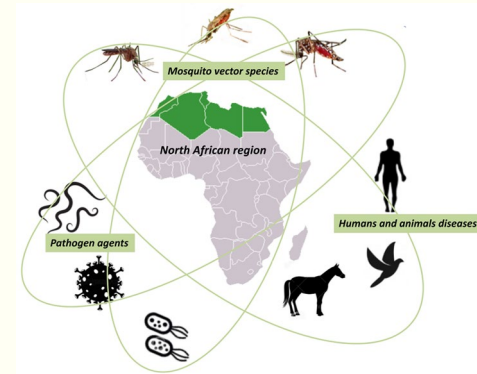




# VBD in North AFRICA



- Vector-borne diseases (VBD), mainly related to arboviruses, poses a substantial threat to human and animal health and represents an economic burden worldwide
- North-African countries, including Tunisia, Algeria, and Libya, share the same ecological system with similar potentialities for the emergence of VBD.
- In these countries, several outbreaks and/or epidemics have been reported with an increase both in frequency and scale and with a direct impact on animal and human health.

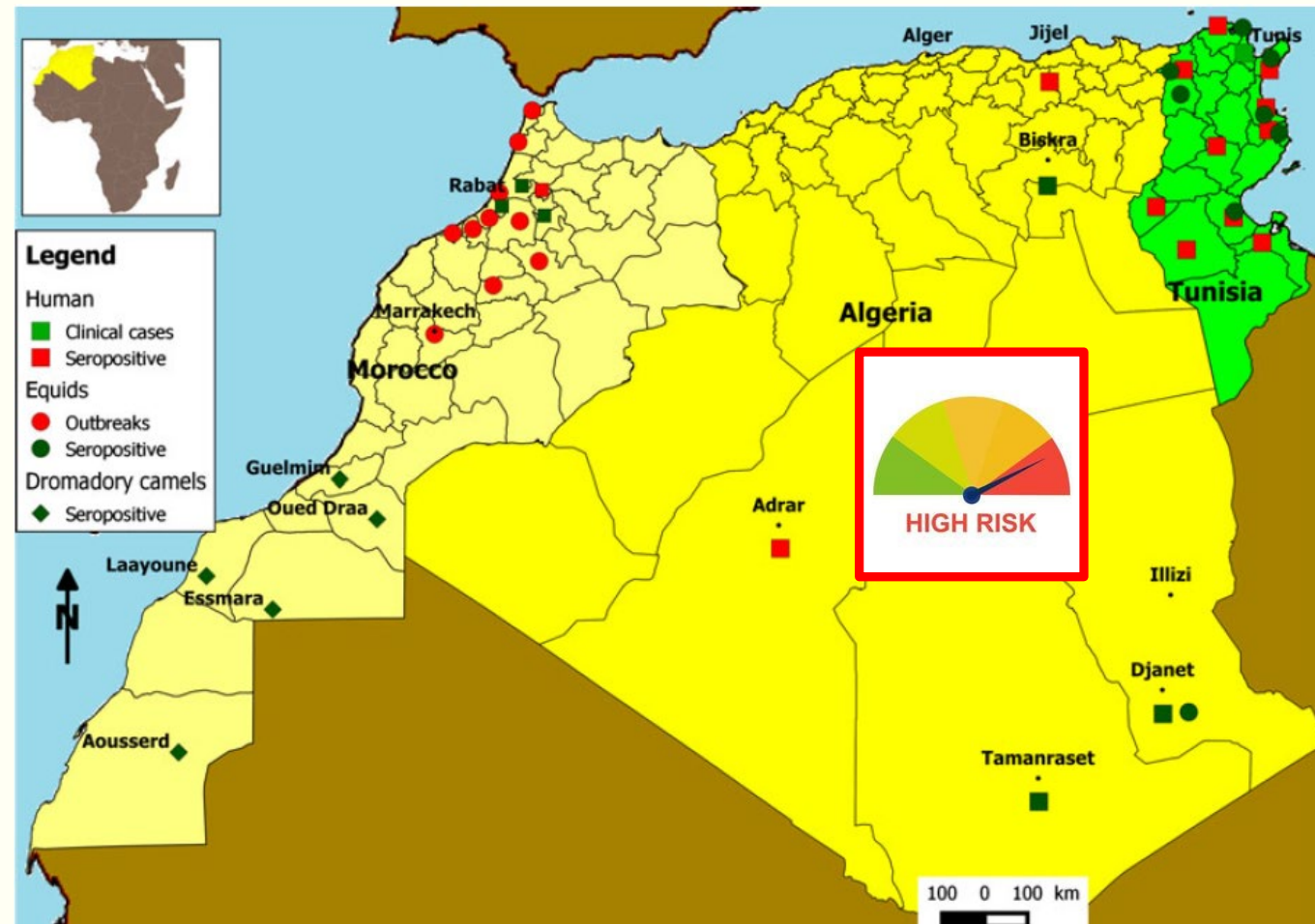
# Preparedness, prevention and response strategy

In line with the objectives of the MLS, the workshop aims to:

- Train regional and multidisciplinary teams to work together to investigate an outbreak of arboviruses rapidly and on the field.
- Implement a common regional multidisciplinary strategy to deal with the future epidemic to pandemic emergence of vector-borne diseases.
- Create a regional network in order to report any emergence, even sporadic, in the region to better monitor and manage the dynamics of the circulation of arboviruses with direct impact on human and animal health in North African region

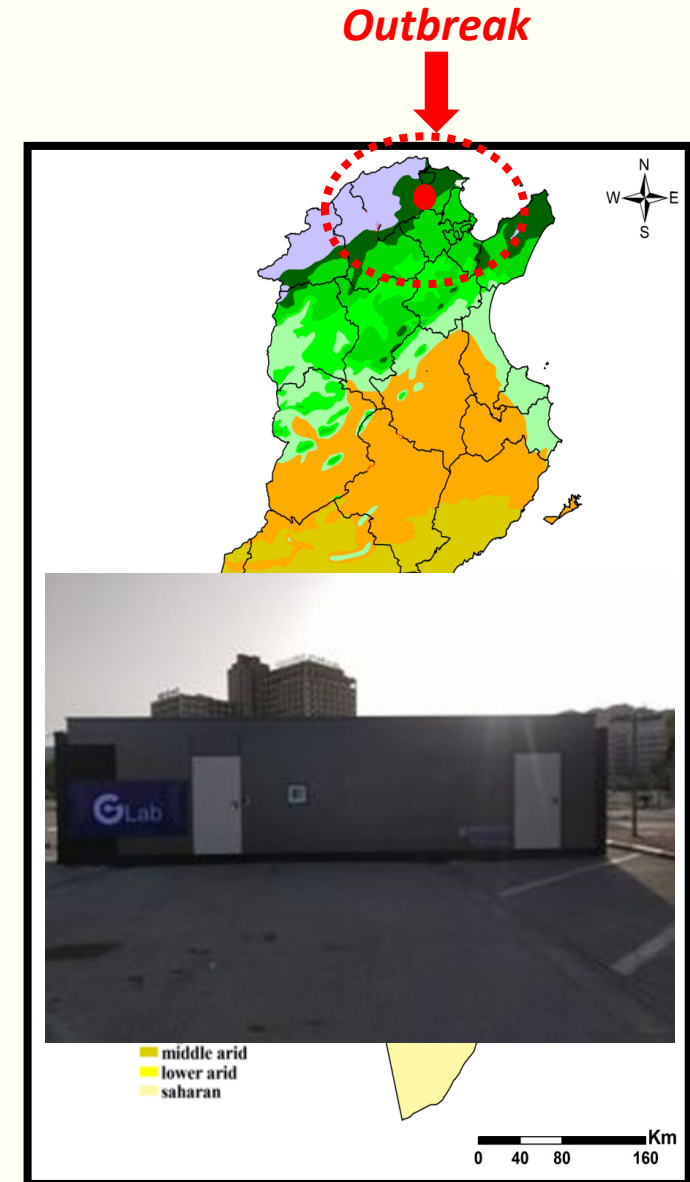
# Typical example: WEST NILE VIRUS

- Considered as the most widespread mosquito-borne human disease
- Several outbreaks occurred mainly in Tunisia with neuroinvasive infection
- Evidence of WNV circulation in the North-African region
- Circulating strains identified as genotype 1a



# Scientific rationale

- Report of an outbreak of human aseptic meningitis.
- Field team included human and animal virologist and entomologist experts from Tunisia, Algeria, and Libya
- Rapid field investigation will be performed using the mobile laboratory from Institut Pasteur de Tunis, and conduct an investigation of clinical cases.
- An entomological investigation will be carried out in parallel
- Investigation will be performed via standards rapid molecular diagnostic technics to identify the suspected pathogen



# Genetic characterization of the epidemic strain in humans and the vector

- Whole genome sequencing using ONT
- Ampliseq protocol for WNV WGS
- Whole genome consensus sequence from human and mosquito samples: <https://www.genomedetective.com/app/typingtool/virus/>
- Genotyping and phylogeny of the WNV epidemic strain



- The field mission report will give precise answers on the etiology of this emerging neurological pathology as well as the pathogen and subsequently take adequate measures to deal with the situation in a quick and effective way.
- This field workshop will allow the participant to better identify the failures of the existing surveillance systems and to implement new response systems and thus to learn how to better organize ourselves to deal with a possible epidemic or pandemic.



Thankyou for your attention

