

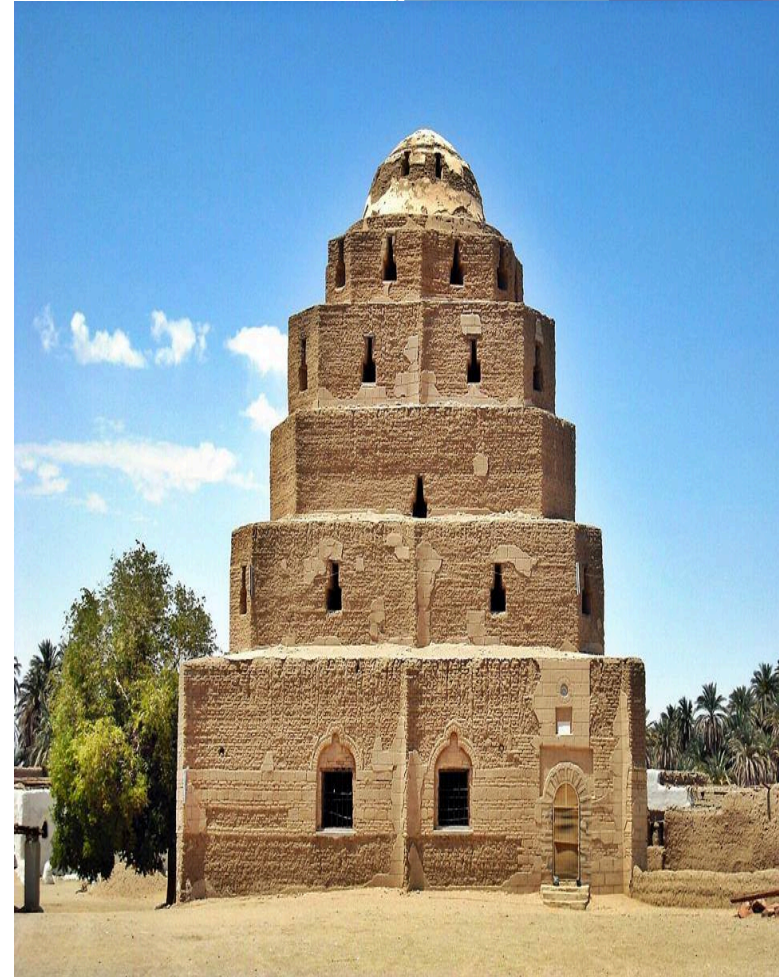
# Implementation of the IHR (2005) in the Aviation Sector

## **Presenter**

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National Quarantines & IHR Team

# Introduction

- ▶ Sudan committed to plying its part in global effort for control and prevention of PHIC, as one of the WHO Stats parties which required to implement IHR2005.
- ▶ In 2009 Sudan formulated National Technically Committee to assess the required existing core capacity and the report was finalized on 2010.
- ▶ In 2012 the plan of action was endorsed, the series steps of implementation of IHR 2005 in Sudan was started since the plan get in to force and with the remarkable ongoing efforts in place.





# Introduction

Health Quarantine Directorate is localized in strategic position within the Directorate of Health Emergencies and Epidemic Control HEEC. The function was set to safeguard the country from the potential risks of epidemics and public health threats which can come with passengers, goods, cargo and animals via seaports, ground ports and airport.

It has been gaining steadily increased attention because of business and trade globalization besides the enormous development witnessed in transportation and communication technologies which directly resulted in expanded transportation through airports, seaports and crossing borders at a rising speed

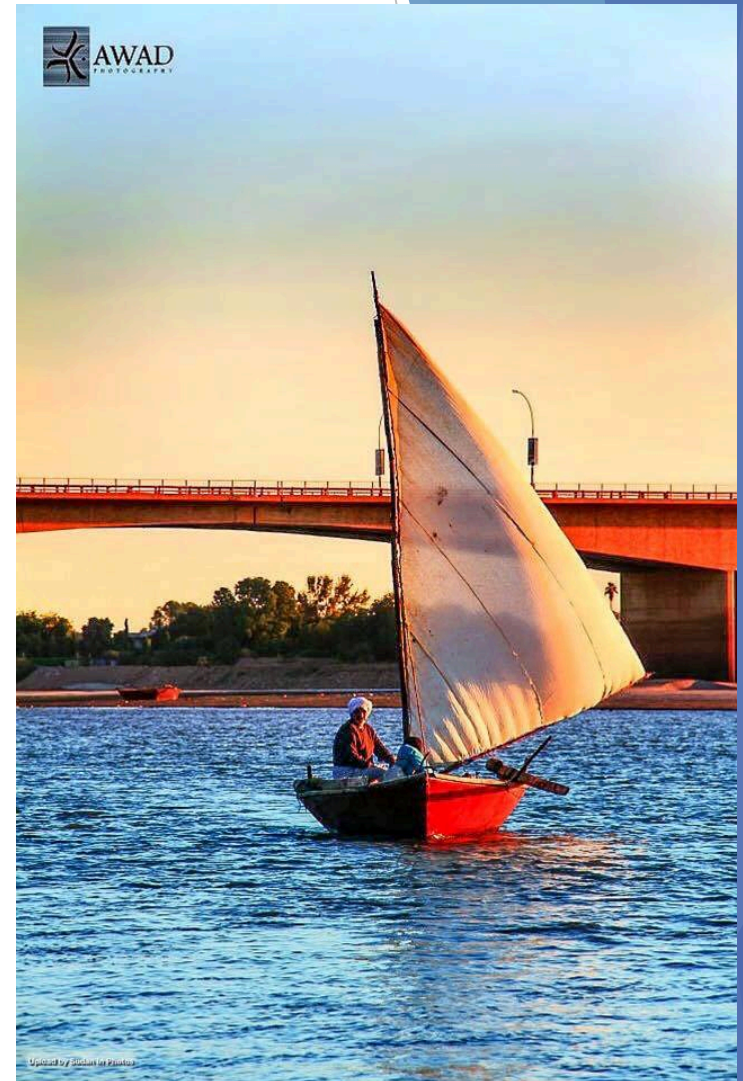
Sudan is one of the first regional countries to recognise this importance and gave it a very high level of attention, due to Sudan demographical and geographical position.



This has made it easy for harmful organisms to be conveyed during the incubation period from countries to others via passengers, goods and containers. Thus, it is somehow difficult to detect events involve risk on the public health and thereafter undertake the appropriate preventive procedures to control them. Considering the increase in commercial and tourism movement occurring in our country over the last couple of years which is inevitably associated with negative health consequences, it is necessary to cope with this fast development through upgrading the operational system to be more effective and rapid besides adoption of the appropriate advanced technology and maintaining constructive collaboration in terms of information sharing with other countries regionally and internationally.

# Roles of Health Quarantine

1. Monitoring and responding to public health events (biological, radiological, chemical) that may be transmitted by people, means of transport, postal parcels, goods, food.
2. Collaboration and coordination with WHO and other stockholders at different government and NGOs to strengthen the health quarantine procedures and prepare the best and effective containment procedures of epidemics and public health threats at points of entry
3. Vaccination or re-vaccination of passengers and staff when necessary.





4. Ensure the completeness of health measures for travelers.

5. Ensure the ports and 400 meters around it free from mosquitoes and others diseases vectors.

6. Health supervision of the port environment and facilities used by travelers to make sure and keeping it free from sources of infection and contamination (restaurants, toilets, meals of airplanes).



# Functional Types of Surveillance in Sudan

## Sentinel-Based Surveillance

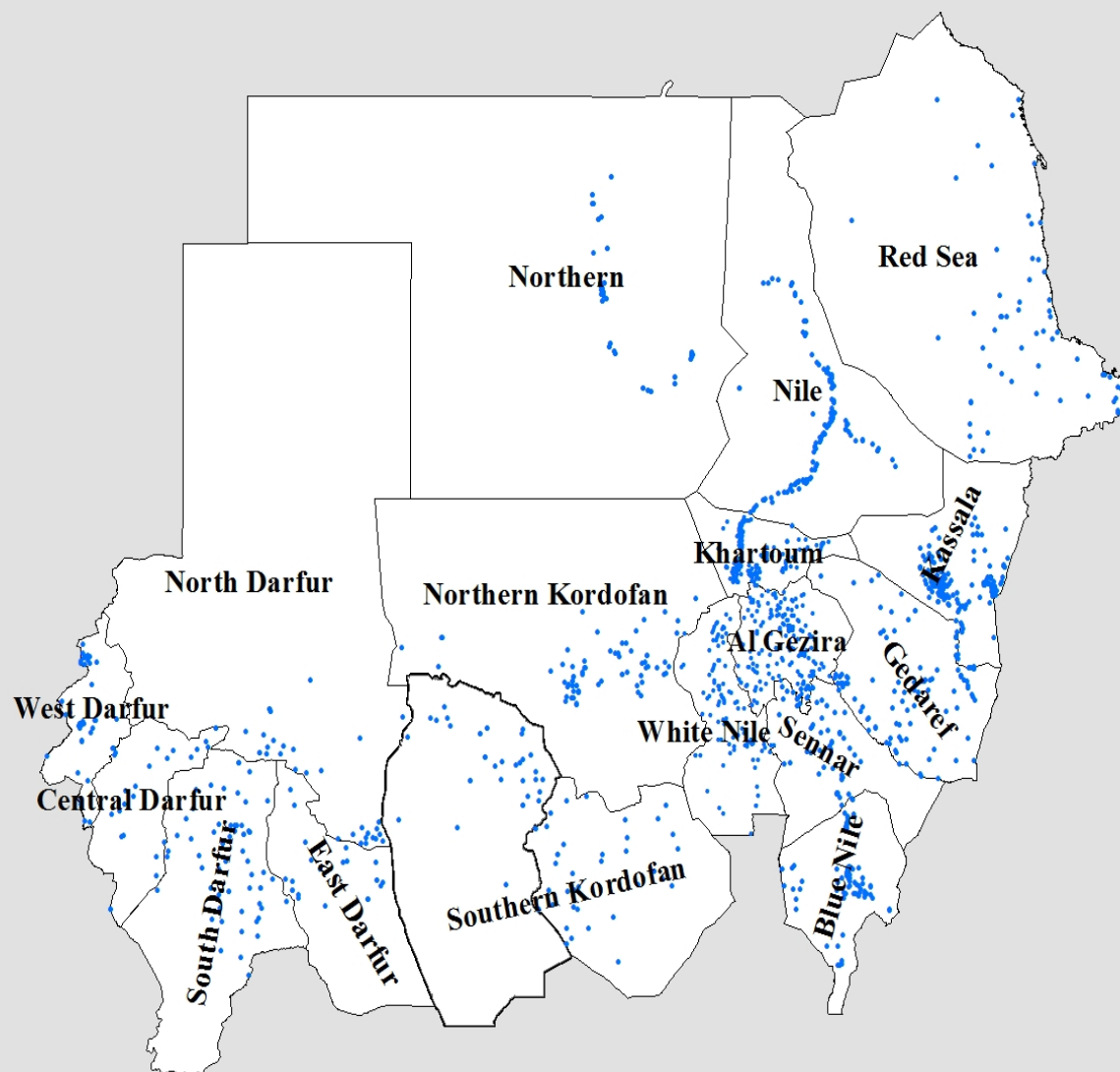
Covers 1563 Units out of 5824 total health facilities (26.8%) .

- Covers the communicable diseases of epidemical nature with a list of 25 infectious diseases.
- Case definition developed of each diseases (suspect, probable and confirmed)
- Each disease have unique reporting and investigation form





# Sudan sentinel sites map



## Legend

- sentinel site
- sudan Boundary





# Functional Types of Surveillance in Sudan

- 25 Diseases under surveillance are divided into two categories: List A and List B.
  - List A is the diseases for immediate notification within 24 hours of diagnosis .
  - List A & B are reported on weekly basis.
- The daily Zero Reporting is applied during the outbreaks and extended to cover all health facilities.
- The reports include data on two groups of patient according to age; “under 5 years” and “5 years and above”, with data on morbidity and mortality.



# Notifiable Diseases

## Group A - (within 24 Hours)

- Acute watery diarrhea
- Acute flaccid paralysis
- Epidemic Typhus fever.
- Yellow fever
- Hemorrhagic fever.
- Neonatal tetanus.
- Epidemic plague.
- SARS
- Epidemic Influenza .
- Meningitis
- Measles
- \*Guinea Worm Disease.

## Group B (Periodic)

- Malaria
- Diphtheria
- Whooping cough.
- Tuberculosis
- Typhoid fever.
- Hepatitis A&E
- Anthrax.
- Rabies.
- Food poisoning.
- Dysentery.
- Relapsing fever.
- Adult tetanus.
- Brucellosis.

# Functional Types of Surveillance in Sudan

## Community Based Surveillance :

- The system was started as a Piloting in January 2016 in two states ( Red Sea & White Nile ).
- Total number of selected villages were 80, which were uncovered with any health facilities.
- In July the system performance was evaluated.
- In 25 October 2016 the first meeting of the guidelines and SOPs Endorsement.
- In the end of this month the final endorsement meeting will be held .
- The system will be implemented in 2017 to cover all Sudan.





Data collected based on the following indicators:

Any incidence or mortalities of epidemiological syndromes:-

- ▶ Acute Diarrheal Syndrome
- ▶ Acute hemorrhagic fever syndrome
- ▶ Acute Jaundice Syndrome
- ▶ Acute Neurological Syndrome
- ▶ Acute Respiratory Syndrome

Any disaster in the community:- Floods, Drought, Earthquake  
Displacement, Conflicts.

Incidence related events:

Other diseases that spread in the form of foci spatially or  
Temporally, after social or formal events.

- ▶ Specific diseases appear in specific population groups in the village (sex, race, age group-specific)
- ▶ Unexplained deaths .



- ▶ Rumours about the existence of epidemics in the village or neighbouring places, especially when repeated.
- ▶ Ratios of unusual absences from the workplace, schools or Religious and social activities

### General indicators for the environment:

- ▶ The increase of animal mortality (wild birds, poultry, cattle)
- ▶ A general increase of the density of disease vectors or general increase the breeding places.
- ▶ unavailability of drinking water, and quality, and food safety.
- ▶ poor solid and liquid waste disposal management .



# Event-Based and Point of Entry Surveillance

In November 2016; Sudan finished the last draft of EBS and on the 20<sup>th</sup> November 2016 the guidelines and SOPs endorsement meeting will take place.

- The system will be established in country wide in 2017 by piloting in several states and later in the next year it will be established.





# Sources of Events-Based Surveillance

## At Health Domain Level

- ▶ Health Units: Represented in (Health Centers - Hospitals - District Hospitals - Dressing Rooms - Primary Health Care - Clinics).
- ▶ Organizations and Health Professionals: Include (Community Health Workers - Midwives & Health Visitors - Alternative Medicine Practitioners - Laboratories - Ambulance Service - Environmental Health Officers - Quarantines).



# Point-of-Entry Surveillance

- ▶ The entry points determined in with IHR to detect events through the inspection operations or other procedures taken at international ports & airports for dealing with incoming ships and planes (extraction of Vessel Sanitation Certificates, Marine Health Declaration, and Plane General Declaration).
- ▶ Necessity of discovering the cases & communicable disease infections among travelers coming up from disease-affected countries, through filling of quarantine forms; and also events resulting from import of biologically & atomic radiation contaminated commodities.
- ▶ Point of Entry Guidelines and SOPs are now finished awaiting endorsement
- ▶ More than 15 point of entry were identified through all borders, 5 of which under the IHR.



# Characteristics:

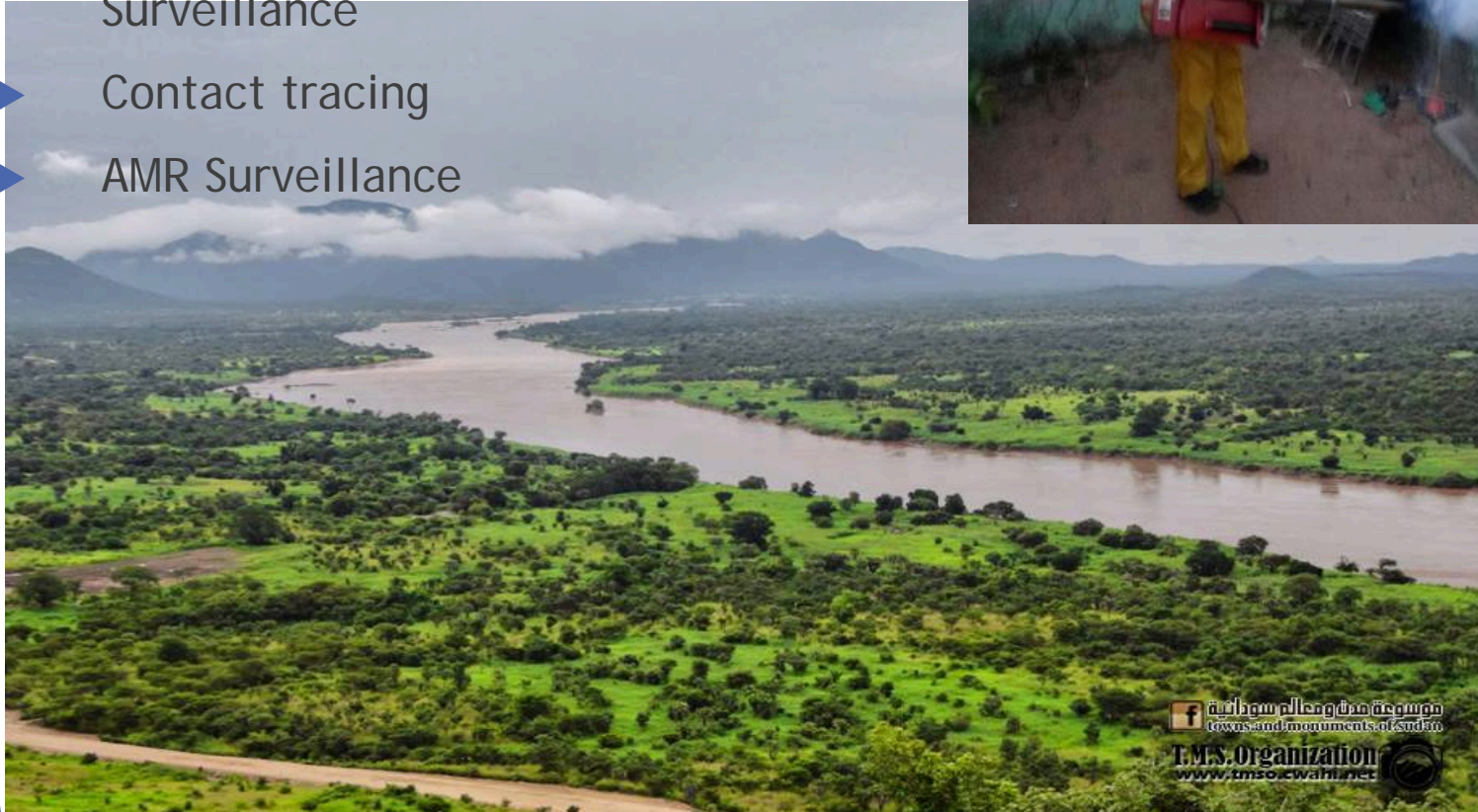
- ▶ Sensitivity: It is a must for the source recognize or report all important events and have susceptibility of recognizing them. Sensitivity of the system is measured by number of the confirmed events recognized by the System, after Evaluation, and also degree of response thereto.
- ▶ Continuance: Modality of the System continuance with lack of impact on health programs, taking in consideration the total cost of the system as with regard to monies, human resource, and impact of the System on other programs.





# Other but related activities..

- ▶ EWARS
- ▶ IDSR
- ▶ Electronic-Base Surveillance/Real-Time Surveillance
- ▶ Contact tracing
- ▶ AMR Surveillance



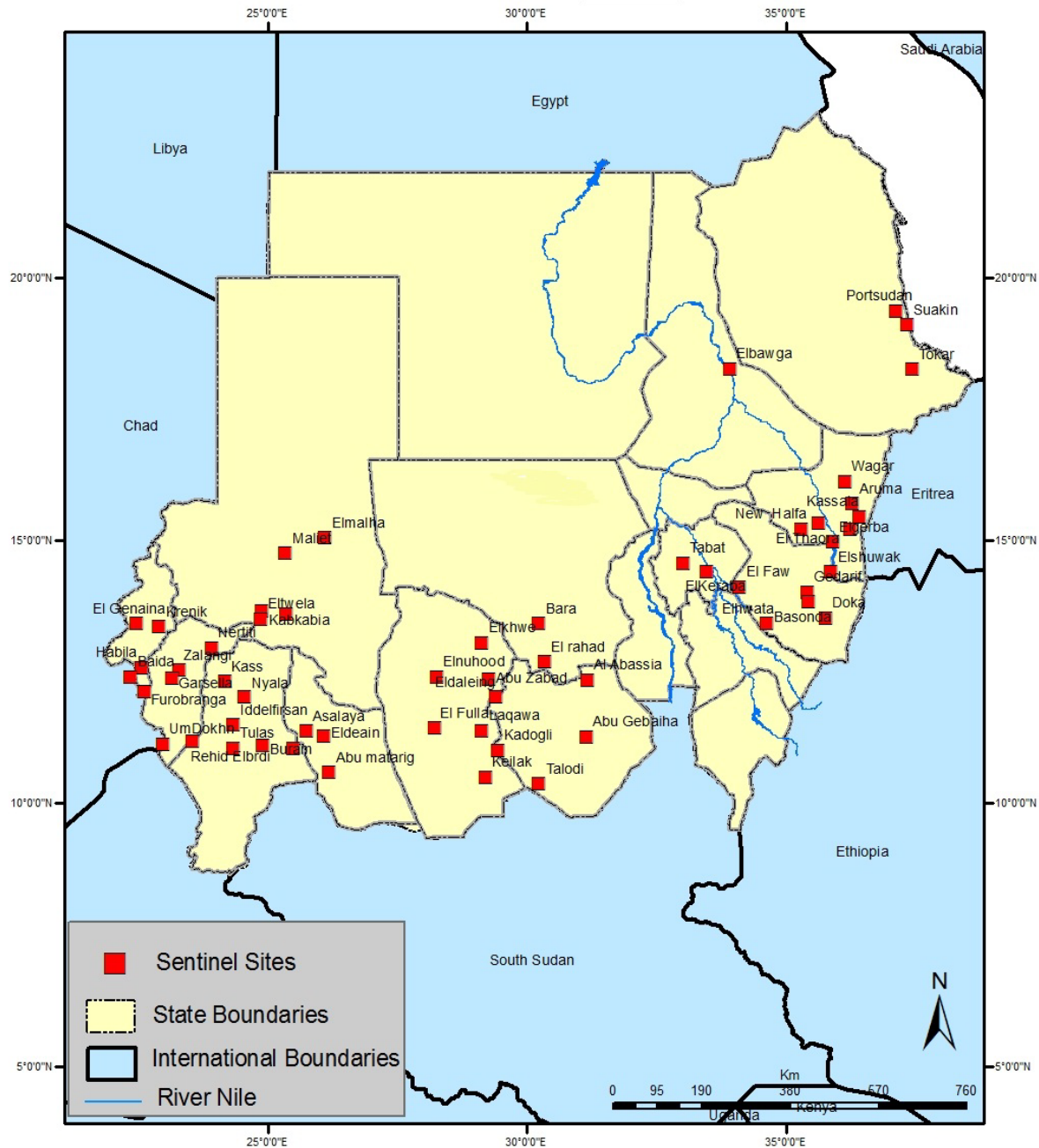
# Why Sudan is at Risk..?!

- ▶ Wide geographical areas where *Aedes aegypti* is proved to be present in venerable states (East and Darfur states)
- ▶ Previous occurrence of Dengue Fever, Chikungunya and Yellow Fever cases
- ▶ Difficult clinical identification of cases due to similarity and dominance of other Flavivirus diseases (i.e. Dengue and Chikungunya)
- ▶ Limited Lab capabilities to identify and diagnose viral diseases





## Distribution of *Aedes aegypti* in Sudan





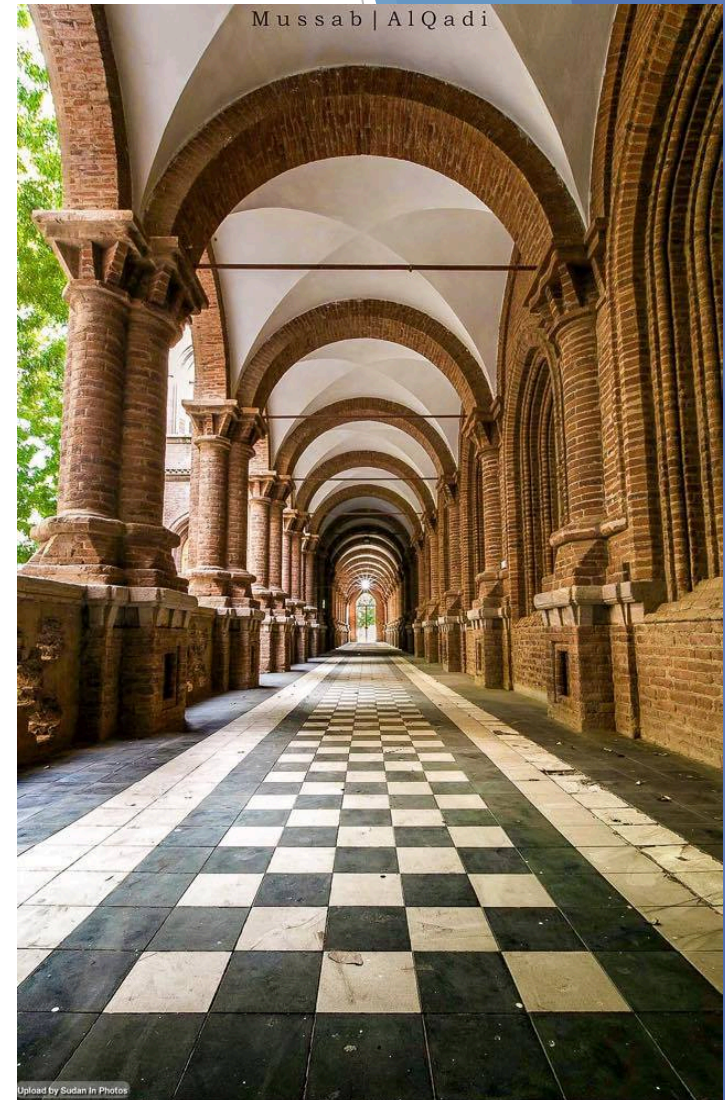
- ▶ International/US sanctions that prohibit Sudan from importing the required diagnostic kits
- ▶ Unintegrated surveillance system that will not communicate information easily and quickly
- ▶ Private sector is not included in the indicator-base surveillance system currently in place



- ▶ Low numbers of reporting sentinels that leaves “blind areas” and lead to late case detection
- ▶ Fragmented and poor health services in victor affected areas
- ▶ Absence of longitudinal vector control programs
- ▶ Active conflict in some areas with difficult or no-access areas.
- ▶ Challenged maternal and child health services in many states
- ▶ Naive health system that was not exposed to this disease before



- ▶ Healthcare facilities are not accessible in many localities
- ▶ risk communication is quite difficult in a population suffers from illiteracy and poor education
- ▶ Open borders with many fragile states makes it difficult for early detection of migrant cases
- ▶ Limited trained human resources in health sector
- ▶ Limited financial resources for health



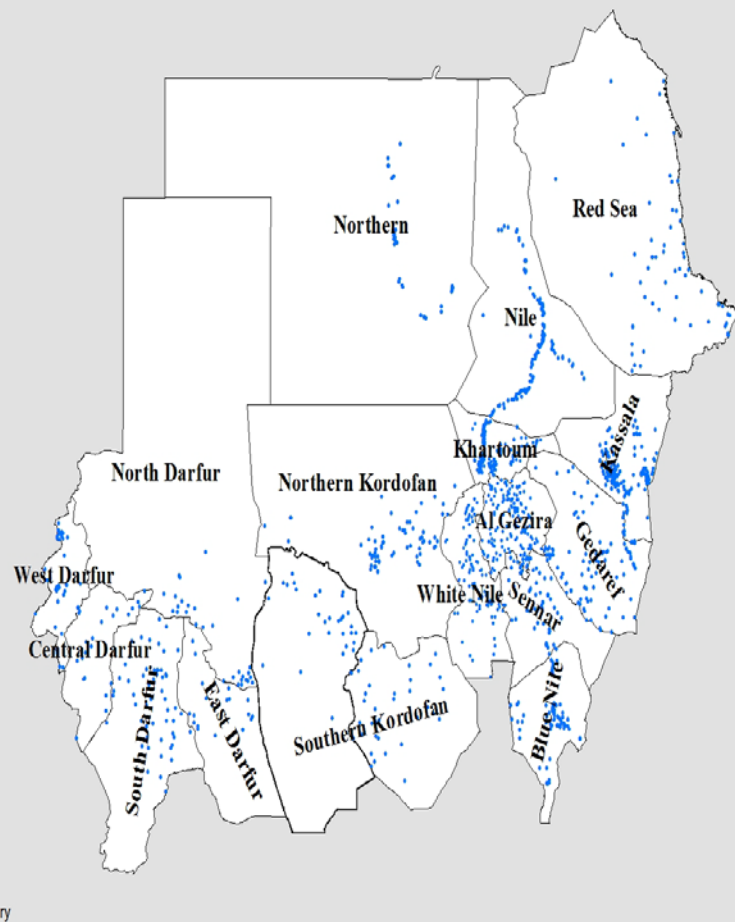


# Vector surveillance and insecticide resistance monitoring

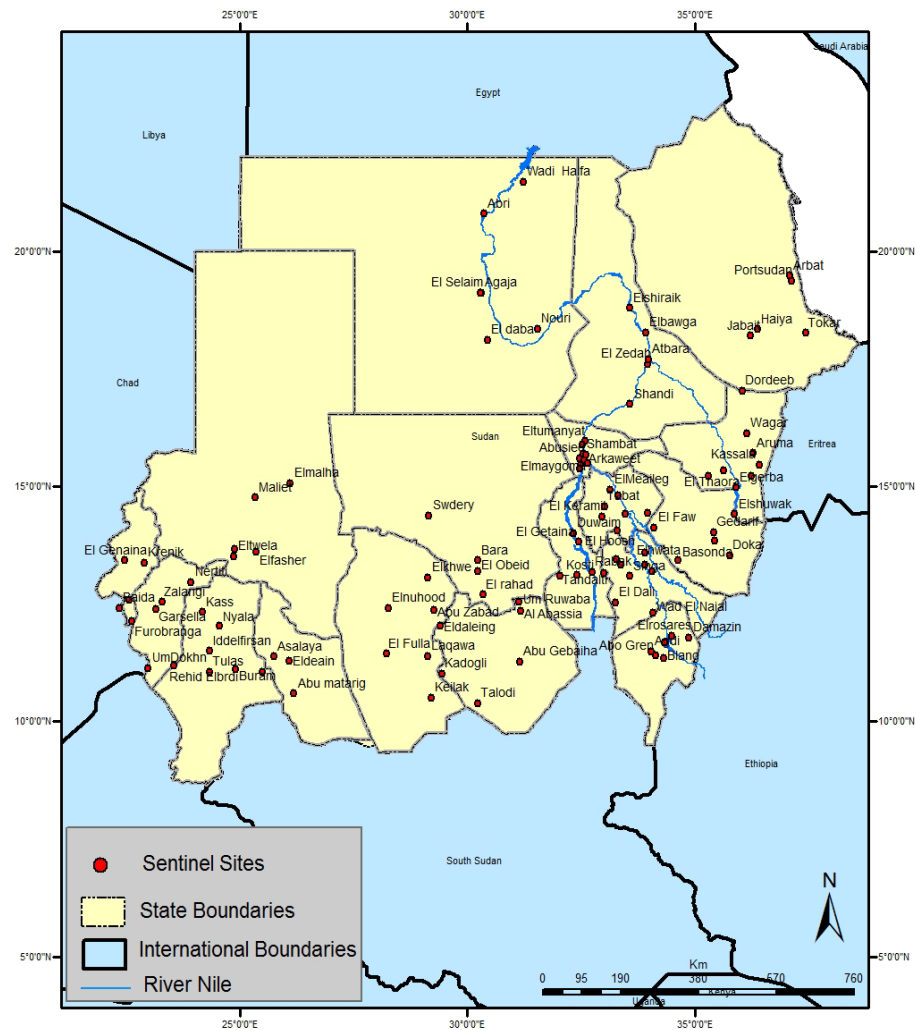
- ▶ 106 sentinel sites Identified for vector surveillance apart of that 73 sites for monitoring of IR
- ▶ Out of 73 sentinel site 49sites will be conducted annully and remaining 24 sites by annual.
- ▶ Collection of base line data of phenotypic results available for more than 70% sites.
- ▶ 6 field insectaries and 5 entomology lab established at state level
- ▶ Vector surveillance system established in all 18 states
- ▶ 42 of staff were trained on vectors identification in Faculty of since in Khartoum university, veterinary Research Institute and Tropical Institute
- ▶ Medical Entomology and Molecular lab stablised in Prof Algalal in national malaria training and research center this to conduct insecticide resistance mechanism detection

## Vector Surveillance Sentinel Sites (106 sites) in Sudan





### Vector Surveillance Sentinel Sites (106 sites) in Sudan

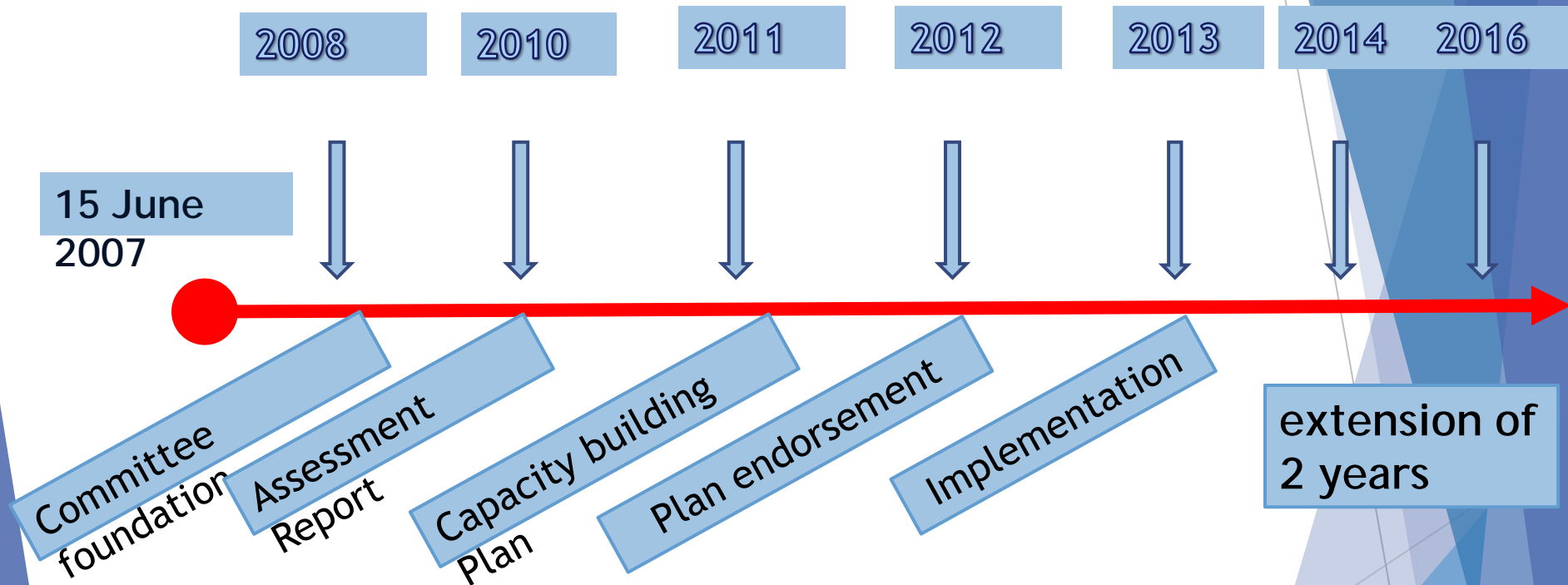




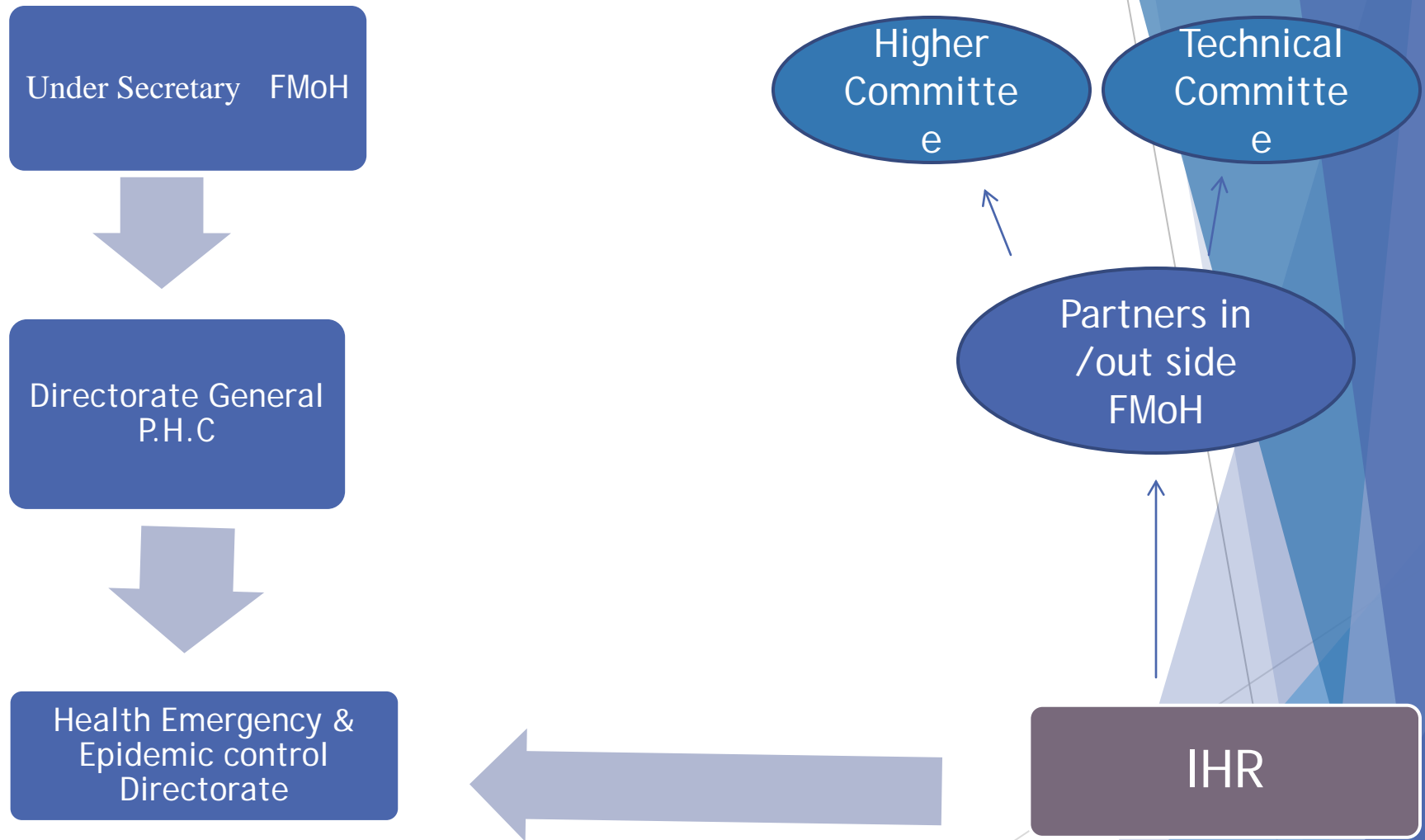
# Activities Related to PoE in Sudan

- National assessment was conducted.
- Designated PoE was updated.
- Functioning Surveillance system targeting POEs was established.
- Draft of response plan of PoE was developed.
- Stakeholders meeting for PoE was held, situation and gap analysis was carried out.

# SUDAN IHR Timeline



# SUDAN IHR Structure





# Some of activities achieved by IHR/2005



Training courses for quarantine staff at Port Sudan in ships inspection and International Sanitation Certificates according to IHR 2005



Health sorting area at Khartoum Airport



IHR meeting at point of entry



Visit for food preparation places at Khartoum Airport.

## Workshops Training on Food and water safety management



## Training Workshop on point of entry Surveillance was conducted.



## Workshops Training on point of entry Surveillance



# Strengths/Best Practices

- ▶ Strong coordination and communication between the different stakeholders of the designated points of entry
- ▶ Communication lines with other international PoE are in place
- ▶ Access to medical facilities at PoE and referral arrangements to other health facilities are in place. Also, availability of a space to isolate ill passengers with direct access to referral facilities.



# Strengths/Best Practices

- ▶ Regular meetings with the neighboring countries to address cross border public health issues
- ▶ The public health contingency plans for the designed port and airport were developed with the involvement of all relevant stakeholders
- ▶ Facilities for assessing potentially contaminated/ infected travellers are available onsite the designated port and airport

# Joint External Evaluation of International Health Regulations (2005)

- ▶ Revise the list of designated Points of Entry, and expand it to using risk assessment approach.
- ▶ Enhance the capacity of personnel at the different points of entry for inspection of goods and animals and for the early detection and management of ill passengers.
- ▶ Improve the capacity of public health programs and environment at PoE
- ▶ Ensure the sustainability and integration of PoE and facilities around them in the vector surveillance and control program.
- ▶ Establish animal quarantine space at PoE.



# *Priority Actions*

- ▶ Activate IHR committees in States and Localities.
- ▶ Endorsed the laws and national legislation with compliance with the requirements of the International Health Regulations (2005).
- ▶ Activate event base surveillance and Community base surveillance.
- ▶ Advance Training for RRTs .
- ▶ Rehabilitate Isolation rooms in the tertiary hospitals at center and states.



# Progress in Implementing the legislation in Sudan

- ▶ The legislation committee inventoried all laws related to areas covered by the IHR 2005 and write down first draft report which encompass the highlighted legislations/laws those are not in accordance with the IHR 2005.
- ▶ Legal frame work has been built in line with IHR 2005.
- ▶ The legal committee reviewed the current legal framework and policies and regulations relating to chemicals events and submitted their final report.
- ▶ Radio-nuclear laws had been reviewed.

# Activities Related to Surveillance in Sudan

- ▶ Developing of event based surveillance (EBS)
- ▶ The source of information related to the EBS has been identified at the community level
- ▶ Integration with Health information system Department to implement the EBS in piloting phase .

# Gaps and Challenges in Implementing

- ▶ Limited financial and qualified human resources are also issues of concern in Sudan.
- ▶ Empower the role of NFPs in strengthening IHR Implementation Plan
- ▶ Reporting and Responding to public health emergencies in a timely manner requires the full participation of and commitment from all related sectors



# Opportunities for Partner Support



**Financial  
Support**



# *Way Forward*







- ▶ **Strengthening of the surveillance system**, by training the staff, maintain the standard surveillance guidelines and SOPs and involvement of existing health privet sectors.
- ▶ **Strengthening of the Public Health Laboratory** through Improving the diagnostic lab capacity and collection of samples and sample transportation.
- ▶ **Increase the health awareness level at the community** via proper anthropology based evidence.
- ▶ **Outreach the No-Access and conflict** areas through community base surveillance and event base surveillance.



- ▶ **Strengthen the Indicator base surveillance in quality** rather than quantity.
- ▶ **launching (EBS and POI/CBS, IDSR , Lab Base Surveillance )**
- ▶ **Establish interconnected electronic reporting system and real-time Surveillance.**
- ▶ **Relief Sudan from the USA sanctions** to facilitate the importation of Lab-Kits required for early detection of Arboviruses.
- ▶ **National Risk mapping of Arboviruses.**





THANK YOU

