



Economic and societal aspects of poultry diseases

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European poultry sector

- In 2016 the EU produced 14.3 million tonnes of poultry meat and 7.8 million tonnes of eggs
- Poultry meat production systems are fairly efficient and well-controlled and this is important in order to maintain and improve the competitiveness of the sector in the international market
- Controlling production diseases and bird health is an important part of the competitiveness especially in intensive production systems
 - Only sporadic studies on the costs of poultry production diseases exists, saying for instance that
 -Necrotic enteritis can cost globally €2 to €5 billion per year
 - €3 billion is spent each year worldwide for coccidiosis prevention

The economic impacts of diseases on farms fall into four areas

Revenues and production foregone

Extra production costs

Saved production costs

Additional revenues

- The incidence, severity and costs of disease can vary by case

Preventive measures also incur costs, and they are incurred before observing potential benefits



Costs of adoption

- Additional labour needed
- Extra materials
- Effects on farm operations...



Benefits

- Lower veterinary and medication costs
- Improved yield
- Increased homogeneity
- Better product quality.....



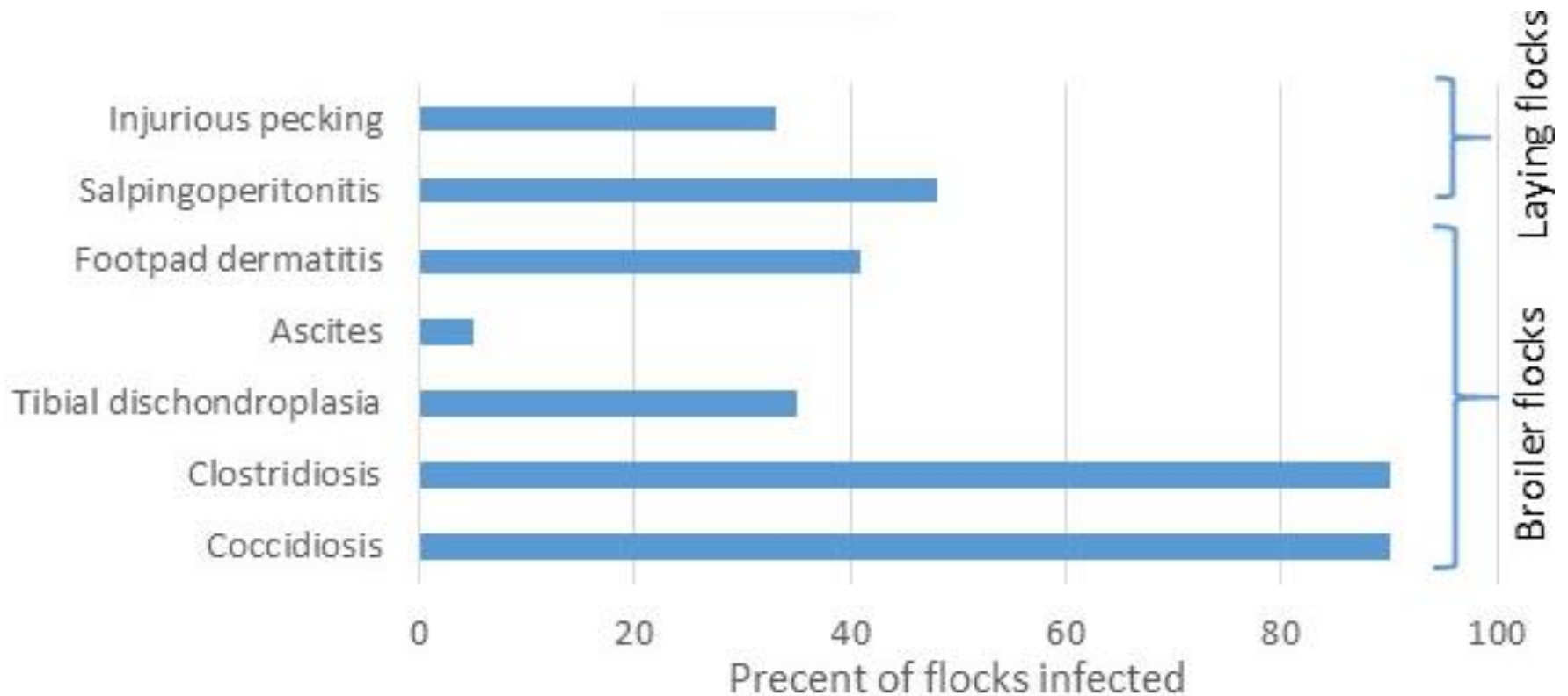
Good disease management decision making requires data

- Recognize the risks posed by various production diseases, their incidence and severity
 - Availability and efficacy of control and prevention measures
 - The economic impacts of diseases and benefits/disbenefits arising from the use of interventions
- Systematic review of 127 studies on selected production diseases
- Standard cost calculations and modelling disease interventions
- Consultation of 45 stakeholders (vets, transporters, abattoirs, processors, retailers) in Finland, Germany, Poland, Spain & UK
- Surveys conducted among citizens in five countries



How costly are production diseases?

The incidence of the production diseases in reviewed studies

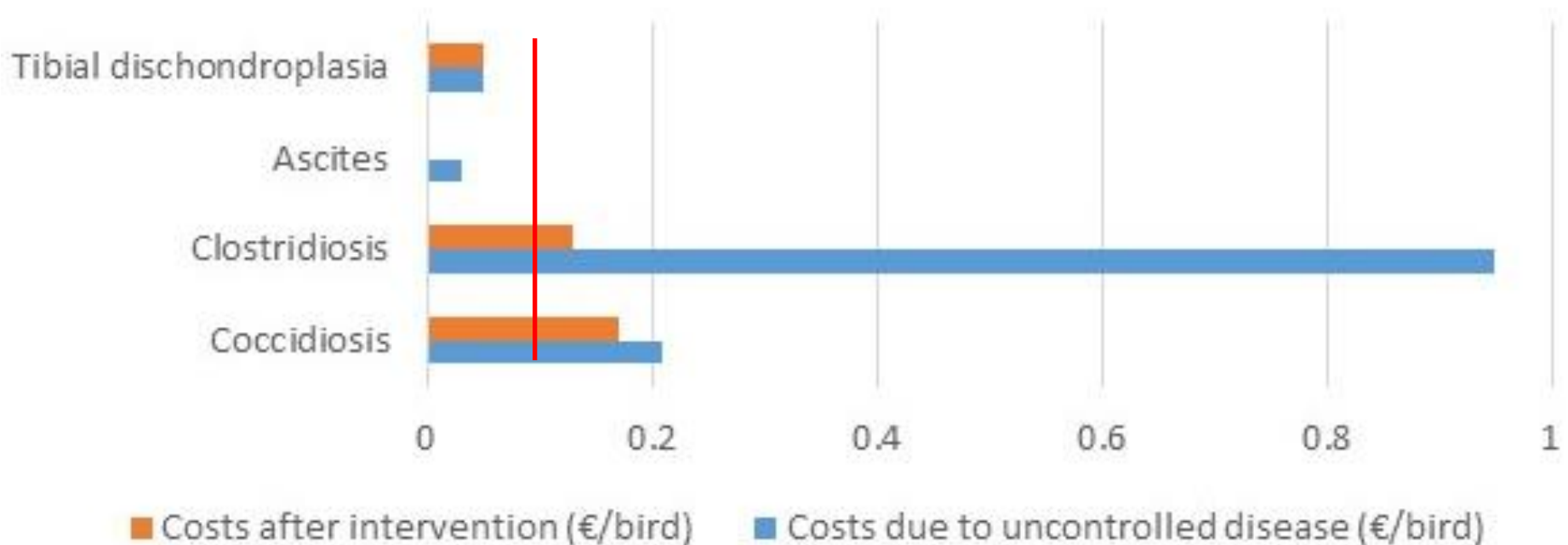


Note: Incidence = % of flocks with disease at a severity to cause economic losses

Impacts

- Application of physical impacts on bird performance (growth, yields, feed consumption, mortality, downgrades, treatment costs) to the standard broiler and layer cost models
- Excluded costs:
 - additional carcass disposal costs
 - additional vet/ medicine costs
 - labour costs for increased monitoring/inspection
- Losses are higher for laying hens because diseases are impacting over a longer production period

Economic losses (€/surviving bird) due to four controlled/uncontrolled production diseases in broilers



- Commercial broiler profit in 2013 was about 10 cents per bird
- Most efficacious interventions reflected (high-end of what can be achieved)

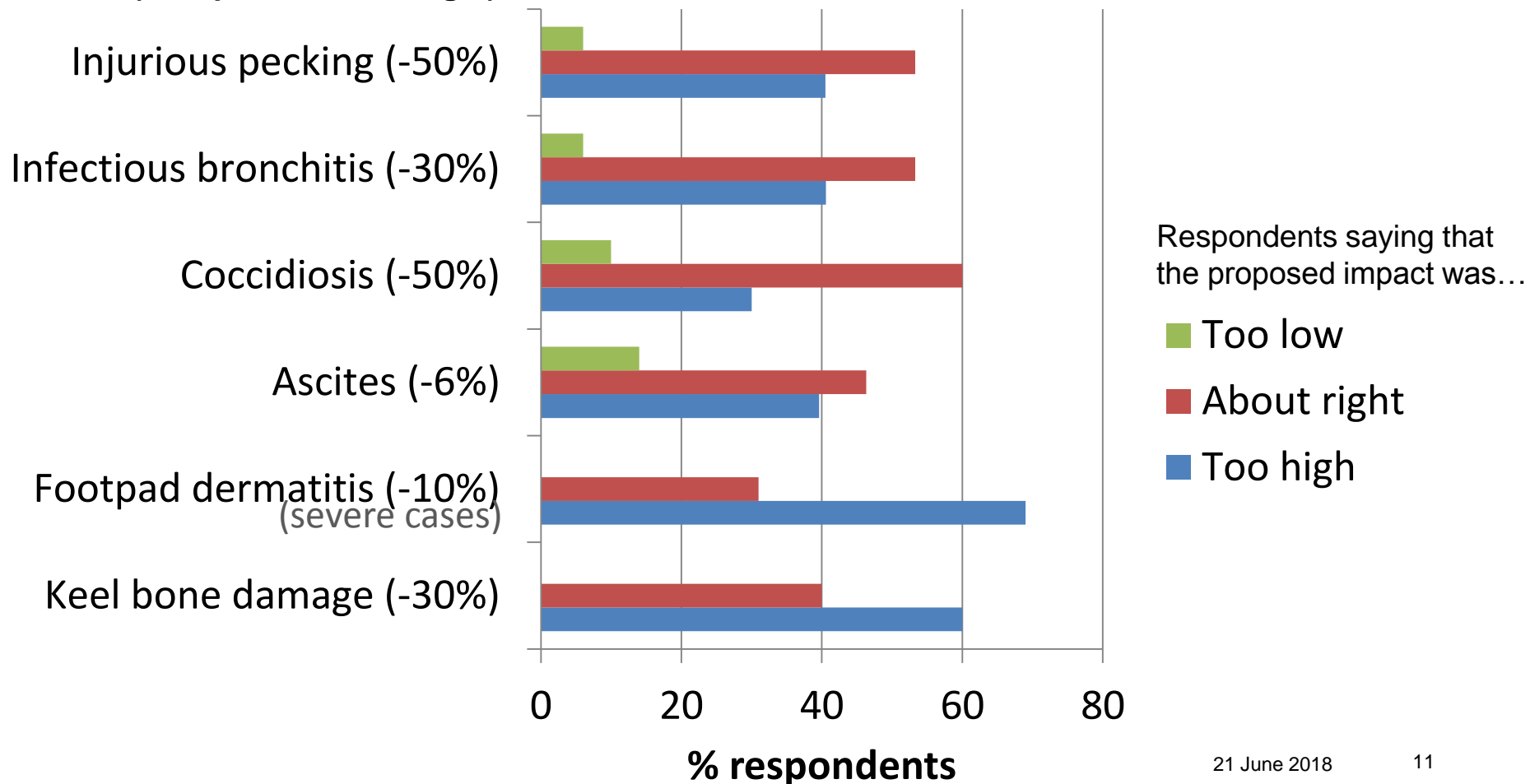
Economic losses (€/surviving bird) due to four controlled/uncontrolled diseases in laying hens



- Laying hens typically generated a margin of around €10 per bird

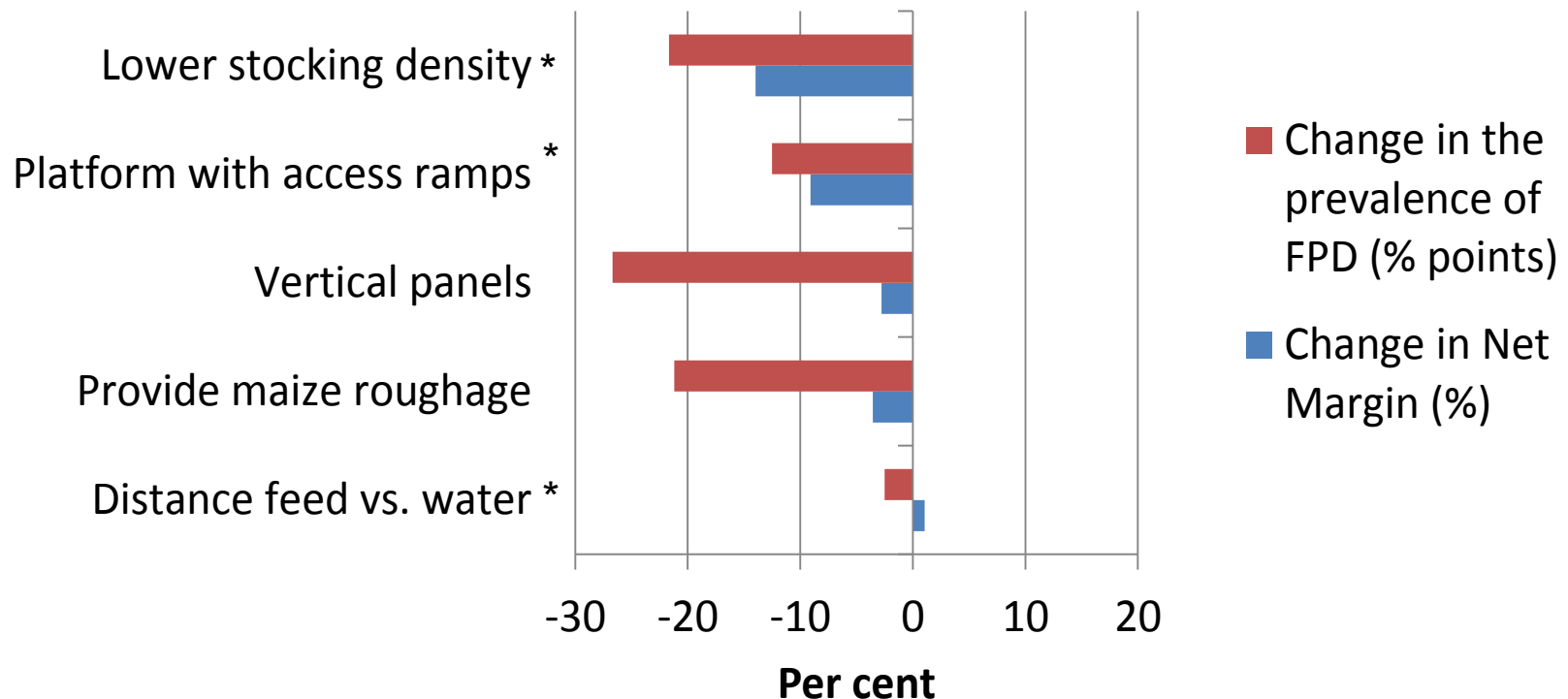
Did the stakeholders agree with the estimated economic losses?

Disease (% impact on net margin)



Modelling impacts of interventions to control foot pad dermatitis in broilers (€ per 10 000 birds unit)

- Preliminary results on measures to reduce the prevalence of FPD (€4546 per 10 000 birds unit, 35% prevalence)
- Some interventions* are attractive on €/kg meat basis



Which interventions do stakeholders prefer to control for production diseases (in general)?

Over 80% respondents preferred

- Enhanced biosecurity and hygiene
- Enhanced control of ventilation
- Enhanced litter quality
- Vaccination
- Adjustment to feed composition

40-80% respondents preferred

- Re-designed housing
- Changes in light regime
- Provision of play materials
- Adjust quantity of feed available

Less than 40% respondents preferred

- Preventive medication
- Use antimicrobials and other medicines
- Doing nothing (none preferred this)

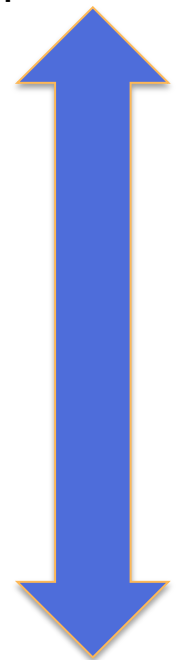
The public prefer proactive strategies

- Enhanced hygiene and disease prevention
- Conditions where animals can perform natural behaviours
- Housing that allows birds greater freedom to move
- Reducing the number of animals in a given area
- Improvements in housing design

(interventions listed in between are not shown)

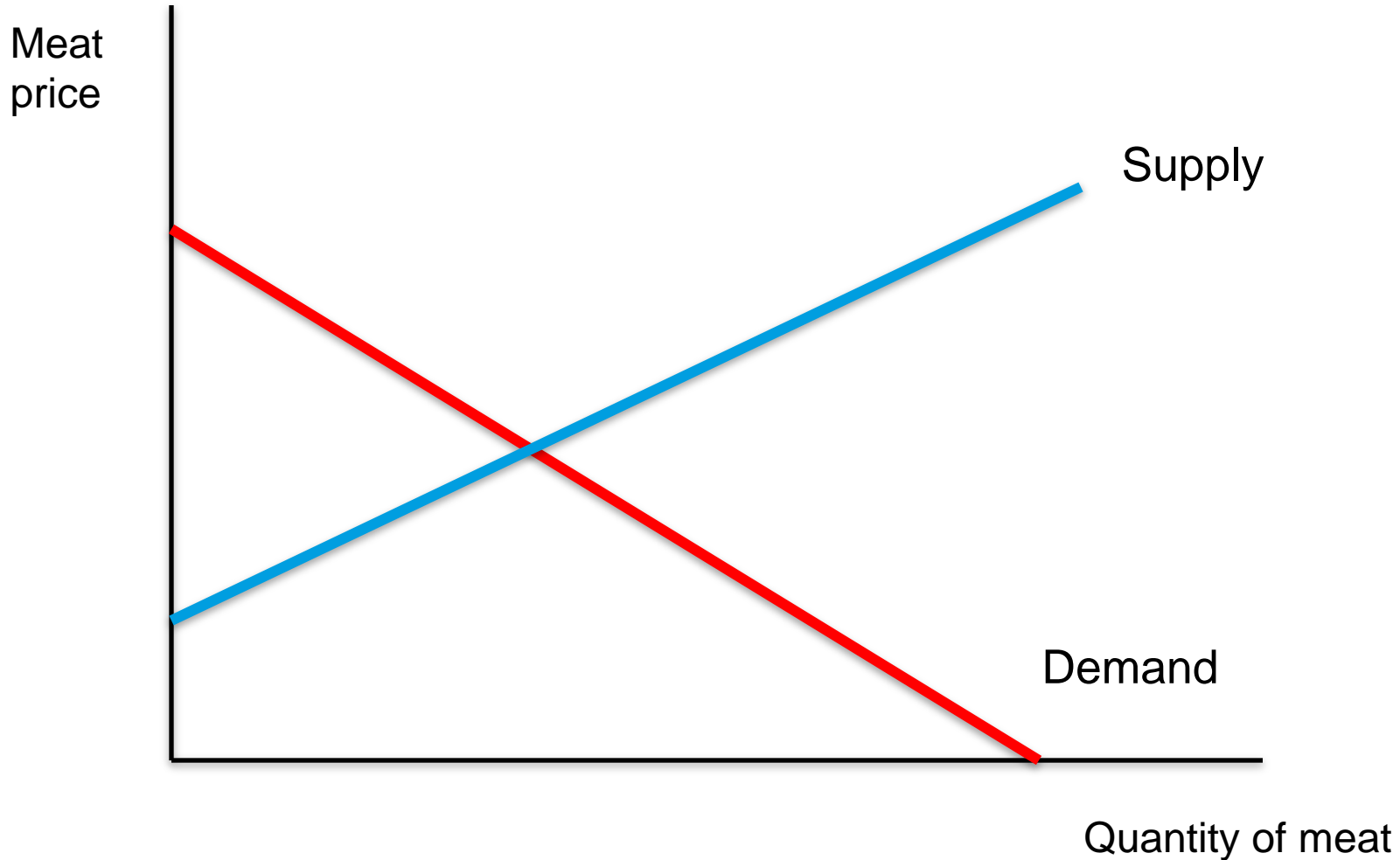
- **The use of vaccination**
- **Adjustments to the quantity of feed available**
- **Using antibiotics and medicines to treat sick animals**
- **Use of feed supplements e.g. probiotics**
- **The preventative use of veterinary drugs**
- **Doing nothing**

More
preferred



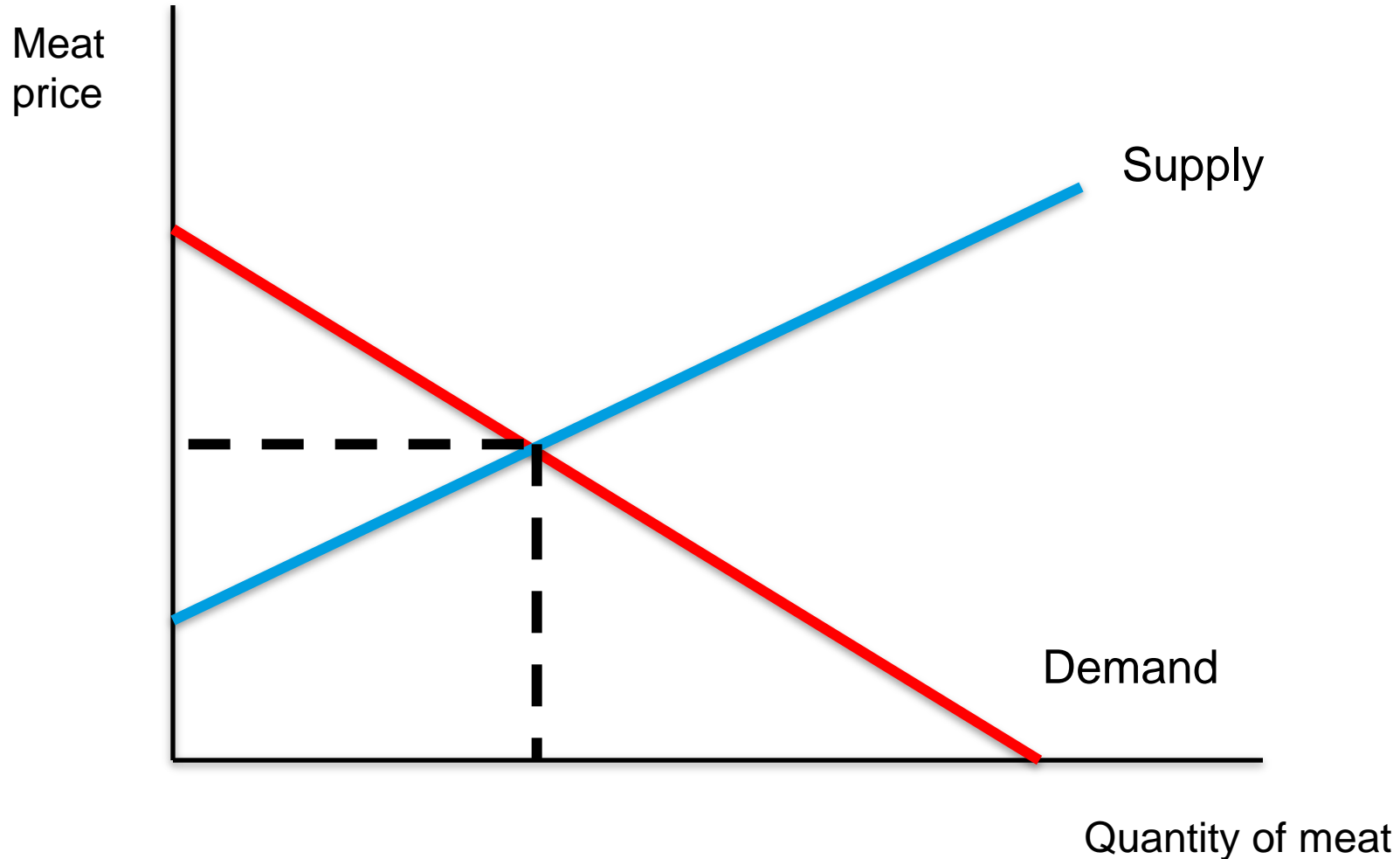
Less
preferred

Sector-level aspects



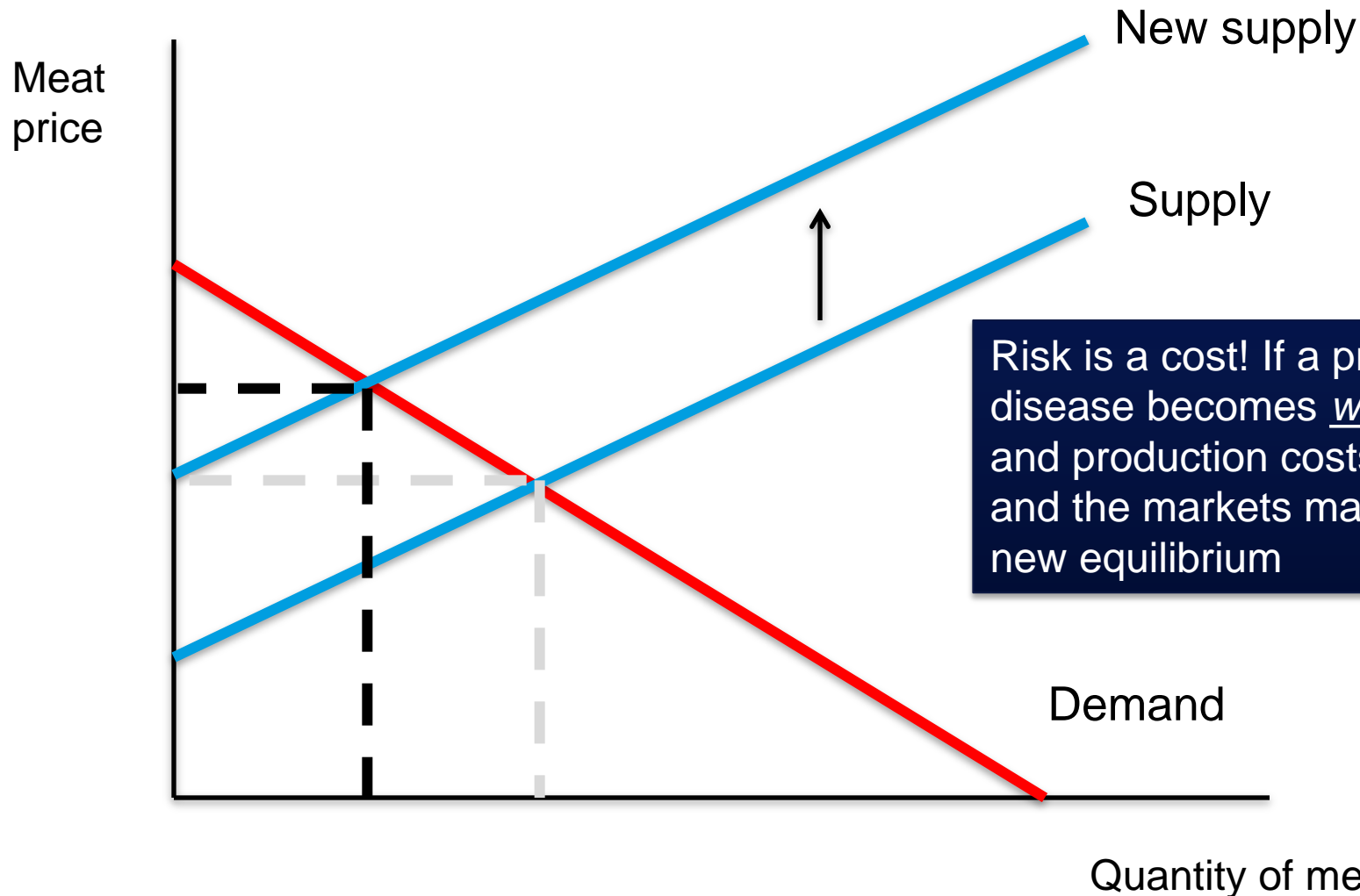


Market-clearing price & quantity





Wider economic impacts



Risk is a cost! If a production disease becomes wide-spread, and production costs may rise and the markets may seek for a new equilibrium

What about societal acceptance?

- Public acceptance is an important part of sustainability
- Benefits of intensive production systems (e.g. resource and cost efficiency) are acknowledged by the public, but they also have concerns in relation to animal welfare, antibiotic use and food safety
- The public appear to have little knowledge of production diseases and their mitigation strategies → Proactive provision of information
- Consumers associate animal friendly products with improved product quality, safety and healthiness
- The willingness to pay more for safer and animal-friendlier products varies
- Tendency to prefer natural and proactive interventions to control for production diseases — reactive and “treatment-based” interventions are viewed as less acceptable

Concluding remarks

- Production diseases can cause major economic losses to poultry farms if not controlled effectively
- Economically viable interventions exist
- Emphasis on preventive measures
- Current literature on economic impacts and economics of controlling production diseases is limited

Thank you for your attention

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