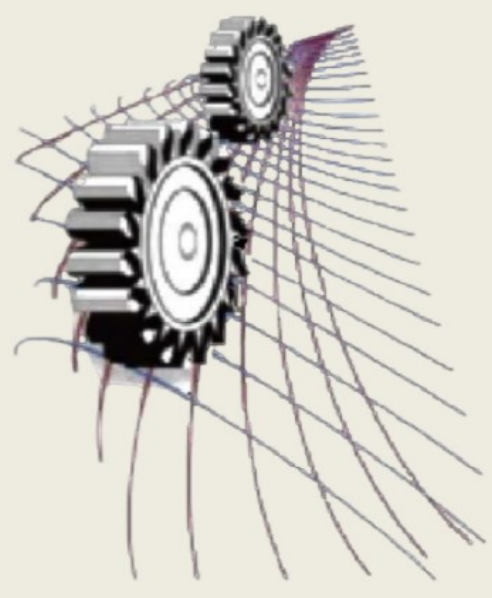
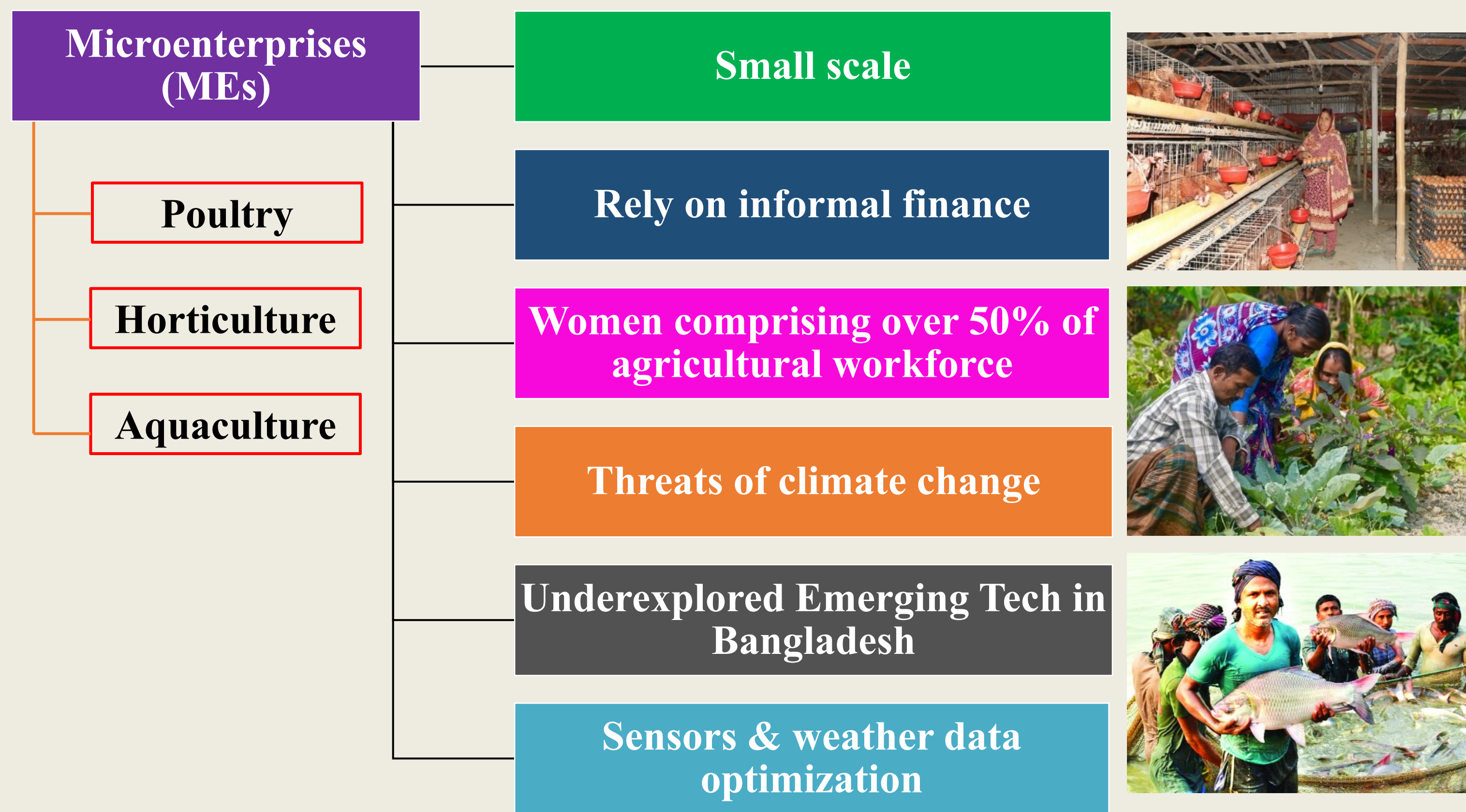




EVALUATING WATER, ENERGY, AND ENVIRONMENTAL CONDITIONS IN RURAL AGRICULTURAL MICROENTERPRISES OF BANGLADESH

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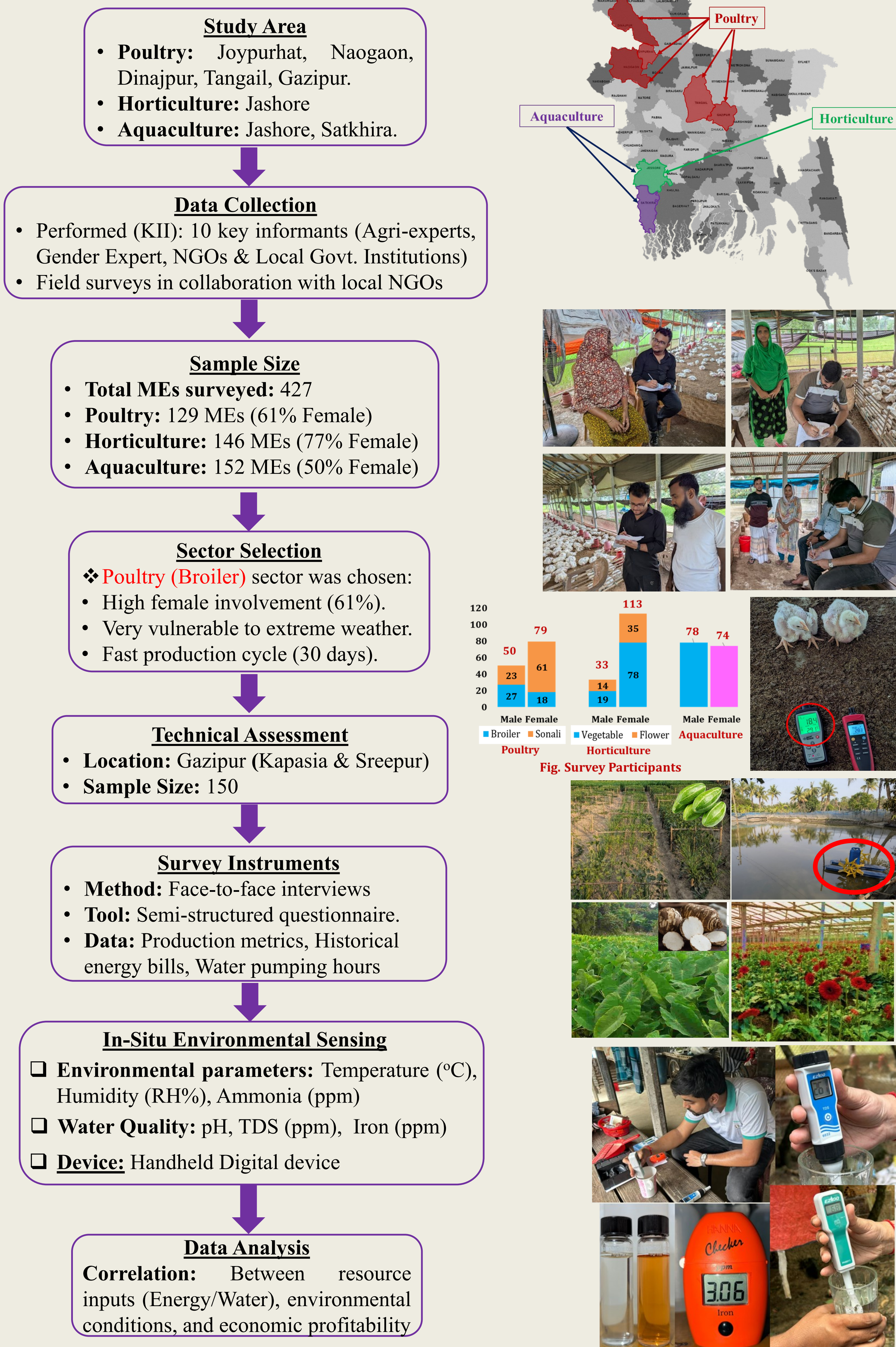
BACKGROUND AND MOTIVATION



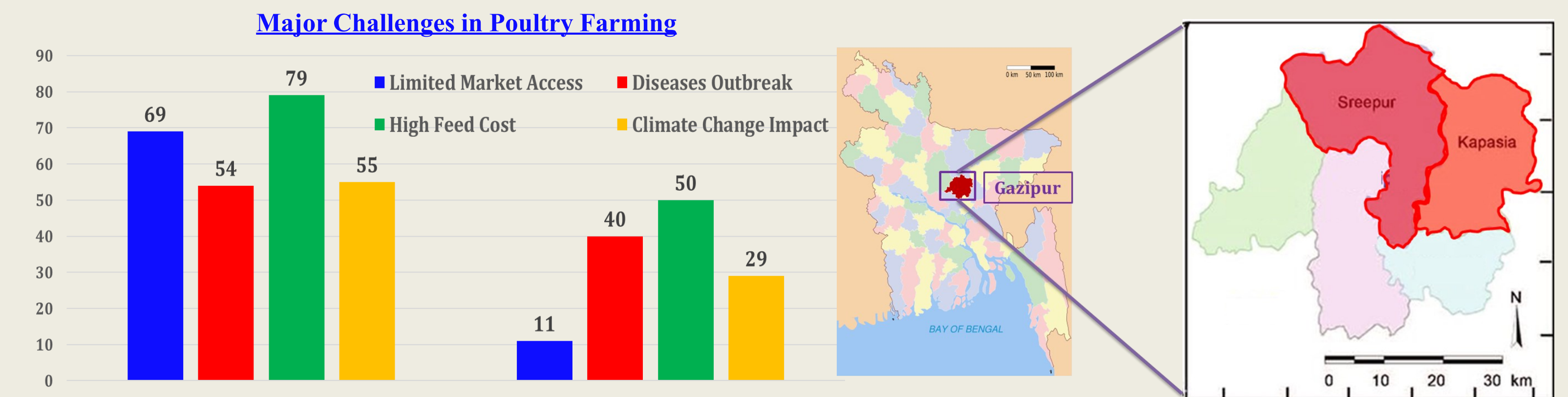
OBJECTIVE

- To assess the water use, energy demand, and environmental conditions- including water quality and in-shed climate parameters in agricultural microenterprises in rural Bangladesh.
- To examine how these resource and environmental factors relate to production performance and farmers' willingness to adopt weather-related technologies.

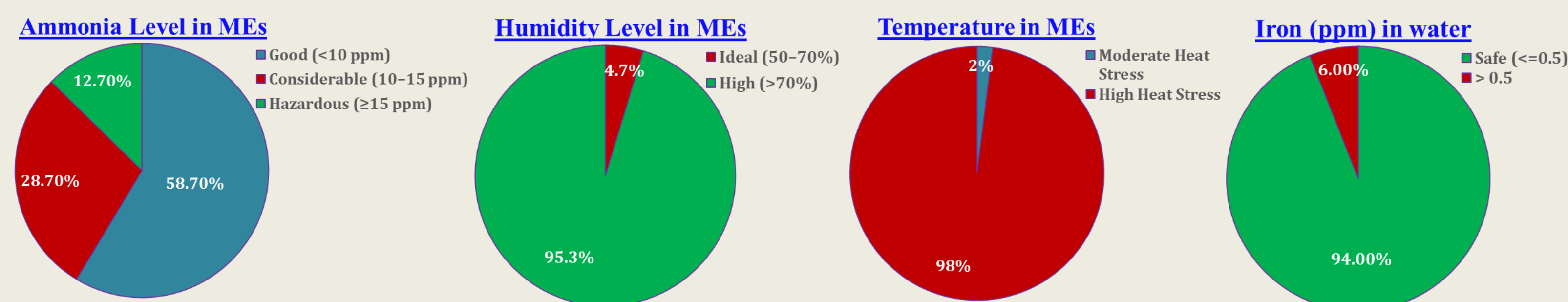
METHODOLOGY



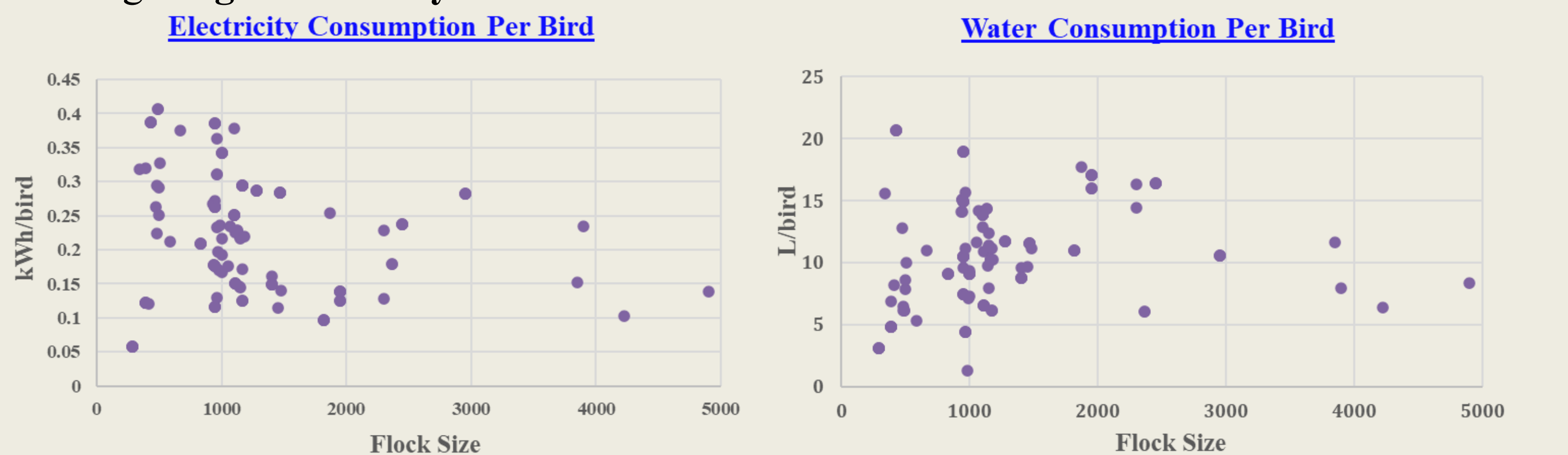
RESULTS & DISCUSSION



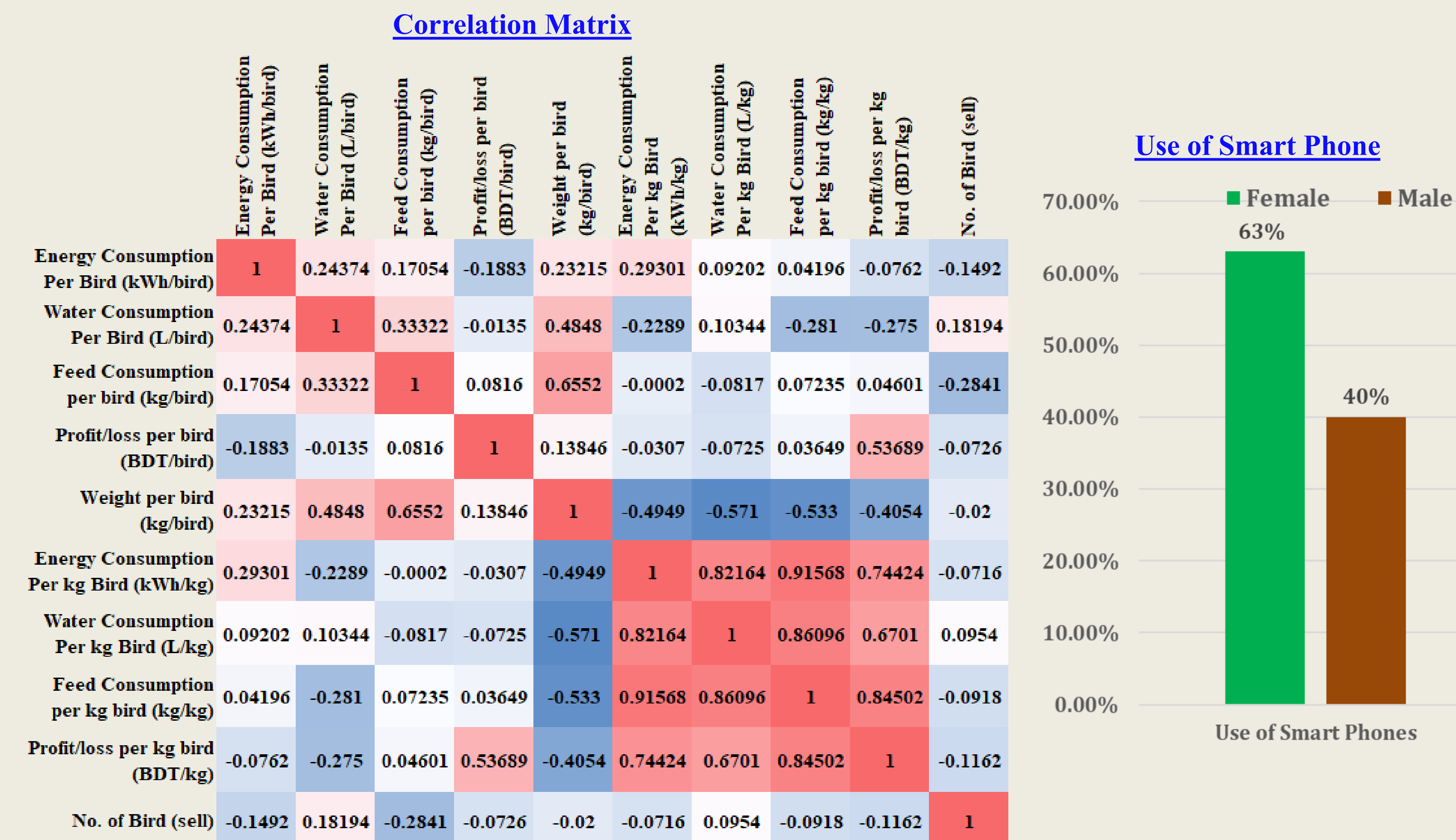
- **High broiler mortality due to heatstroke.** In winter, covered farms lead to NH₃ gas buildup.



- ❖ Nature is on the farmer's side here. Gazipur's water is **naturally fresh and low-saline**, though **slight alkalinity remains a fixable issue**.



- ❖ Majority of farms use resources efficiently, but a few outliers consume up to **3x more electricity and significantly more water per bird**.



- ❖ Resource-intensity indicators expressed per kg of bird (water, feed, and energy) show **strong positive correlations** with profitability per kg, suggesting that farms using more controlled and consistent inputs tend to achieve better economic performance.
- ❖ Conversely, the number of birds sold shows **weak correlations** with most variables, implying that farm size does not significantly influence per-bird efficiency.

- ❖ Majority of MEs are **not aware of weather-related technology**, but have **strong willingness to adopt it**.

CONCLUSION

- ❖ Most microenterprises **manage water and energy efficiently**, though a few high-consumption outliers show clear opportunities for savings.
- ❖ **Water quality is generally good**, but environmental stressors like heat and NH₃ remain major challenges affecting productivity.
- ❖ Farmers show **strong willingness to adopt weather-related technologies**, indicating **high potential for improving resilience and efficiency**.