



# Benefits and costs of livestock production across scales: a case study of Dutch egg production

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# Benefits and costs of livestock production



- Multidimensional consequences of innovations in APS
- Trade-offs & synergies



# Across scales



- Measure effects of innovations at multiple scales
- Case studies: benefits & costs (B&C) & innovations

- Egg production in the Netherlands
- 24 interviews across scales
- Transcribed and coded in Atlas.ti
- Systematic analysis
  - SWOT, B&C, innovations
  - Follow-up survey





# Results - SWOT

## Strengths

- Innovative, skilled farmers
- Frontrunner in animal health, welfare and environment
- High production, quality & safety
- Efficient production & low carbon footprint
- Competitive and market oriented

## Weaknesses

- Limited farm income
- Limited integration, everyone for their own gain
- Fragmented, limited market power

## Opportunities

- Collaboration in the chain
- Demand for eggs with high standards
- Development of new housing concepts
- Eggs as meat replacement

## Threats

- Avian influenza
- International competition and imports
- Decrease in farms -> investment & knowledge
- Societal protests against (large) farms



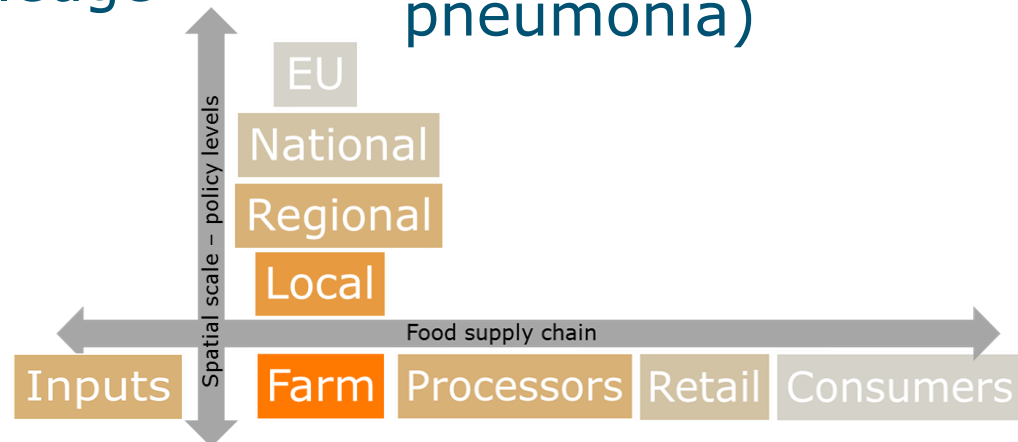
# Results – B&C

## Benefits

- Employment
- Food production
- Export / contribution to NL economy
- Innovation, knowledge and skills

## Costs

- Emissions & air quality: particulate matter, endotoxins
- Avian influenza
- Public health risks (e.g. pneumonia)



## 1. Animal health & welfare:

- In-ovo selection, poultry red mite, sensors

## 2. Housing systems:

- Emission reducing techniques, covered outdoor area

## 3. Economy:

- Farm and egg concepts with added value

## 4. Environment:

- Closed cycles (feed – manure)

## 5. Organisation:

- New collaborations in the chain





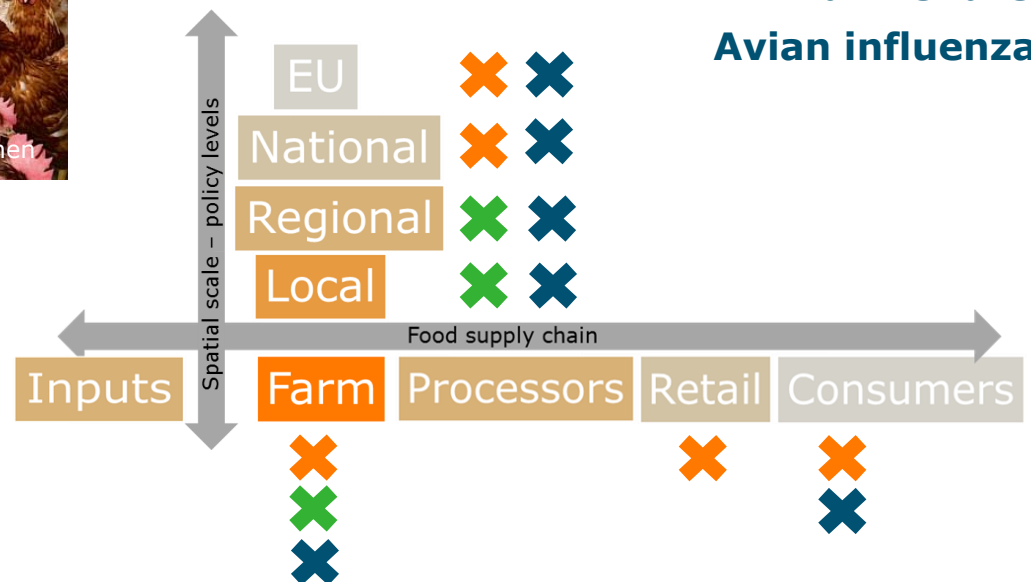
## Covered outdoor area



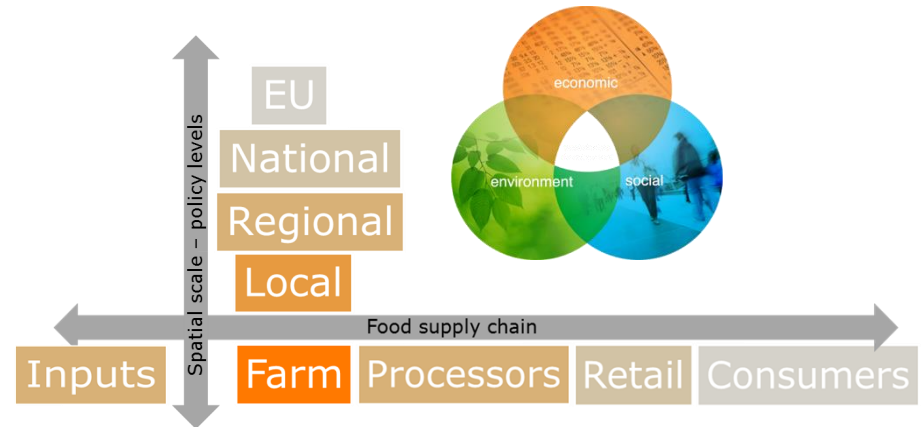
Emissions



Animal welfare  
Avian influenza



- Context dependency
- Next steps – modelling



- The impact of innovations need to be assessed across scales and dimensions
- Recognizing trade-offs and synergies

## More info:

- [evelien.deolde@wur.nl](mailto:evelien.deolde@wur.nl)
- Presentation: Delphine Neumeister (at 16:45)
- Poster: Aart van der Linden (nr. 19.13)



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