

Analysis of historic data of PPRV serology in wildlife in Africa

Nicolas Gaidet



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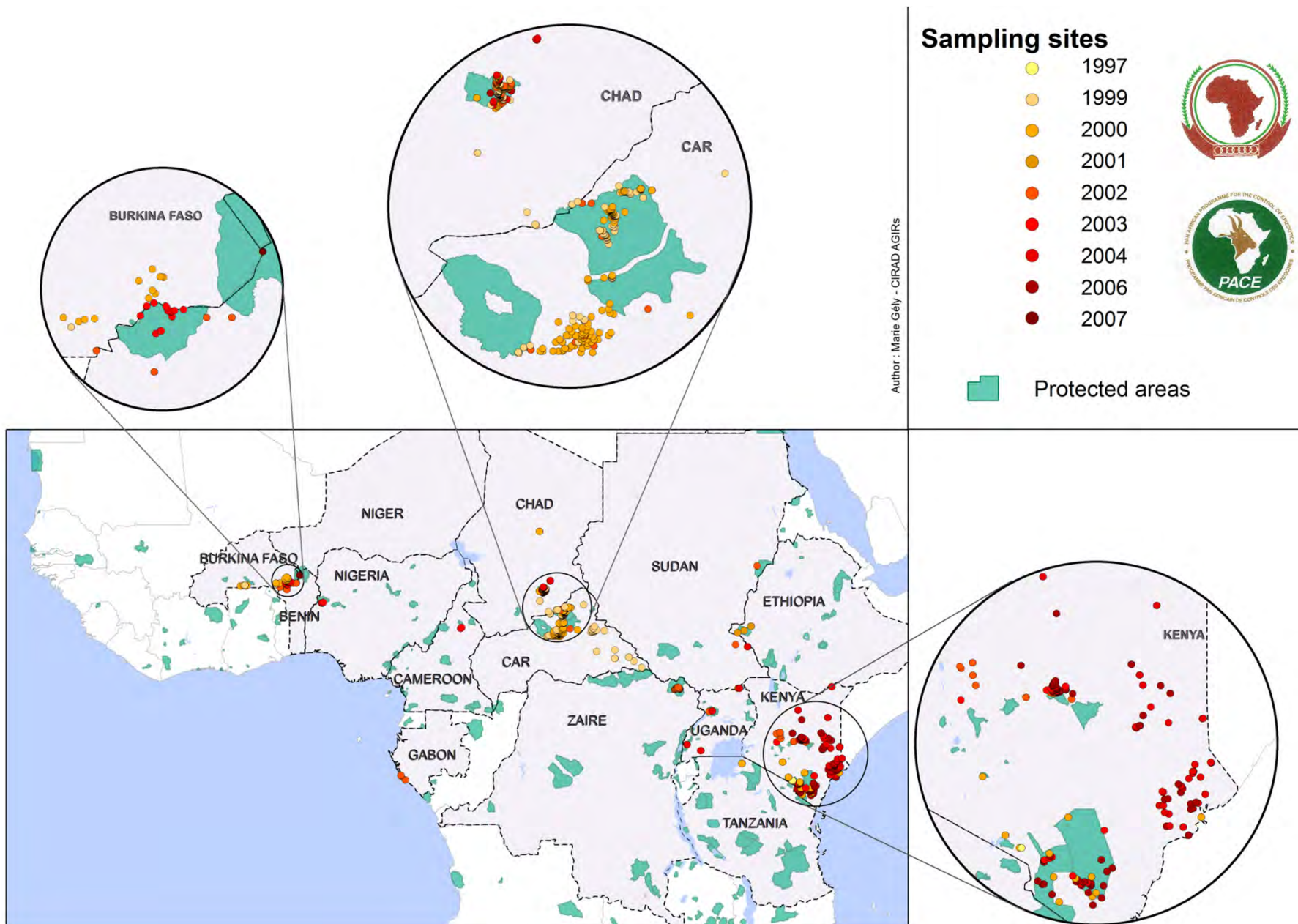
Serums collected under the Pan African Rinderpest Campaign (PARC) & the Program for the Control of Epizootics (PACE)



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- ✓ c.1700 animals
- ✓ 1997-2007
- ✓ 13 countries

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Analysis of historic data of PPRV serology in wildlife in Africa

c.30 species, mostly:

• Bovinae (bufallo) (45%)



• Reduncinae (Buffon's kob) (18%)



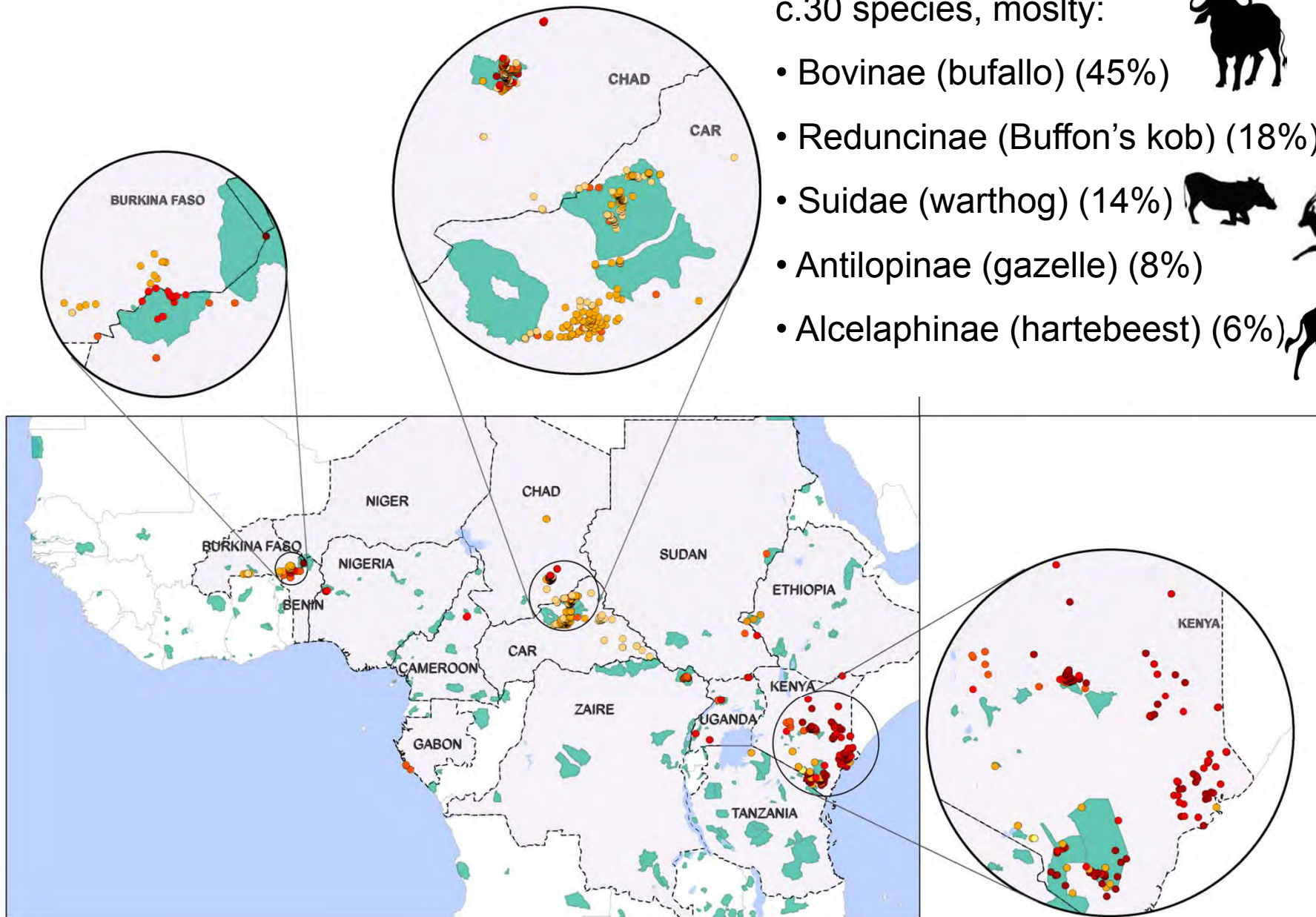
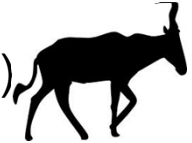
• Suidae (warthog) (14%)



• Antilopinae (gazelle) (8%)



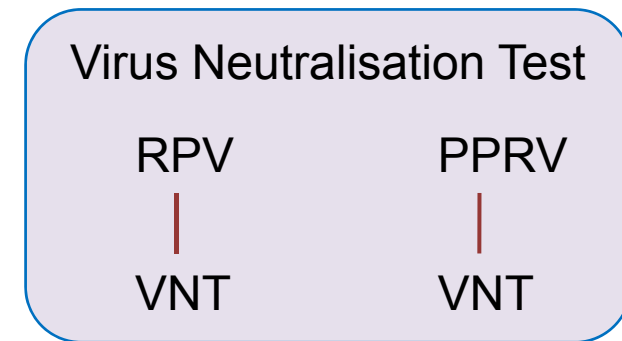
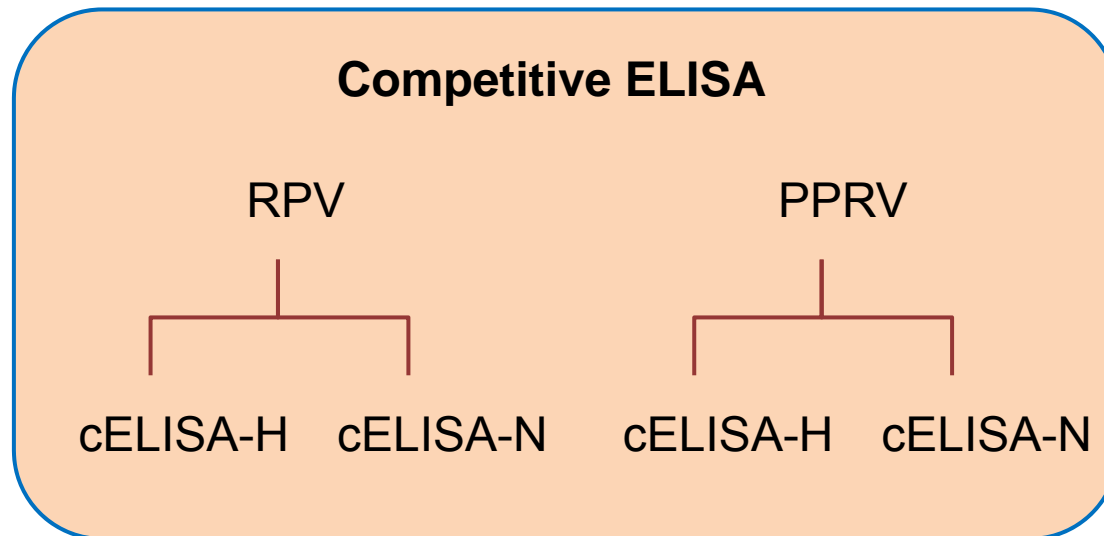
• Alcelaphinae (hartebeest) (6%)



Diagnostic procedures



Serums concurrently analysed for the detection of antibodies to RPV and PPRV at CIRAD (cross-reactivity in serologic tests)

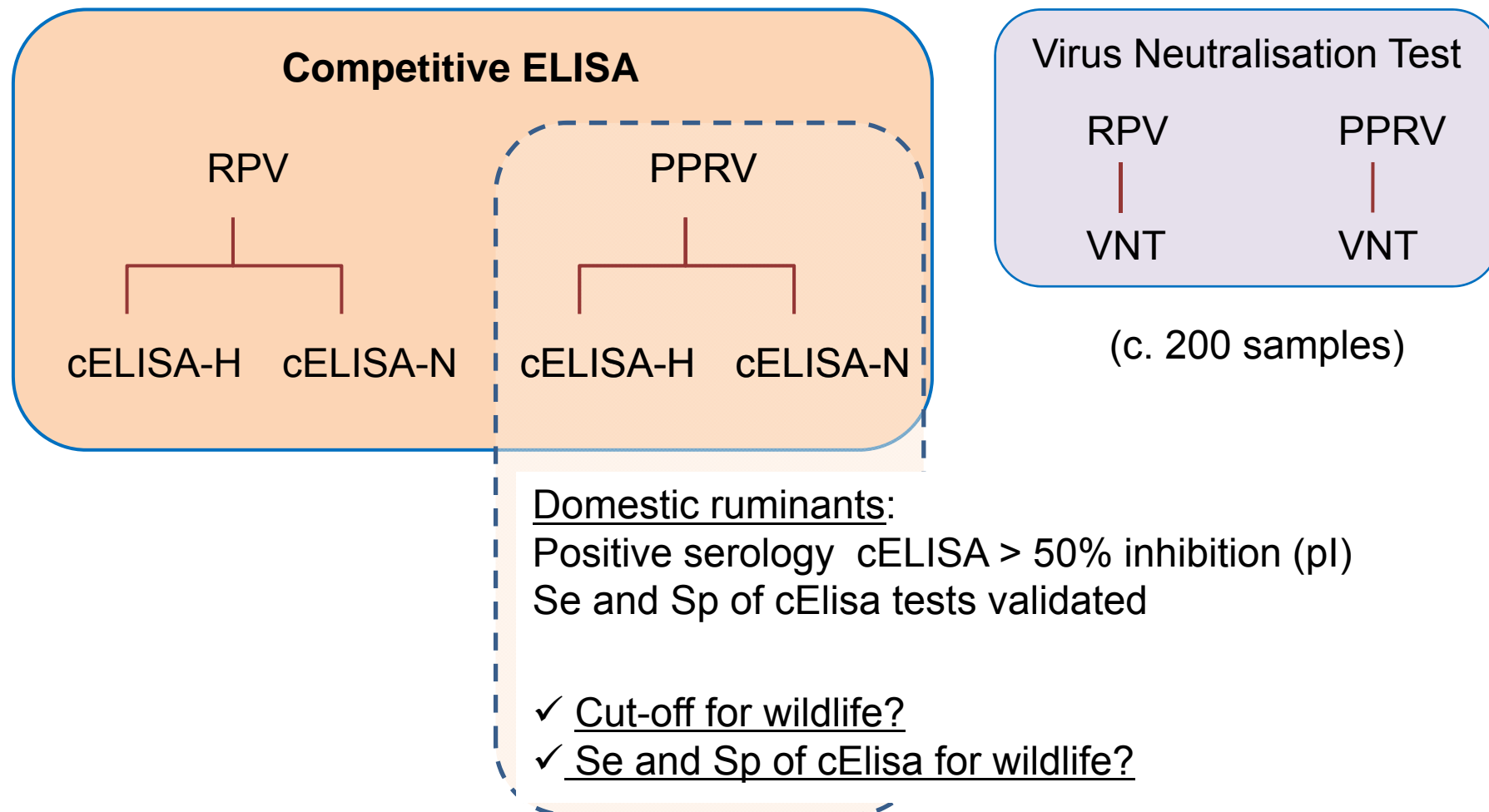


(c. 200 samples)

Diagnostic procedures

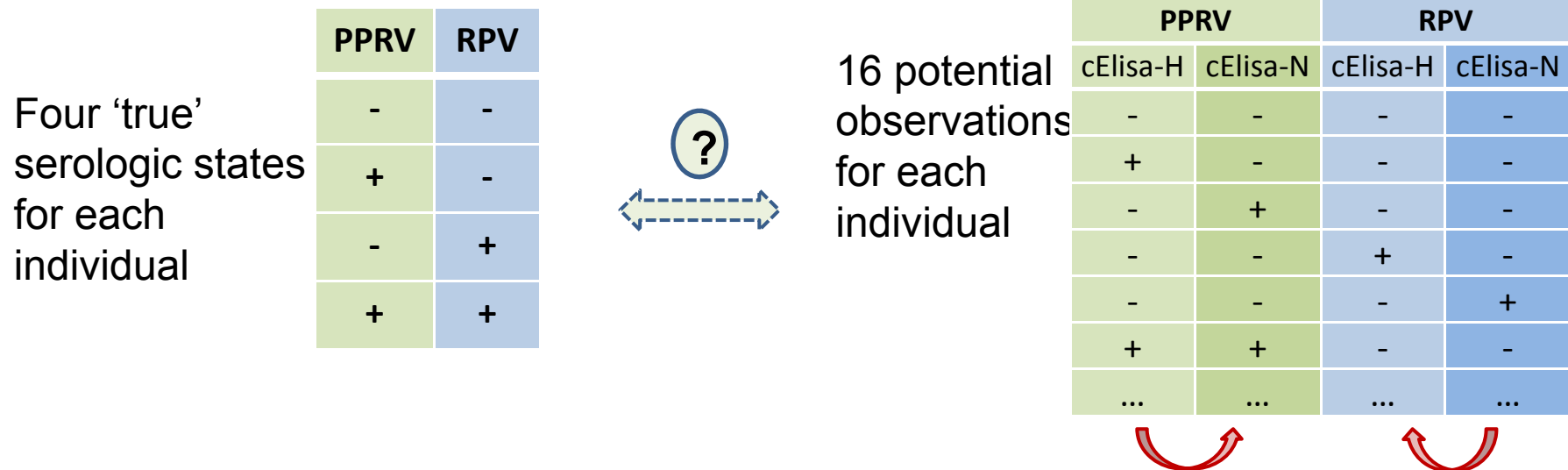


Serums concurrently analysed for the detection of antibodies to RPV and PPRV at CIRAD (cross-reactivity in serologic tests)



Analysis procedure: Bayesian latent variable mode

- cElisa tests: 'True' serologic status not directly observed



- Conditional dependency of test results
 - ✓ correlation of PPR test results conditionally on true negative state
 - ✓ correlation of PPR test results conditionally on true positive state
 - ✓ ...

Analysis procedure: Bayesian latent variable mode

→ Test performance parameters and Prevalence variations are simultaneously modelled

Prevalence \sim Age + Taxonomic group (+ spatio-temporal clusters + ...)

Test performance \sim Se₁₋₄ + Sp₁₋₄ + Conditional covariance parameters

→ Exploratory analysis:

Objective:

- ✓ Increase understanding of PPRV eco-epidemiology in wild African ungulates
- ✓ Evaluation of serological tests for PPRV in wild ungulates

→ on going ...



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Thank you