

The determinants of foot-and-mouth disease (FMD) virus circulation in livestock populations in northern Tanzania

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AfricanBioServices

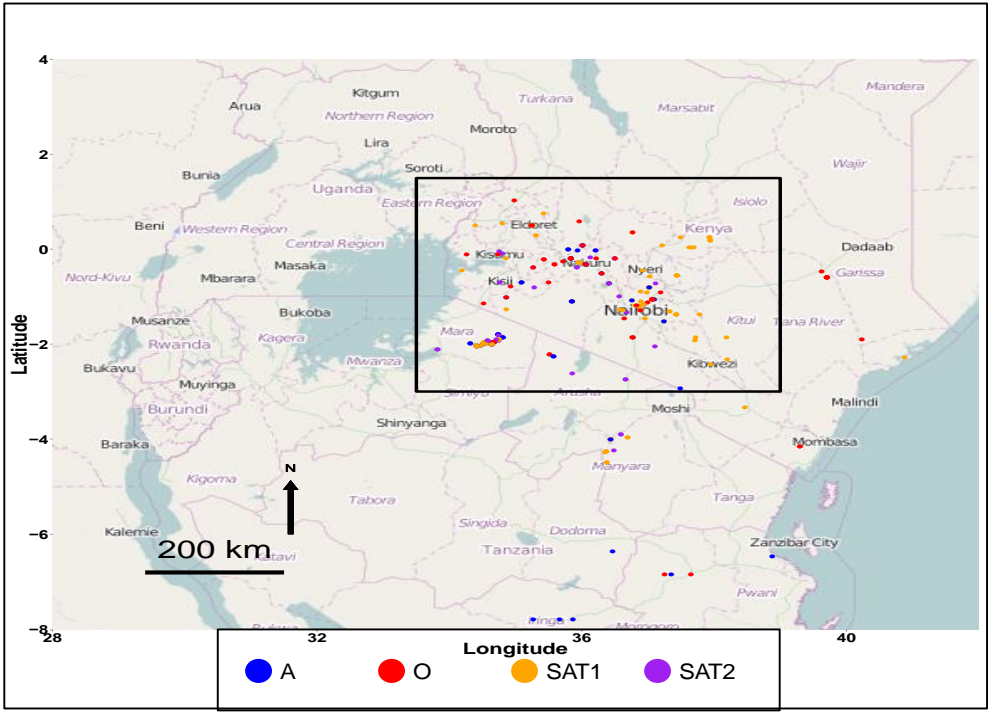


Motivation and Knowledge gaps



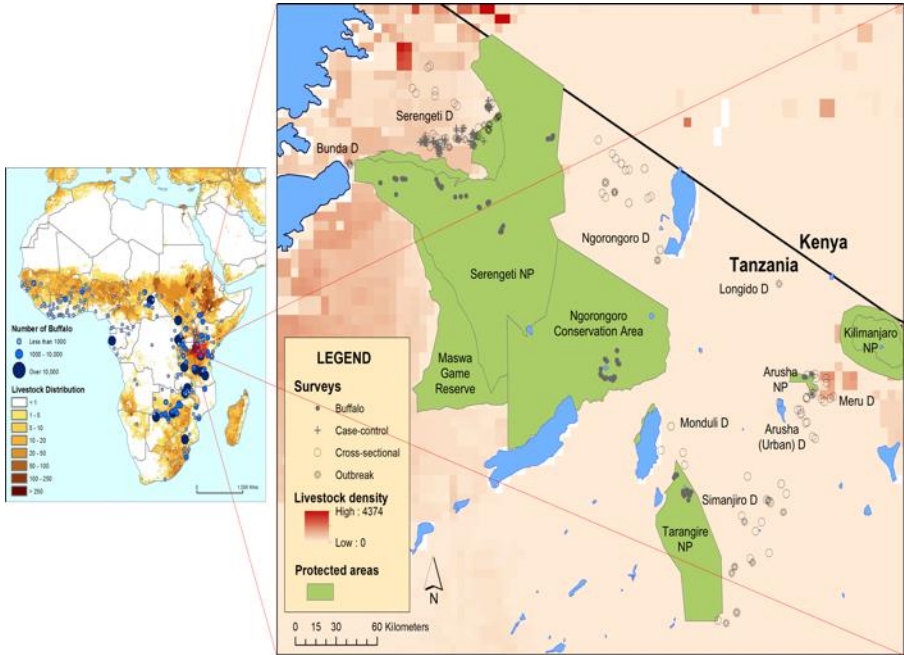
- **Key question**

Can livestock movements network help explain FMDV transmission and spread in an endemic setting?

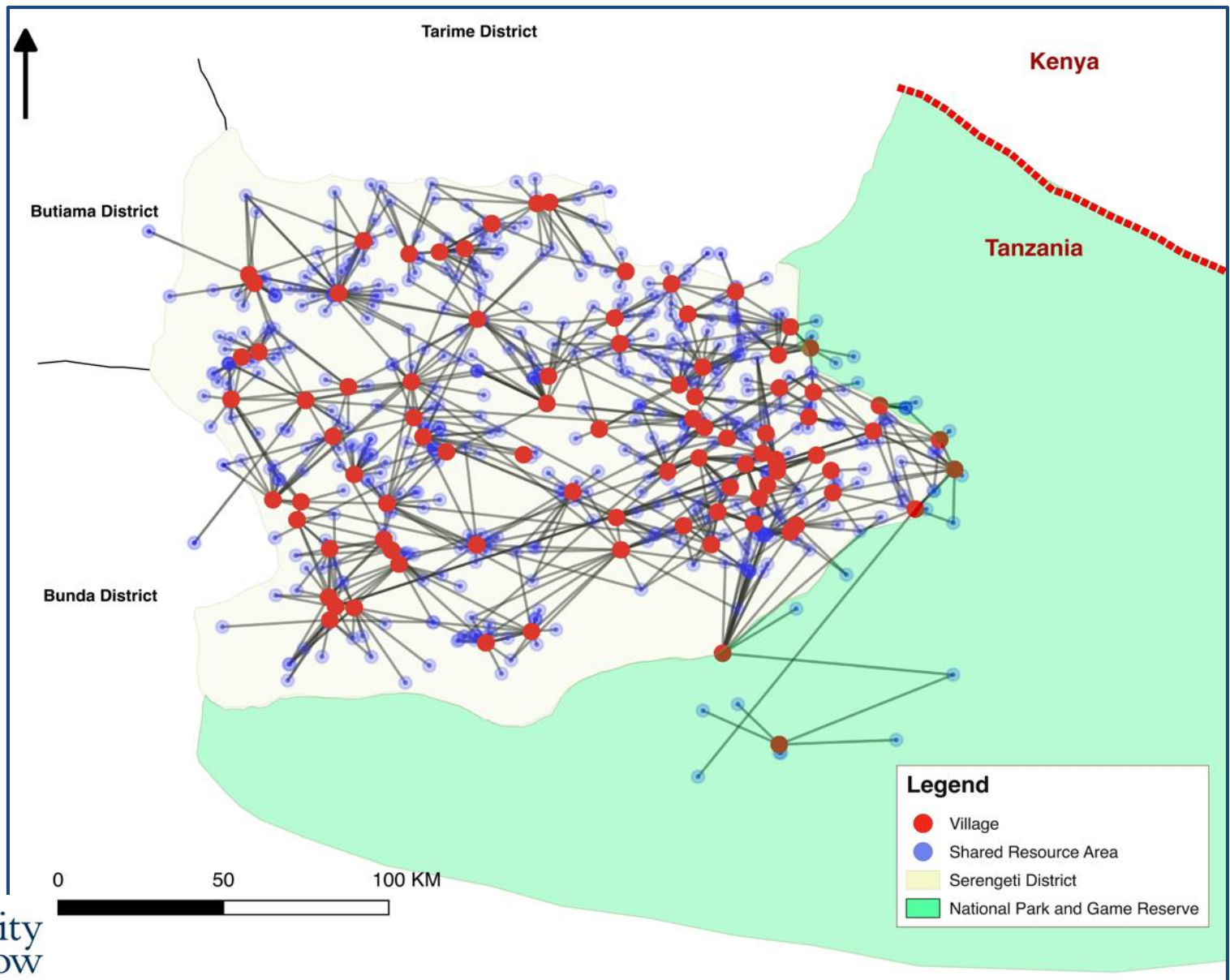


Methods

Community participatory mapping of livestock movement



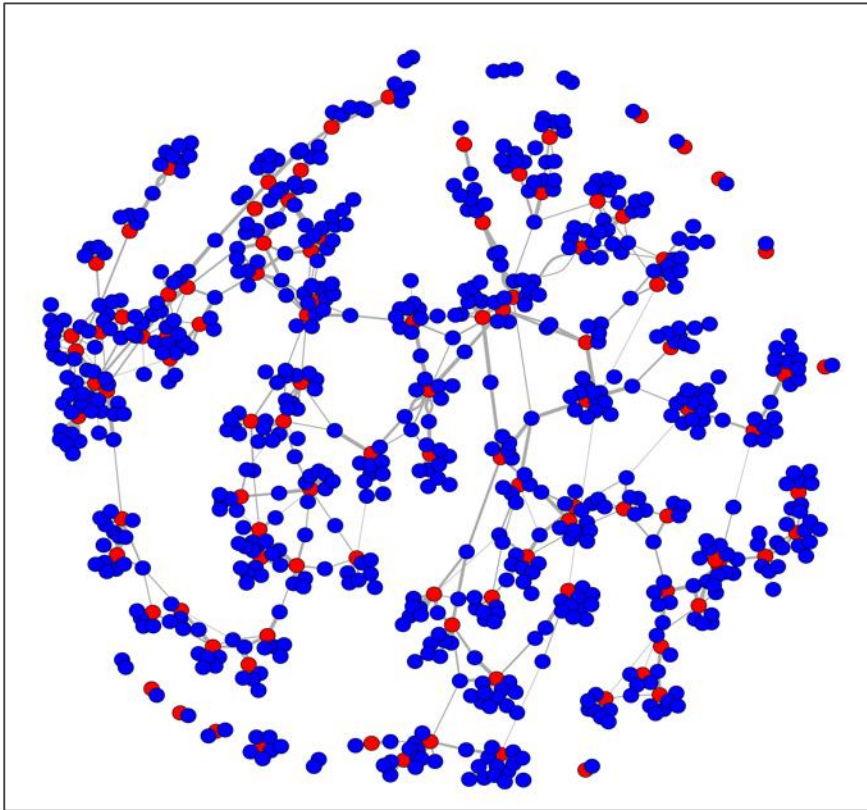
- Key livestock shared resource areas identified and mapped



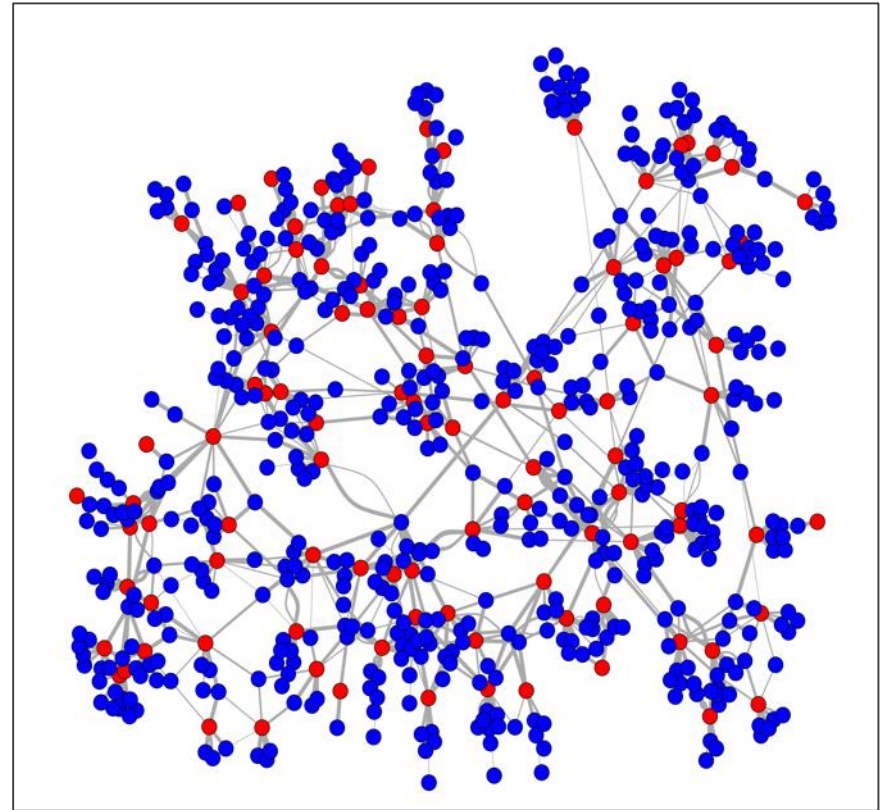
Results

- Village livestock connectivity at shared resource areas

Wet



Dry



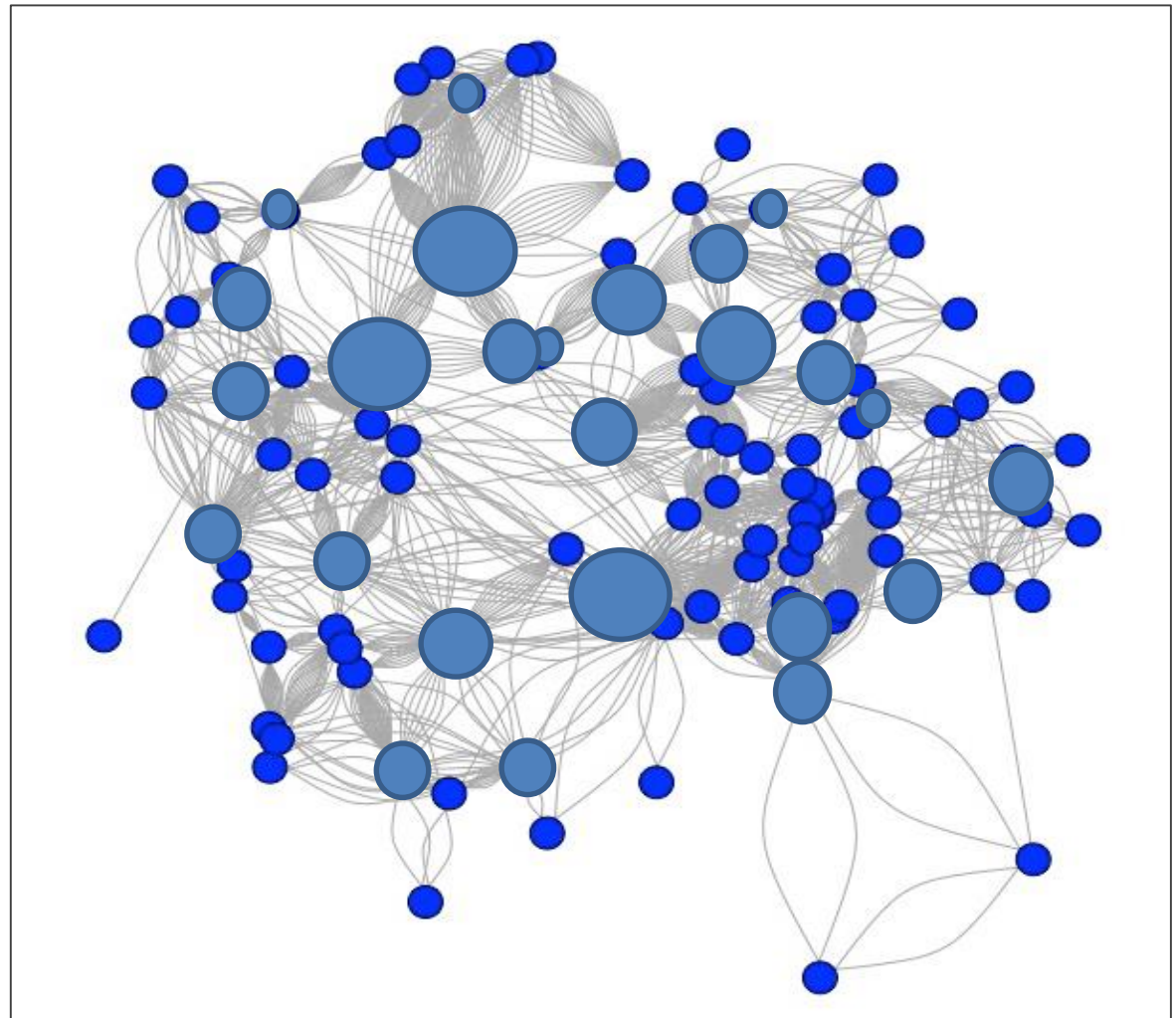
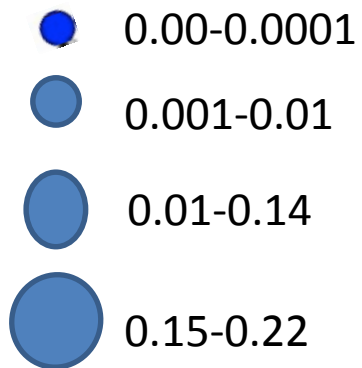
Results

- **Livestock movement network**

- village-to-village connectivity

- **Centrality measures identify key villages**

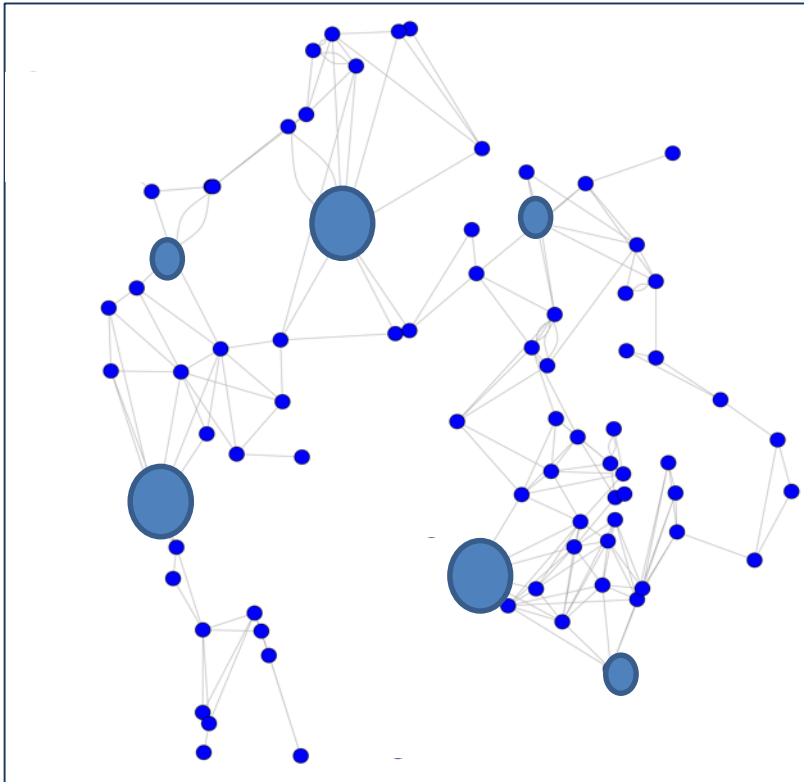
- “Betweenness” scores



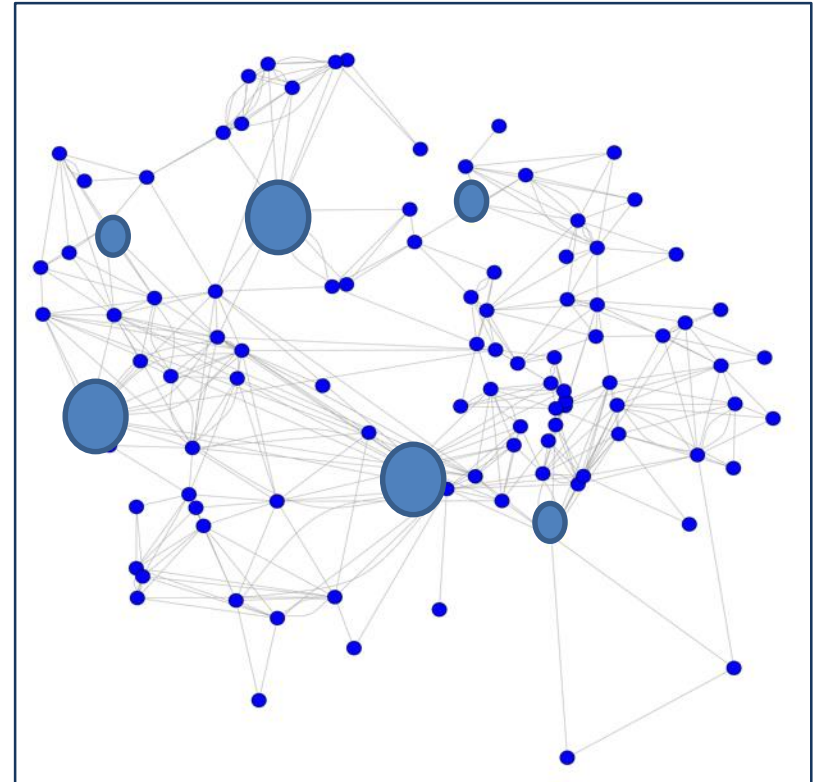
Results

- Seasonality of livestock movement network

Wet



Dry

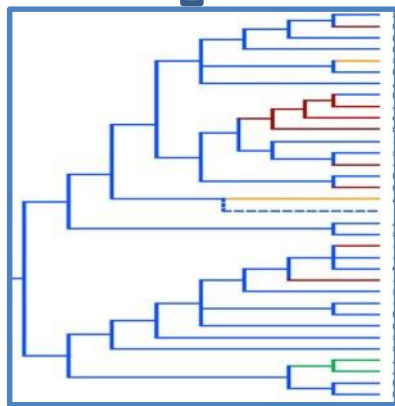


Conclusion

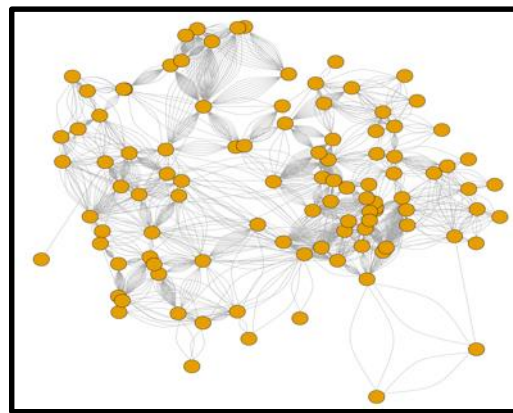
- Key shared resource areas and villages that sustain livestock movement networks identified
- These could be targeted for potential control strategies (e.g. vaccination) under different seasonal conditions

Next steps (~12 months)...

■ GPS Collaring



Virus transmission tree



Movement networks

Explain FMD
local spread
and inform
practical
control
measures