Ex-ante impact of Marek's disease Mitigation on the Economic Viability of Small-scale Intensive Layer Production in Ghana

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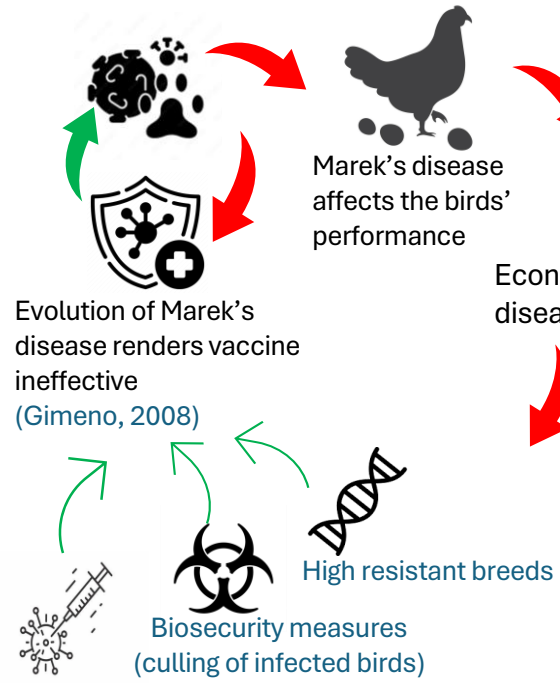
Introduction



3 Espoused mitigation strategies against Marek's disease (Gimeno, 2008; Liu et al., 2023)

Materials & methods

Approach

System dynamics model compartmentalised into 3 modules:

- Integrated production-epidemiological module
- Management decision module
- Financial module

Model specifications

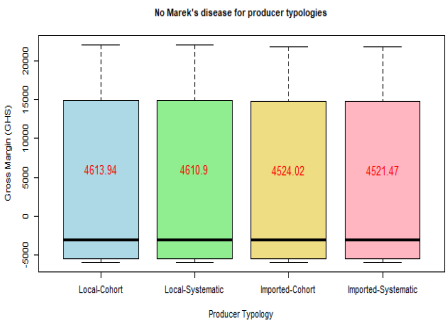
Resolution: Farm-level
Timestep: Daily
Simulation duration: 700 days
500-day-old chicks

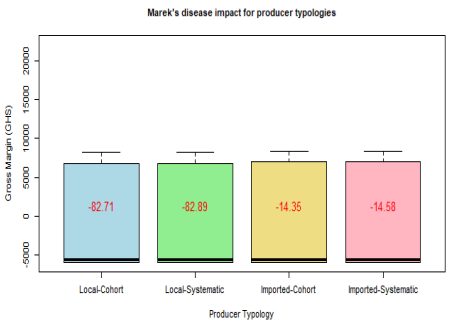
Data sources:

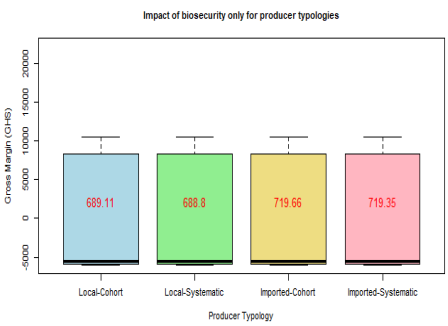
- Focus Group Discussion with poultry farmers
- Key informant interviews with value chain actors.
- Secondary data

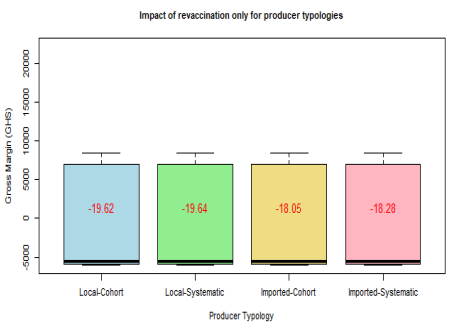
Objective: To examine the ex-ante impact associated with the implementation of mitigation strategies against Marek's disease on the economic viability of small-scale intensive layer production systems in Ghana

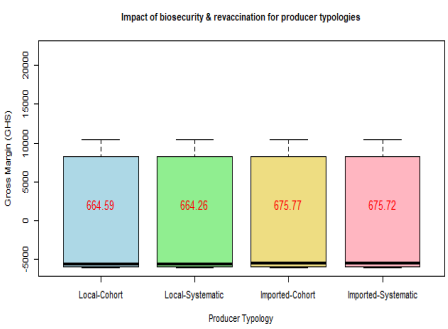
Results











- Without Marek's disease, local-cohort producer typology has the highest earnings, followed by local-systematic producer typology
- However, producers rearing local day-old chicks would be more affected than those rearing imported day-old chicks when there is a Marek's disease outbreak

- Biosecurity measures only is the most cost-effective
- Revaccination is cost-effective when combined with biosecurity measures

Conclusions

- Revaccination cannot be used as a substitute for the implementation of biosecurity measures
- Farmers do not have to practice revaccination if biosecurity measures are appropriately implemented