

GRIPAVI MALI

Epidemiology and Ecology of Avian Influenza virus in Wild Birds

2 PhD Candidates :

Bouba FOFANA (DNCN – WI)

Julien CAPPELLE (CIRAD)

General presentation

Mali

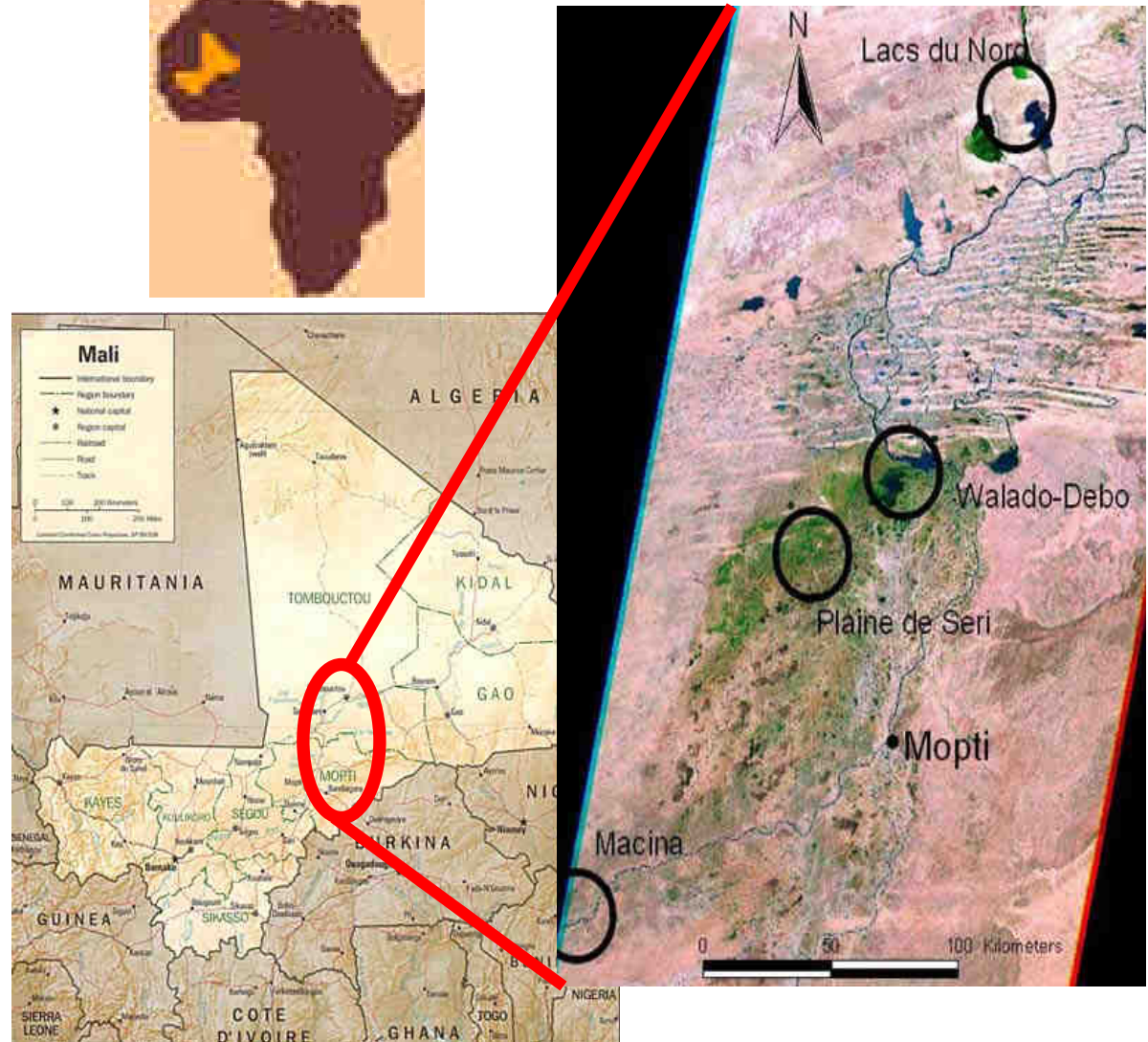


Inner Niger Delta

Hydrology

Wild Bird Community

Millions of African and migratory palearctic wild waterbirds



Structural and functional components of wild birds' communities reservoir of pathogens: importance in epidemiological patterns

Bouba FOFANA

What is the impact of the structural and functional characteristics of birds population on the epidemiological patterns of 2 diseases: Avian Influenza and Newcastle disease ?

- **age structure**
- **number of individuals**
- **population density**
- **interactions**



Methods

- Bird census
- Bird catching, Identification and Sampling
- Environmental sampling
- Multivariate statistical analysis



Analysing and modelling the risk of introduction and spreading of avian Influenza viruses by wild birds in tropical ecosystems

Julien CAPPELLE

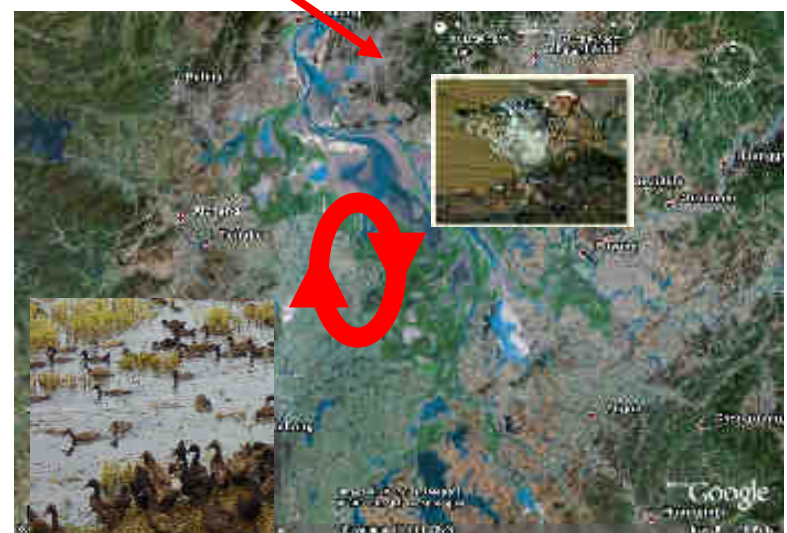
Circulation ?
Persistence ?

Risk ?



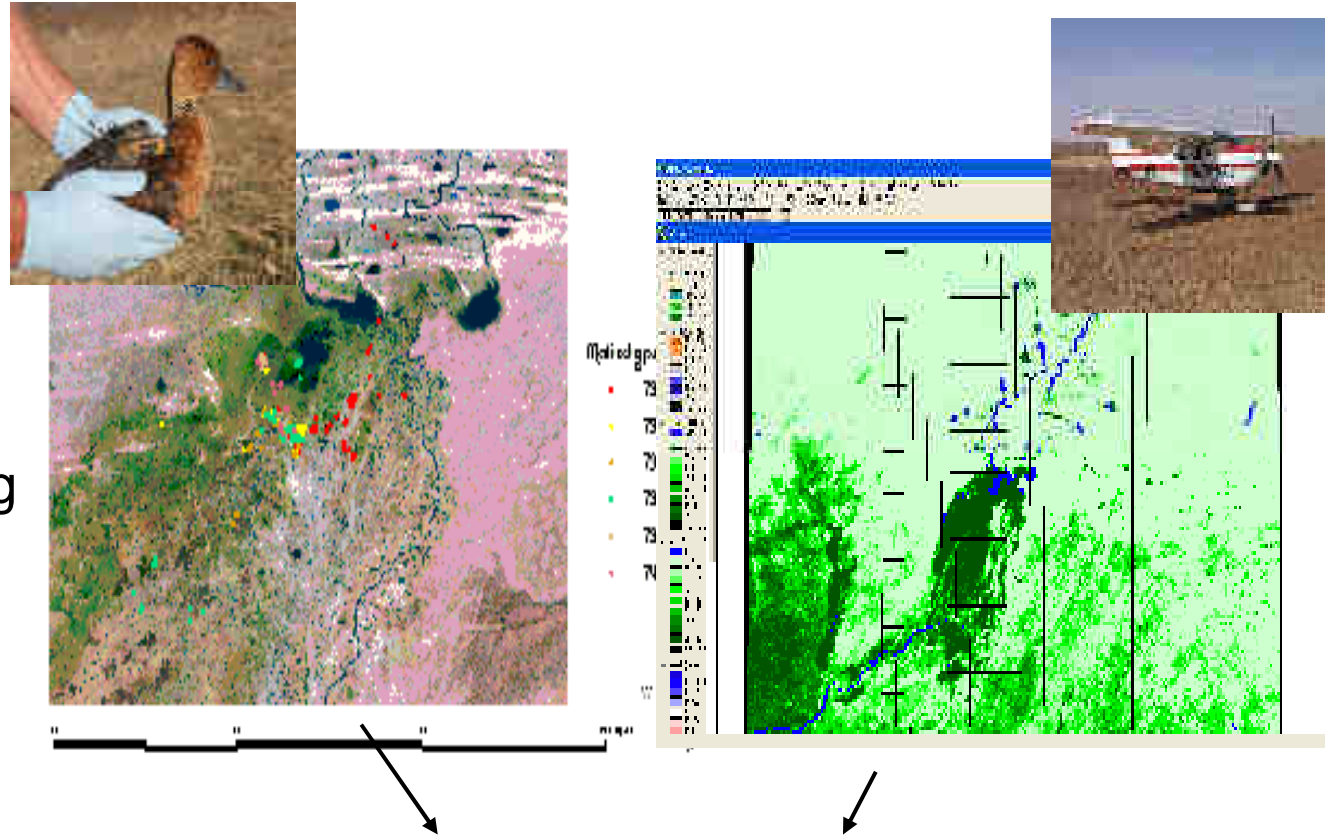
DIN - Mali

Poyang Lake - China



Methods

- Bird Sampling
- Statistical spatial modelling based on :
 - Bird Census
 - Telemetry
 - Remote sensing
- Mathematical modelling



$$\# \text{ Birds} \sim s(\text{NDVI}) + s(\text{NDWI}) + s(\text{LST})$$



Conclusion

1 Global subject : 2 PhD subjects

- Shared methods / Original methods
- 1 Ecologist / 1 Veterinarian
- 1 South / 1 North