Space-time analysis of peste des petits ruminants in Mali and identification of risk factors

The challenge

- Peste des petits ruminants (PPR) hinder the productivity of small ruminants and thus reduces the income of livestock farmers.
- This disease which has an effective vaccine, is subjected to a worldwide eradication program.
- Despite of high investment of Malian government to control PPR, vaccination coverage is still very low (less than 20%), yet veterinary services are resources-constrained.
- Transhumance of livestock, change in weather pattern and unpredictable dynamics in feed resources viability, amongst other factors, makes it difficult for the veterinary services to identify priority areas to start up vaccination.

Our innovative approach

- Retrospective cases of PPR from 2011 to 2023 to generate risk maps using Multivariable Regression Models, SatSacan and Geographically Weighted Regression.
- Triangulation of results with expert opinion from the veterinary services and the field in Mali.

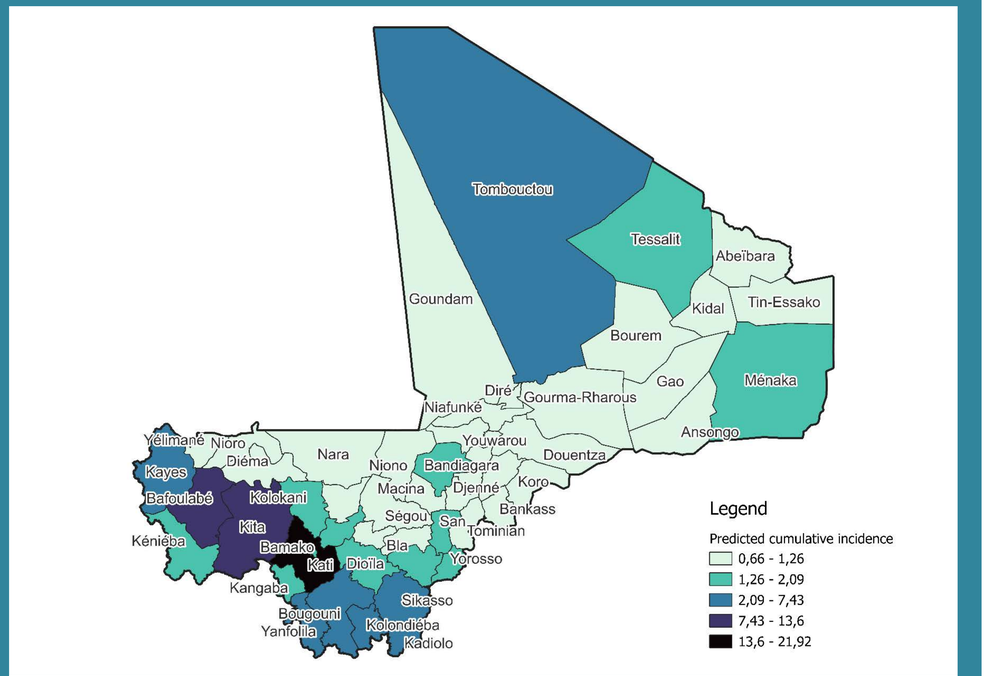

Figure: Risk map based on overall predicted cumulative incidence of PPR from Geographically Weighted Regression model. **Source:** Zannou et al, 2024.

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Outcomes

- Good understanding of the distribution of PPR outbreaks over time and space and key risk factors.
- Guiding strategic risk-based vaccination in Mali.
- Supporting the control and eradication of PPR, with a view of achieving the objectives set by the Malian government..
- Benefit to livestock farmers to optimize herd productivity

Next steps

- Guide the PPR control and eradication strategy for Mali using the thermostable PPR vaccine by 2030.
- This innovation can be used for other to inform strategic vaccination for other livestock diseases to help for their control in Mali or elsewhere.

Partners

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