A DESCRIPTION OF THE DISEASE-ASSOCIATED MORBIDITY AND MORTALITY IN SEMI-INTENSIVE CHICKEN FARMS IN BANGLADESH, INDIA, AND VIETNAM

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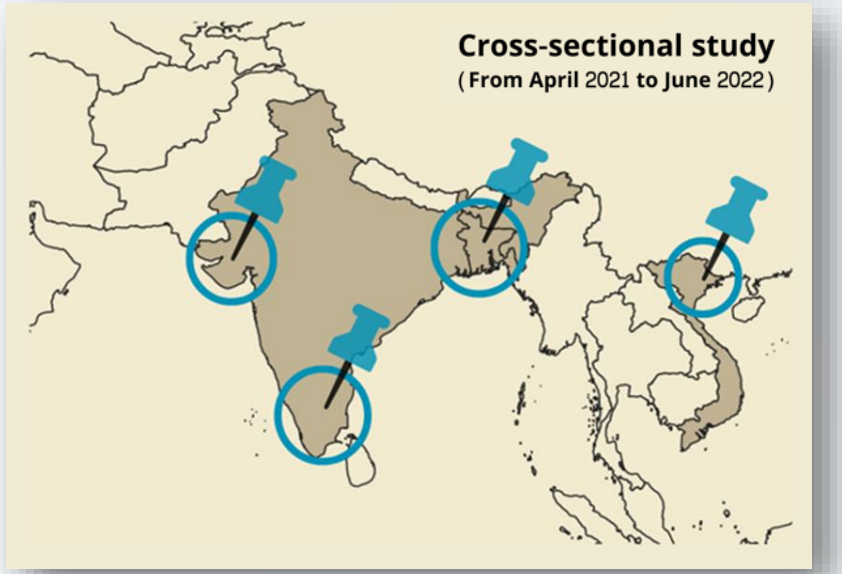
Introduction

- The rapid expansion of semi-intensive poultry production in South and Southeast Asia presents challenges for monitoring due to the lack of data collection and surveillance systems.
- This study aimed to investigate reported disease-associated morbidity and mortality rates on farms in the region.



Materials and Methods

- A cross-sectional study was conducted on 251 semi-intensive broiler chicken farms from Bangladesh, Vietnam, Tamil Nadu (India), and Gujarat (India) between April 2021 and June 2022.
- Farm characteristics were collected through site visits and interviews with all relevant personnel on the farm.
- Famers' reported morbidity and mortality rates were estimated and standardized per 1000 chicken-days, and statistical comparisons were carried out using student's t-test.
- Biological and environmental samples were collected to detect Campylobacter spp. (*coli* & *jejuni*), non-typhoidal *Salmonella*, and avian influenza virus (H5 & H9).

$$Mortality\ rate = \frac{1000 \times number\ of\ death(n_d)}{total\ number\ of\ chicken(N) \times (current\ age - start\ age)(days)}\ (/1000 bird.days)$$

$$Morbidity\ rate = \frac{1000 \times number\ of\ sick(n_s)}{total\ number\ of\ chicken(N) \times (current\ age - start\ age)(days)}\ (/1000 bird.days)$$

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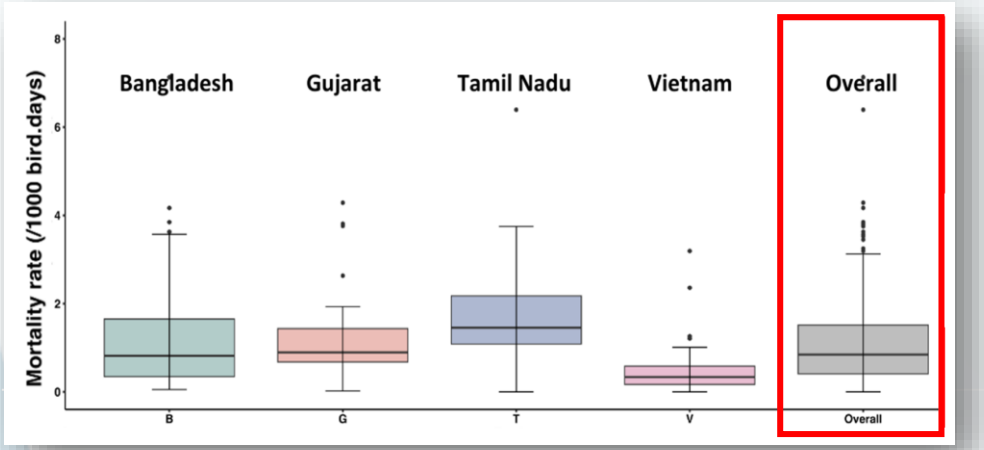
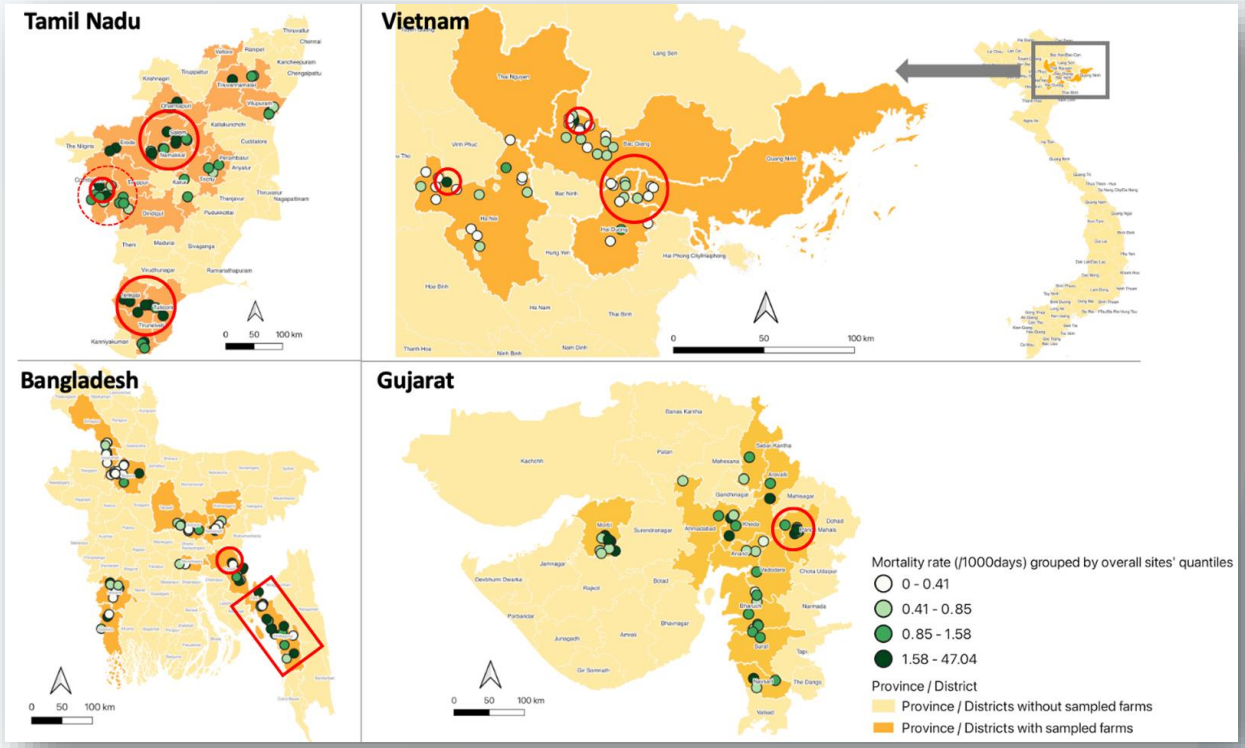
Results

- There was an average of 3,525 chickens on each farm (Range: 100 – 27,000) across all four sites.
- A wide range of morbidity and mortality rates was reported, with an overall average of 1.70 (per 1000 chicken-day; Interquartile Range (IQR): 3.17 – 13.75) and 3.95 (per 1000 chicken-day; IQR: 0.70 – 3.33), respectively.
- Among the sites, Bangladesh exhibited the highest morbidity rate, while Gujarat exhibited the highest mortality rate. Notably, Vietnam had the lowest morbidity and mortality rate across all four sites.





Conclusion

- Despite potential survival bias related to highly pathogenic avian influenza, recall bias from farmers, and disparities in farm sizes, this study highlights the variation in disease-associated morbidity and mortality rates within and between all four sites in the region.