



Ethiopia Control of Bovine Tuberculosis Strategies

# Cattle movements and potential control strategies for bovine tuberculosis in an endemic setting

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# Introduction

• Bovine tuberculosis (bTB) is endemic in Ethiopia, resulting in

### Methods

• Between-herd transmission model of cattle movements based

- production losses to cattle owners and risk of zoonotic transmission to humans.
- Cattle rarely show clinical signs of bTB in the early stages of disease, meaning cattle trade can facilitate transmission over long distances in the absence of systematic testing of herds.
- Incorporating livestock movements in transmission models allows us to assess bTB transmission resulting from trade links in countries with limited animal movement data.
- on network data (Mekonnen *et al.,* 2019) of dairy cattle in Ethiopia
- Within-herd transmission model with field estimated transmission parameters (Conlan *et al.*, 2022)
- Scenarios: no intervention compared to vaccination
  - Direct vaccine efficacy: 25% (Srinivasan et al., 2021)
  - Indirect vaccine efficacy: 0%, 25%, 50%



## Results

- Bovine TB transmission and the impact of vaccination were influenced by the frequency and routes of animal movements between farms.
- Vaccination could be a useful tool in reducing the burden of bTB at animal and herd-level but would not be sufficient to eliminate bTB.

Gondar	Mekelle	Hawassa





# Conclusions

 Animal movements contribute to maintaining bTB in cattle populations and should be considered when evaluating disease transmission and potential control strategies.

 Given the imperfect protection offered by current vaccine candidates, vaccination is likely to only be useful as a supplement to other control strategies.

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