



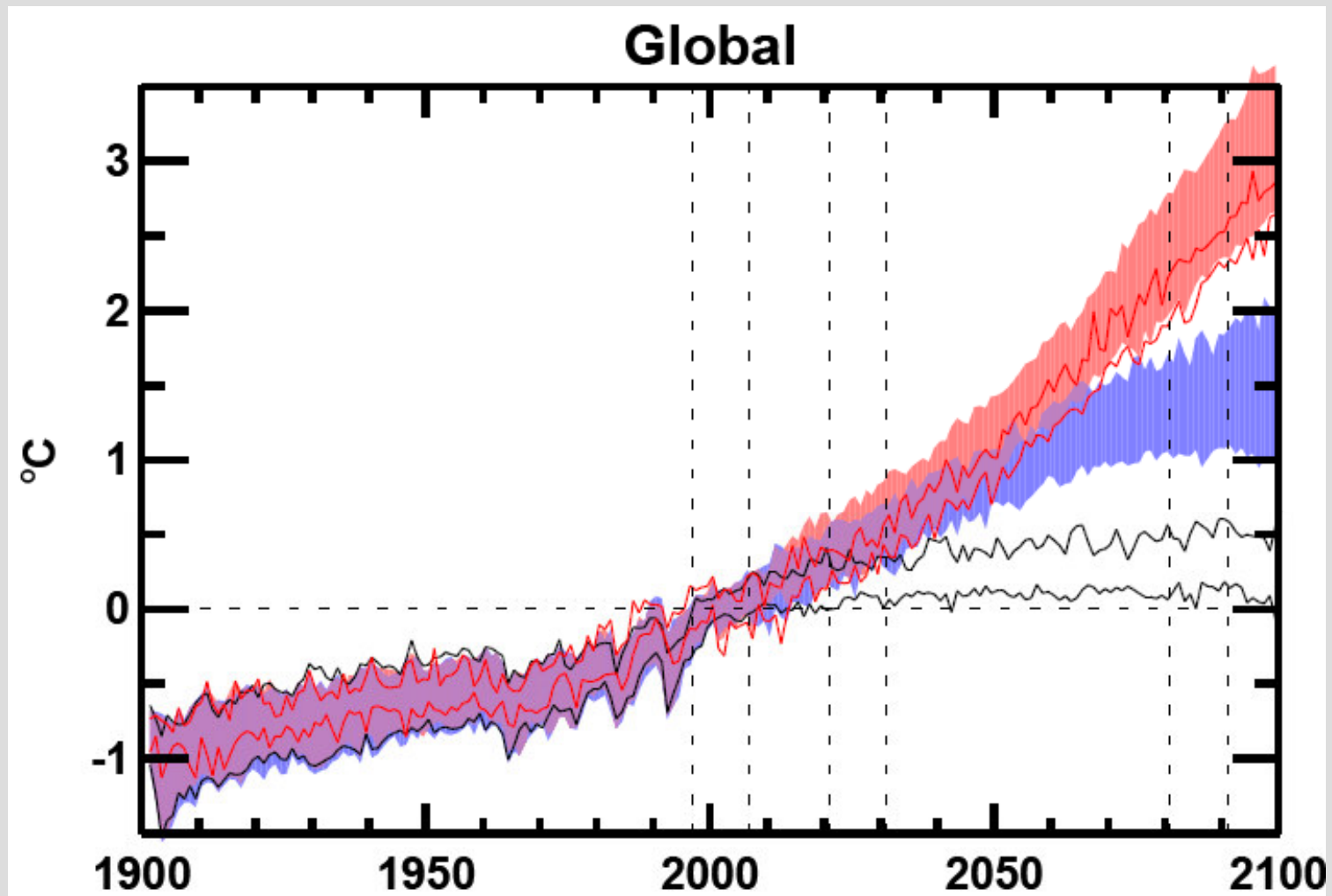
# Rift Valley Fever

## Potential impacts of climatic changes or perturbations

**S. de La Rocque, FAO Rome & P. Formenty, WHO Geneva**



## Scenarios for climatic change



Time series of annually and globally averaged surface temperature from climate model simulations following various emissions scenarios  
As anomalies from the 1997-2006 average.

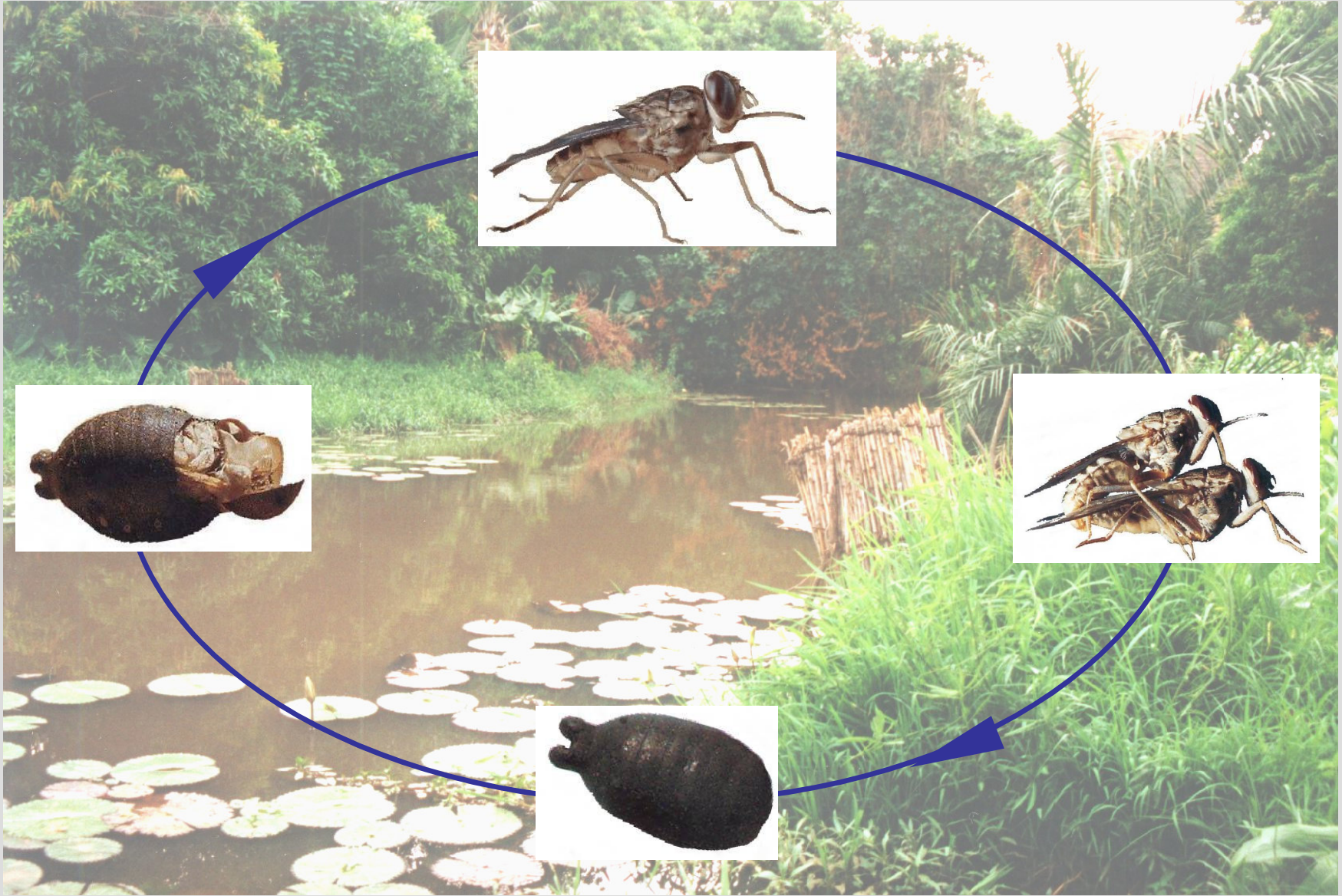
HEALTH PROFESSIONALS AND SCIENTISTS WARN OF SPREADING INFECTIOUS DISEASES.

# Global Warming's greatest threat may also be the smallest.

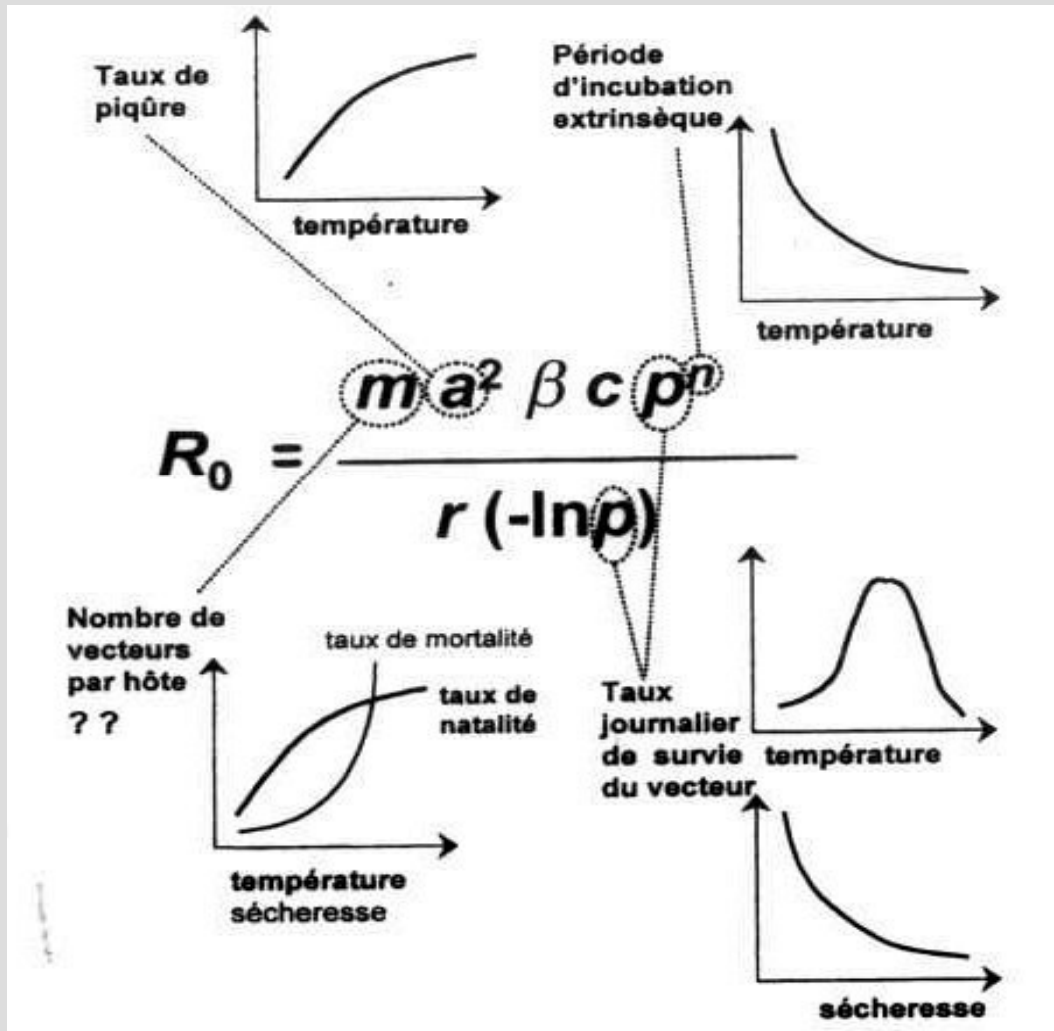




# Vectors bionomics



# $R_0$ : basic reproductive number of the disease



$m$  = vector/host ratio

$b, c$  = transmission coefficients

$a$  = biting rate

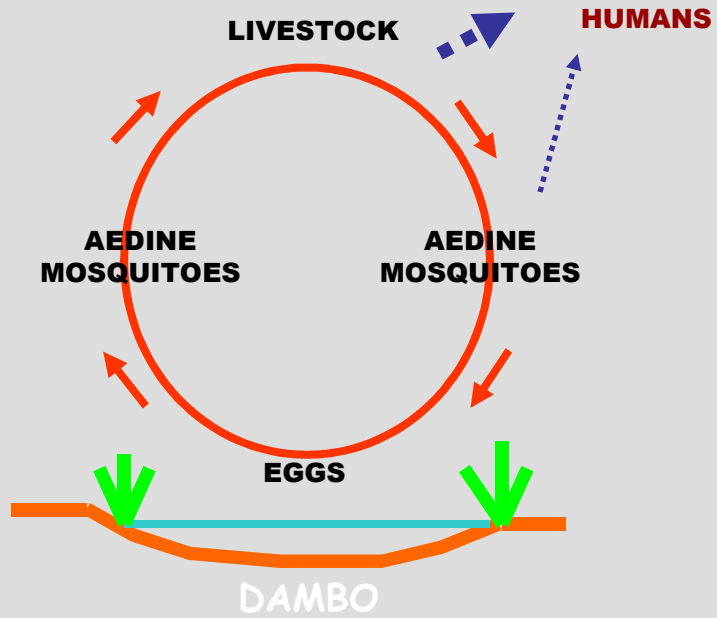
$\mu$  = vector daily mortality rate

$T$  = extrinsic incubation period

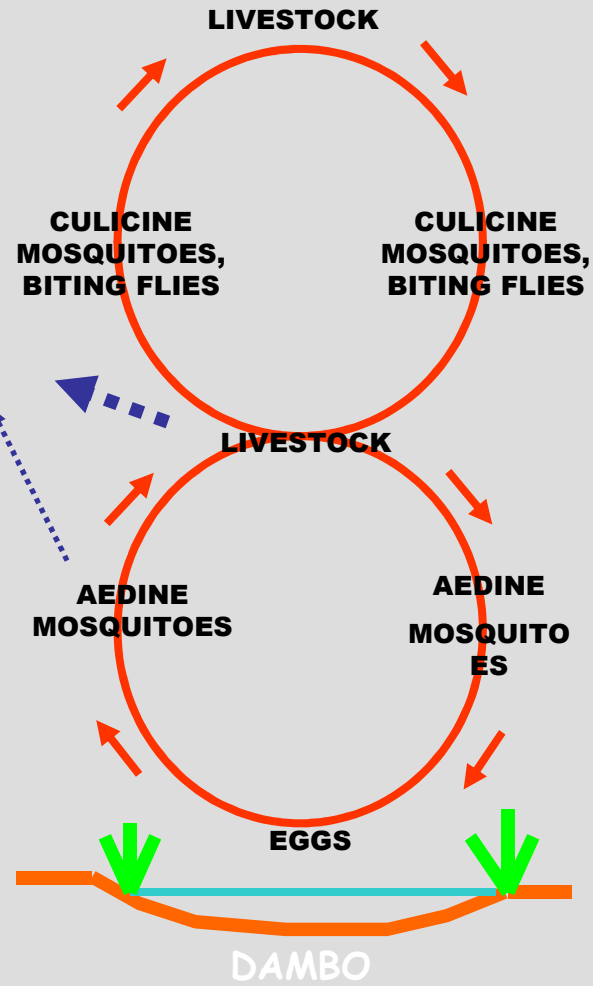
$r$  = host rate of recovery of from infection

6 out of 7 are impacted by climatic factors

## ENZOOTIC CYCLE



## EPIZOOTIC CYCLE



*Aedes mcintoshi*  
Linthicum & Richardson

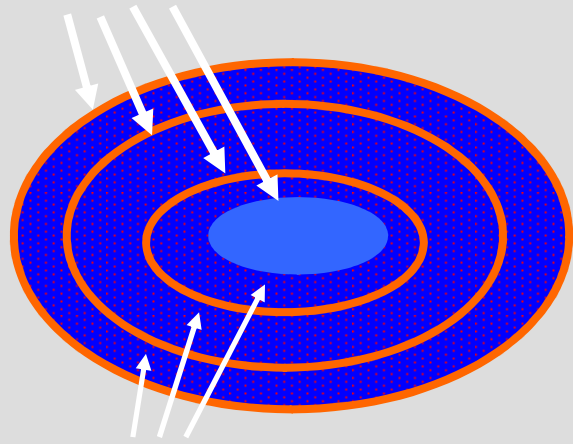


*Culex*  
Fontenille





**FLOODING LEVELS**



**MOSQUITO EGGS**

**Aedes**

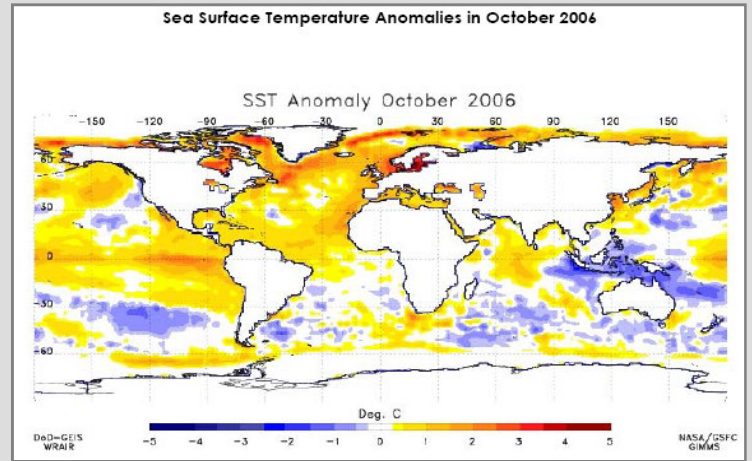


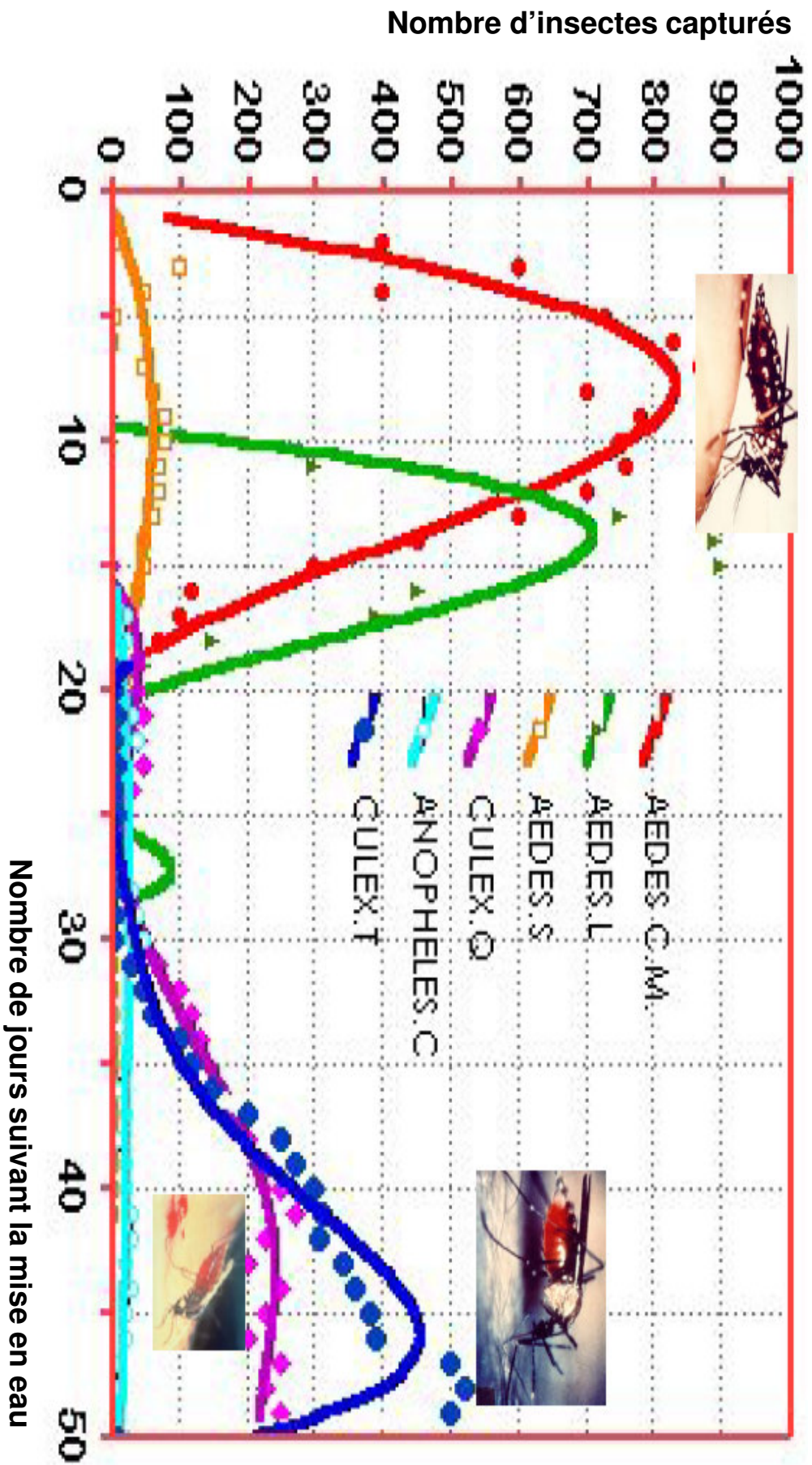
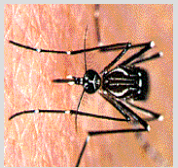
**Vertical  
Transmission  
=  
Emergence  
First wave**

**Culex**



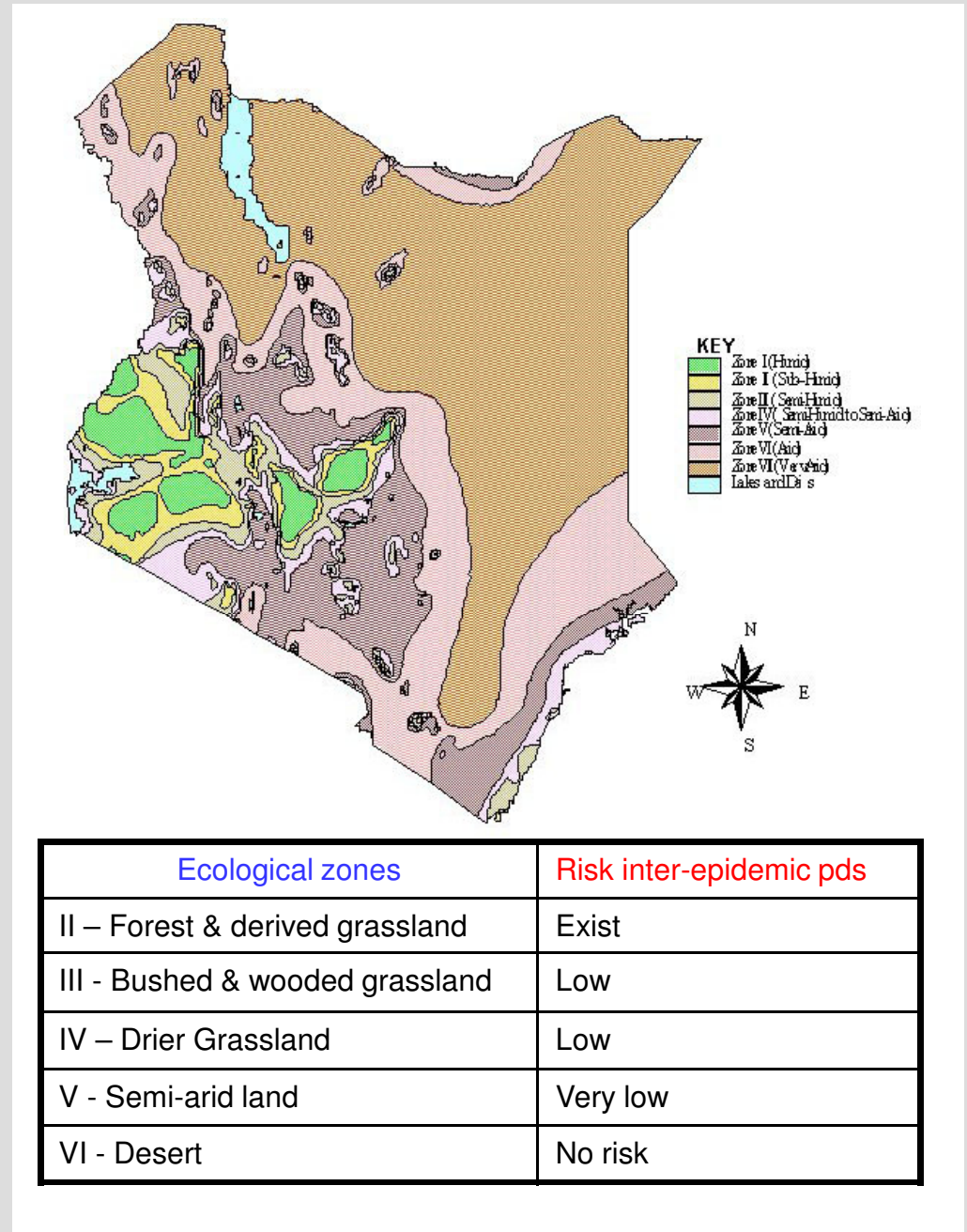
**Horizontal  
Transmission  
=  
Amplification  
Second wave**







## Epidemic vs endemic





# Sudan



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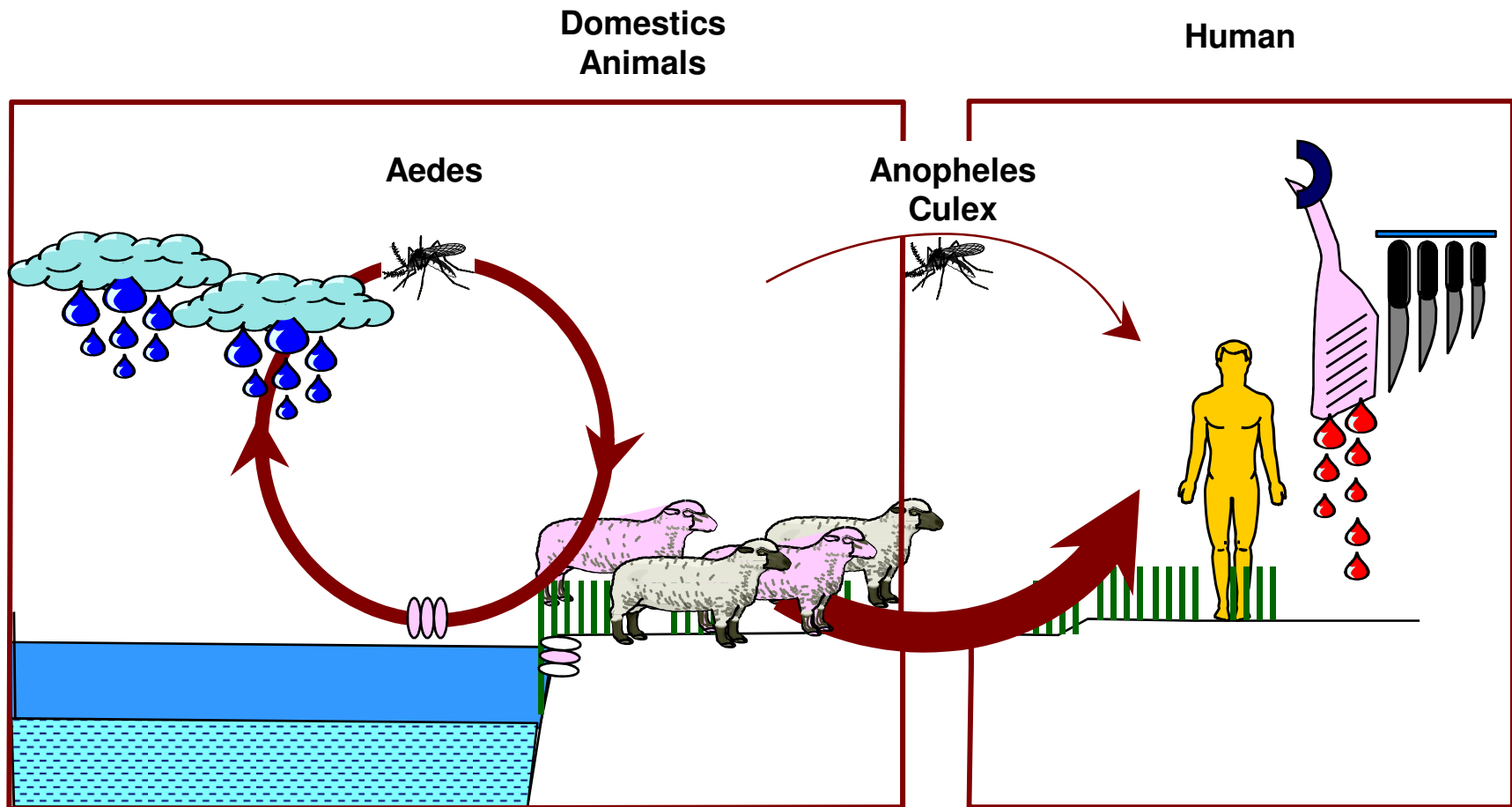


Sudan





# Breeding sites flooded (Dambos)





Sudan





**Sudan**

