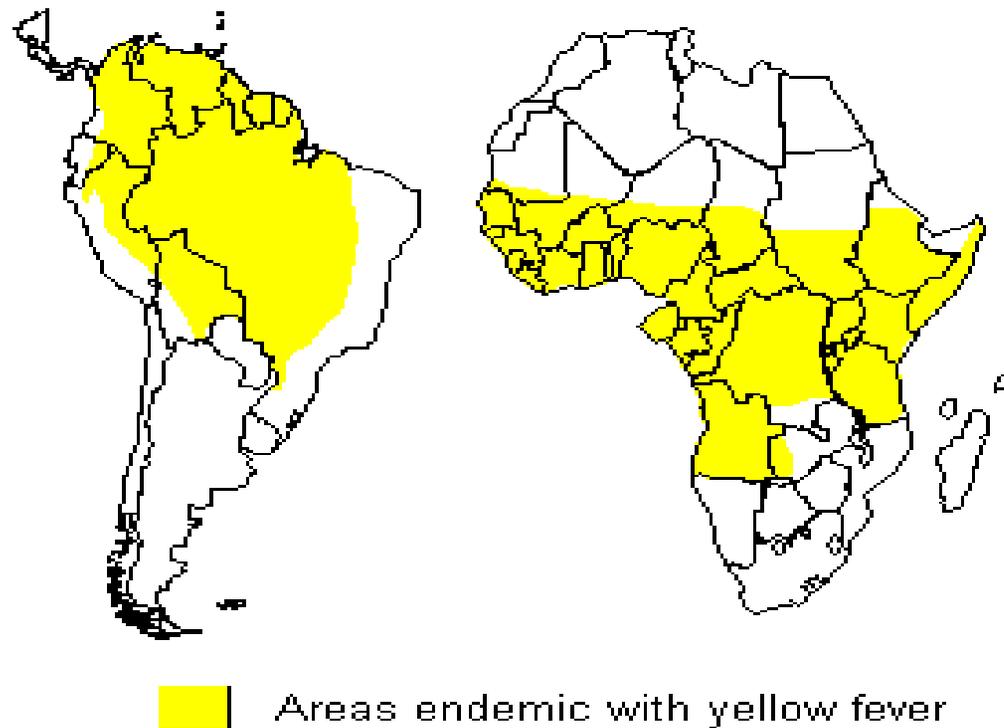
- East and Central Africa is considered a hot zone for EID including Marburg, Ebola, CCHF, YF, RVF, CHIK, and Dengue.
- Is home to other endemic arboviruses have caused outbreaks that have spread beyond their normal borders e.g, WN, CHIK, RVF
- Marburg cases have occurred within the Kenya borders and Ebola has occurred repeatedly in neighbouring Uganda and DR Congo.
- This justifies surveillance activities in the region to provide early identification and recognition of arboviruses and HFV circulation prior to potential epidemics

## Rift Valley Fever Distribution Map

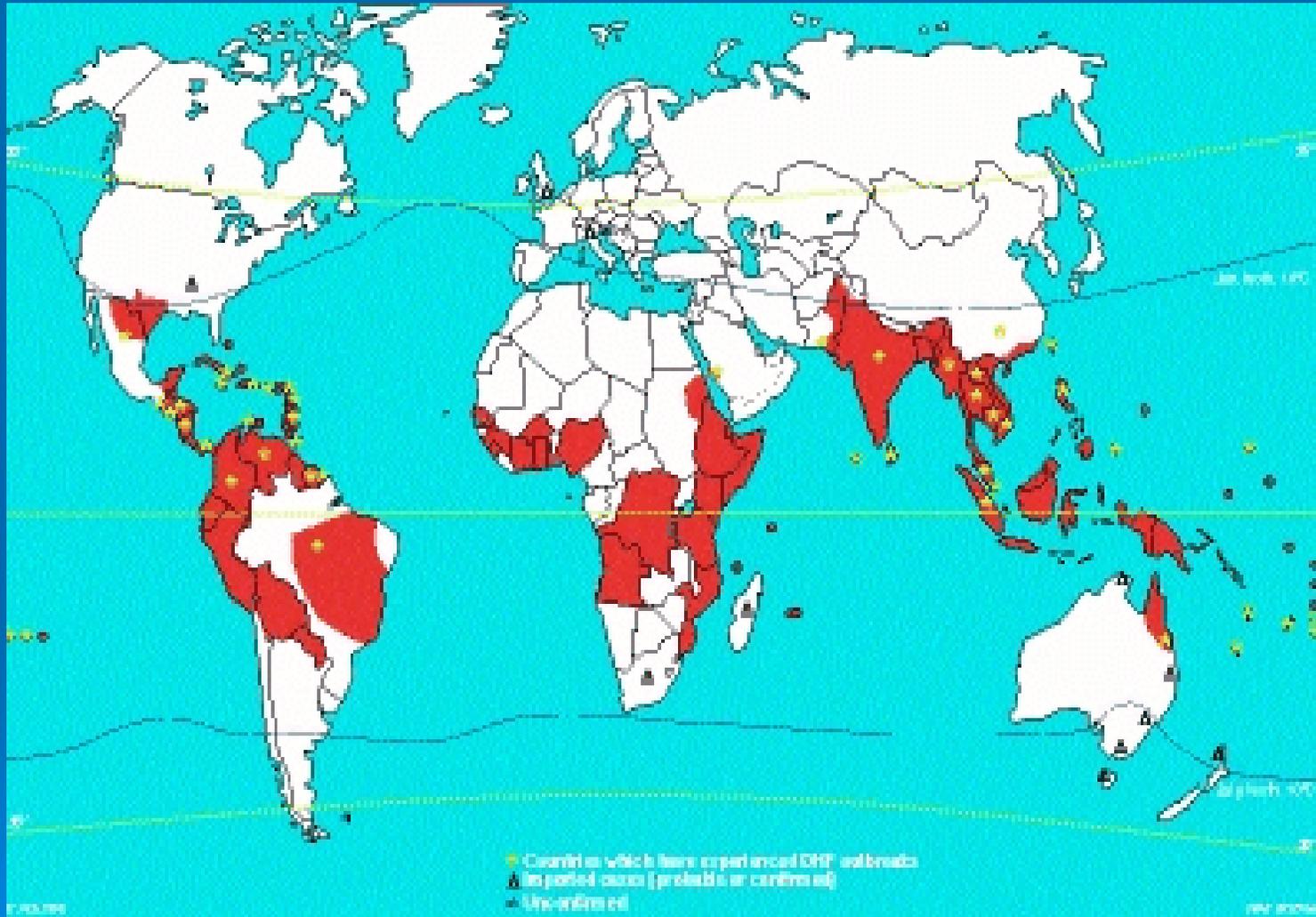


# Yellow fever distribution map

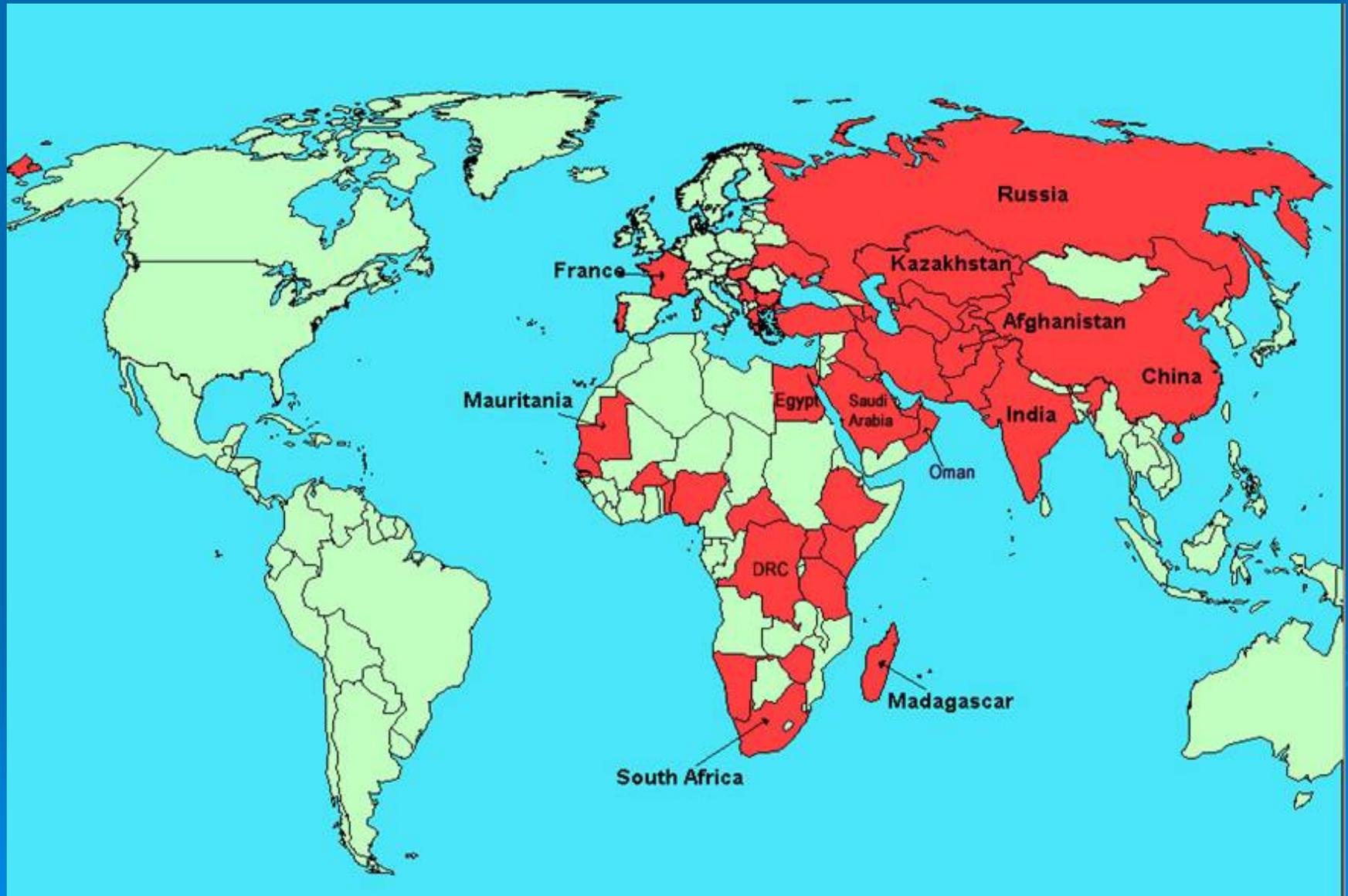
Global Distribution of  
Yellow Fever, 1996



# DISTRIBUTION OF DENGUE



# Distribution of CCHF virus



## SOME OF THE CURRENT ACTIVITIES OF LAB

- Outbreak response e.g CHIK, RVF, YF, DEN etc in Kenya, Sudan, Somalia, Comoros
- Entomologic arbovirus surveillance
- Monitoring arbovirus activity through febrile illness surveillance
- Vector competence studies for CHIK, Dengue, YF, WN etc
- Development of testing assays for ONN and RVF.
- Maintaining logs of virus stocks of isolates from surveillance activities, stored for diagnostic purposes and future studies

## KEMRI IRB AND HSAC

- The institute research guidelines are available with set requirements
- All research protocols must be approved by the Scientific Steering Committee (SSC) which vet to ensure adherence to set regulations.
- All SSC approved protocols must be approved by the ethical review committee (ERC) before permission is granted.
- The Health and safety advisory management committee (HSEAC) is in the process of developing SOPs to be part of the IRB

## BIOSAFETY MEASURES

- KEMRI has created a position of “Institute Biosafety officer” (IBO)
- Constituted a Health, Safety and Environment Advisory committee (HSEAC) with subcommittees which include Biosafety and Biosecurity subcommittee
- HSEAC role is to advise the office of the Director of the Institute, through the IBO on matters of biosafety and biosecurity
- The committee will soon start to take all research protocols through an approval process.

# KEMRI BIOSAFETY POLICY STATEMENT

- To ensure that activities of potentially biologically hazardous nature are safely conducted, KEMRI adopts this Biosafety Policy.

## THAT

- KEMRI requires that all Principal Investigators/Faculty Members assume the primary administrative responsibility for the proper acquisition, storing and disposal of biological/biohazardous material in research and teaching.
- All individuals working with these materials must adhere to the procedures and rules for the acquisition, use, handling, storage, transportation and disposal of these materials.
- No research or teaching involving biohazardous materials may be undertaken, until a biosafety permit has been obtained by the Principal Investigator/Faculty Member. All activities require compliance with KEMRI Biosafety Guidelines listed in the biosafety manual.
- To protect faculty, staff, and students, the public at large, animals, and the environment, members of the Biosafety Committee are authorized to review and monitor all research and teaching involving biohazardous materials. Failure to comply with this policy will result in a review by the Biosafety Committee and may result in disciplinary action.

# BIOSAFETY AND BIOSECURITY

- **The importance of biosecurity and biosafety with respect to handling and storing highly infectious agents cannot be overemphasised.**
- **The need to avoid accidental laboratory-acquired infections is even greater, the accidental release into the community must be avoided at all costs.**
- **The potential for these agents to be used for harmful purposes by those who wish us (or others) ill through bioterrorism is now very real.**
- **And this work shop provides the opportunity to recognised and deal with the dual-use dilemma, that - while we wish to work with these agents, we should be mindful that they can be miss-used. Hence;**
  - **Need to ensure proper levels of secure biocontainment.**
  - **Need to bring others to be are aware of this dilemma.**



THANK YOU

