

ECONOMIC EVALUATION OF FMD CONTROL STRATEGIES

IMPLICATIONS FOR SCIENCE AND POLICY

Presentation at OECD conference 3th June 2013

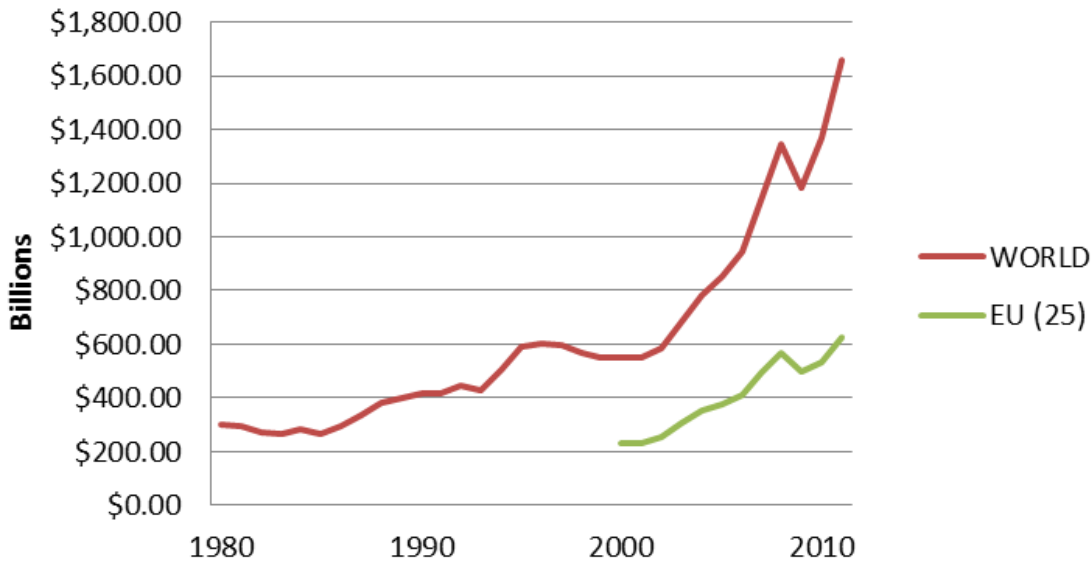
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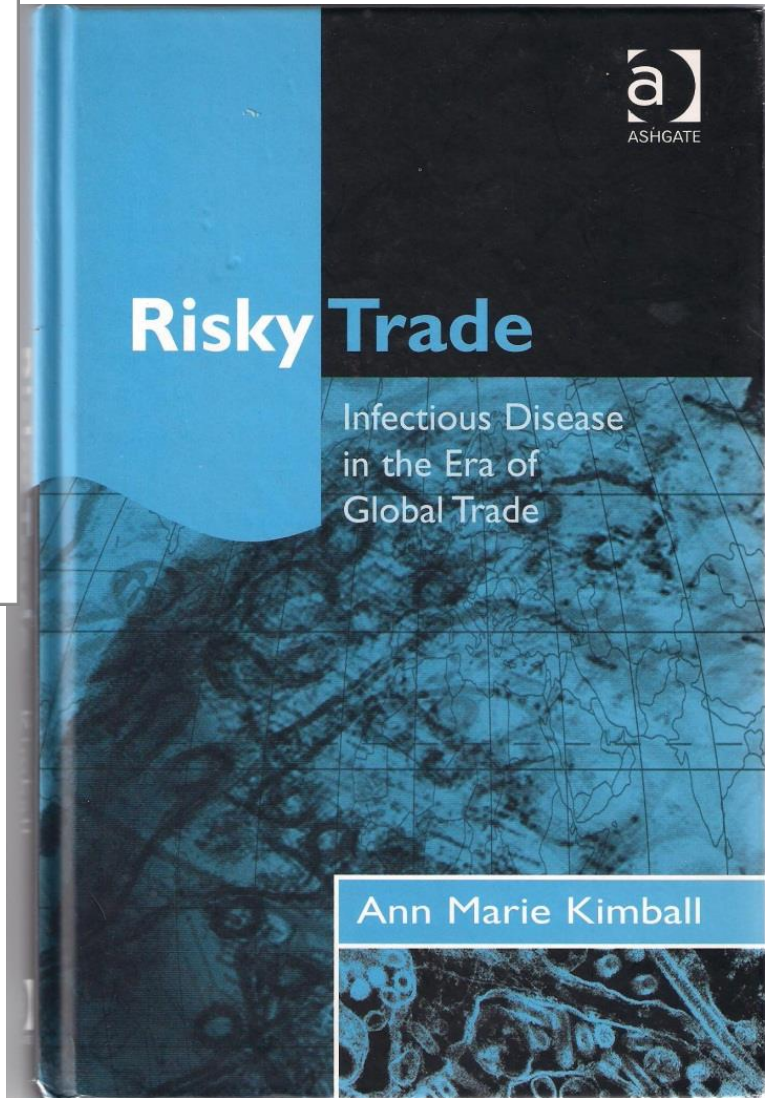


“the World has become a global market place”

Export of Agricultural products



Source: WTO, international trade statistics (2012)
Current prices



Export inside and outside the EU

Export value pig meat (2006) Million€			
	NL	DK	DE
total	1767	3333	2458
intra EU	1543	2115	2200
extra EU	224	1218	257
fraction extra EU	13%	37%	10%

2001 FMD outbreak in NL



- 26 outbreaks were detected.
- All susceptible animals on approximately 1800 farms were vaccinated. All farms subsequently were depopulated.
- In total, approximately 260,000 animals were killed.

(Bouma, et. al., Prev Vet Med. 2003, 20; 57 (3) :155-66.)

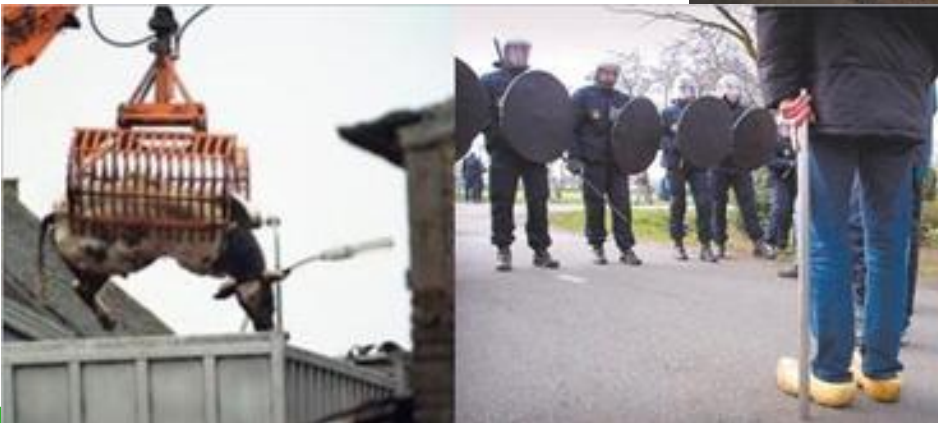
Costs of the 2001 FMD outbreak in NL

Costs born by
government (or PPP) &
60% by EU

- Total for Dutch society: €900 million or 0.3% GNP
 - Direct costs: € 90 million
e.g. enforcement costs, compensation of culled animals,
screening etc.
 - Indirect and export market losses: € 320 million
 - Other parts of the livestock chain: € 215 million
 - Tourism and recreation sector: € 275 million

Source (CPB 2001 cited by Huirne et al., 2002)

Social concern-The reaction of stakeholders/ public and trade partners



Policy change from culling toward vaccination to live

- What has changed in the NL?
 - No more images of large scale culling of animals
 - Society is closely monitoring what is happening
 - No welfare slaughter with destruction but welfare slaughter with animals and products made available for consumption
 - Vaccination to live strategy



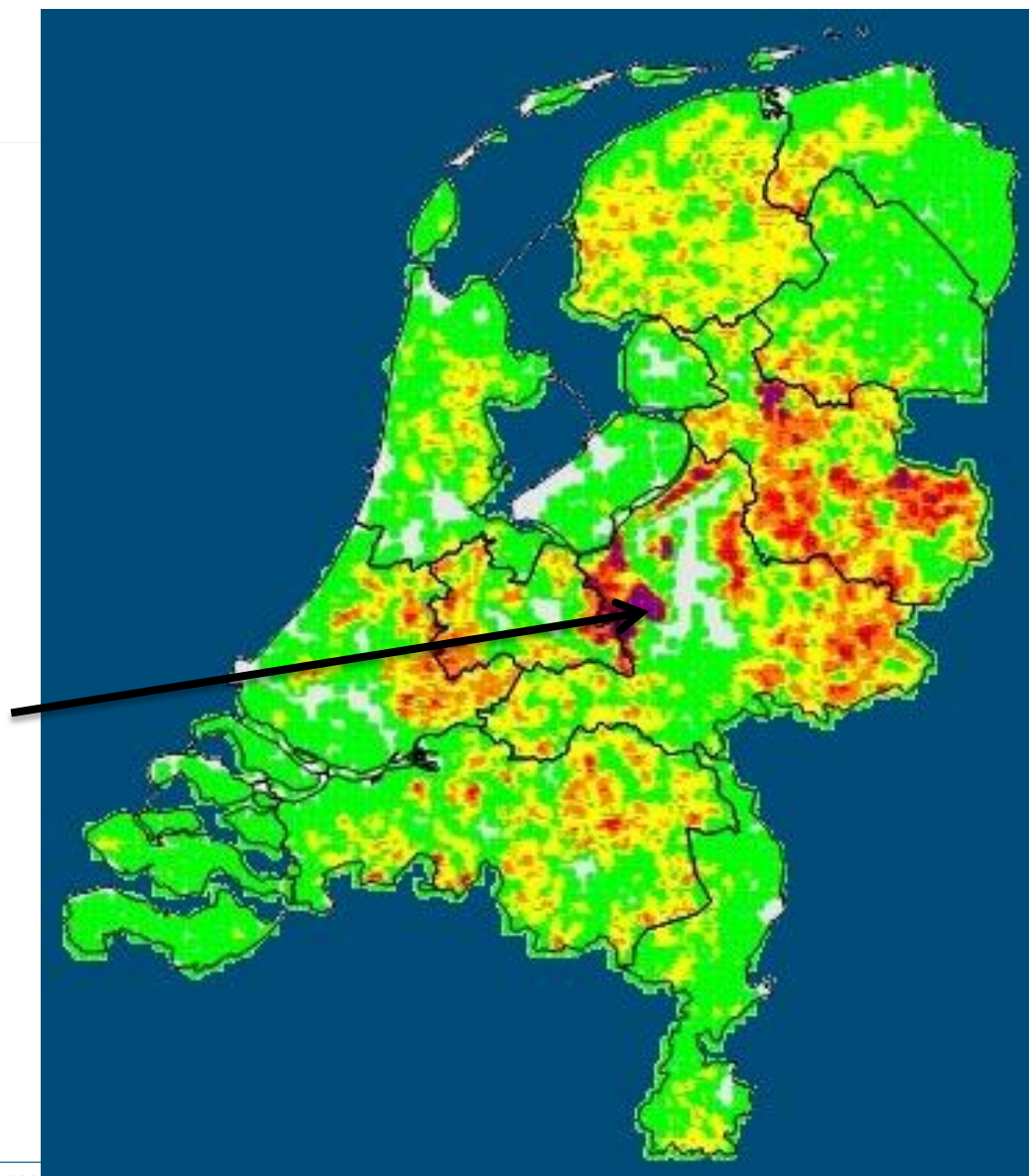
Definition of investigated policy options / Control strategies:

The following strategies were evaluated:

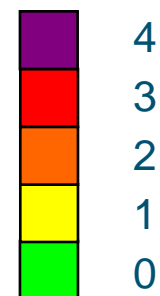
1. EU basic strategy: EU minimal measures
2. EU basic strategy + Culling in 1 km around infected farms
3. EU basic strategy + Vaccination with radius of 2 or 5 km around infected farms (culling 1st week)

- Epidemiological and economic evaluation to support decision making:
 - WHAT STRATEGY TO CHOOSE?

Start of the
outbreak



farms/km



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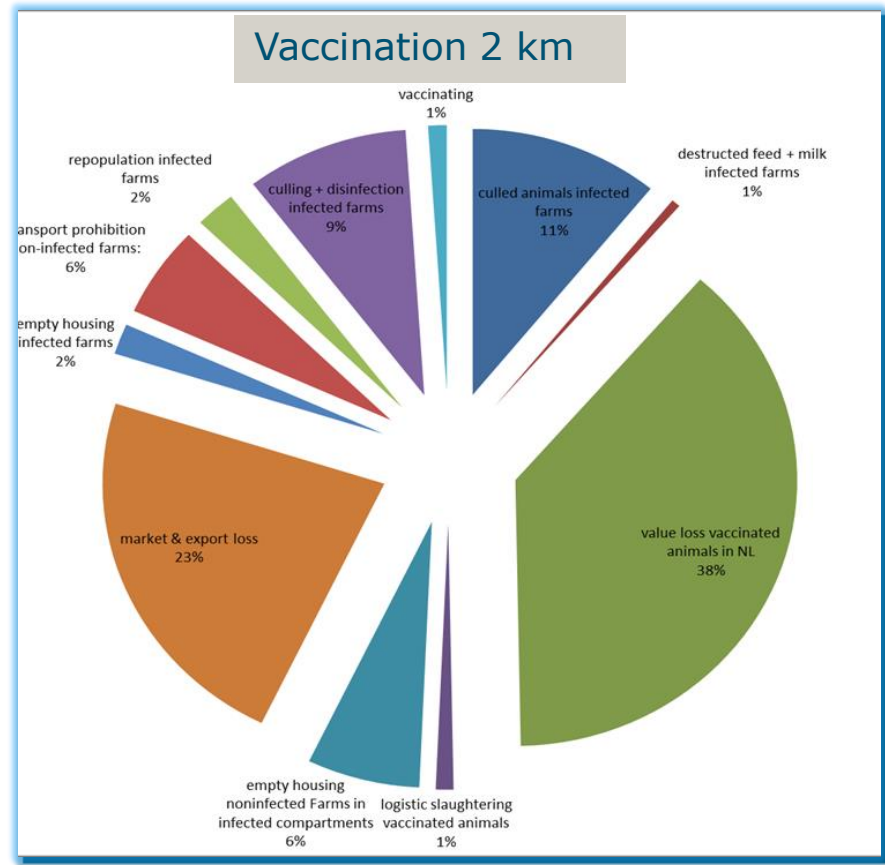
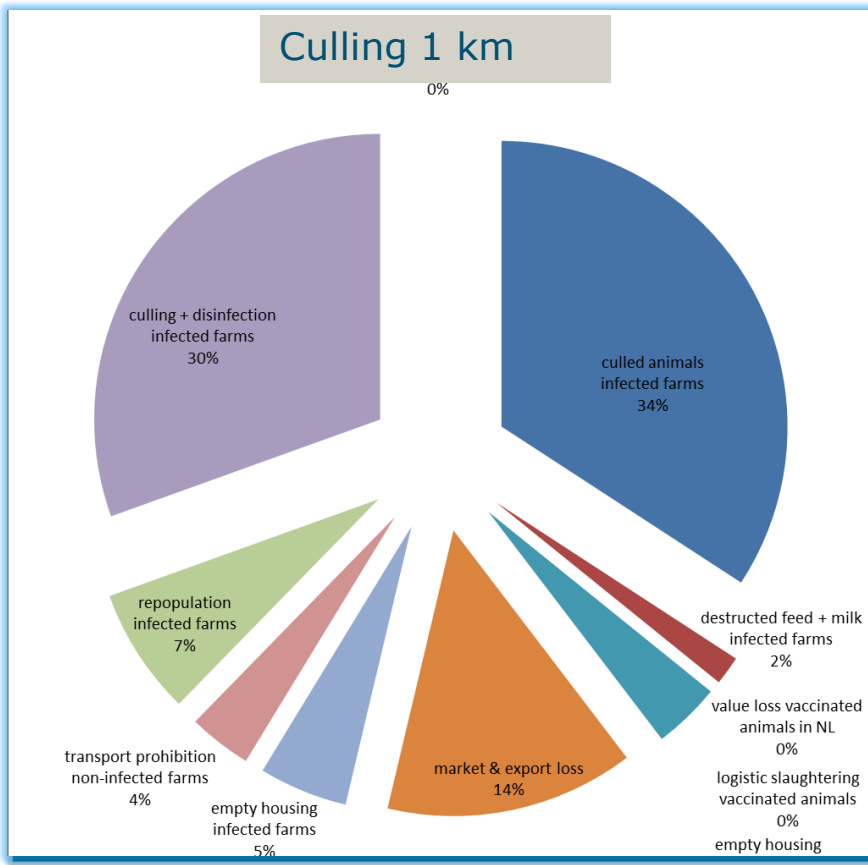
Economic assessment

- Aspects considered:
 - - Economic calculations
 - Acceptance by stakeholders

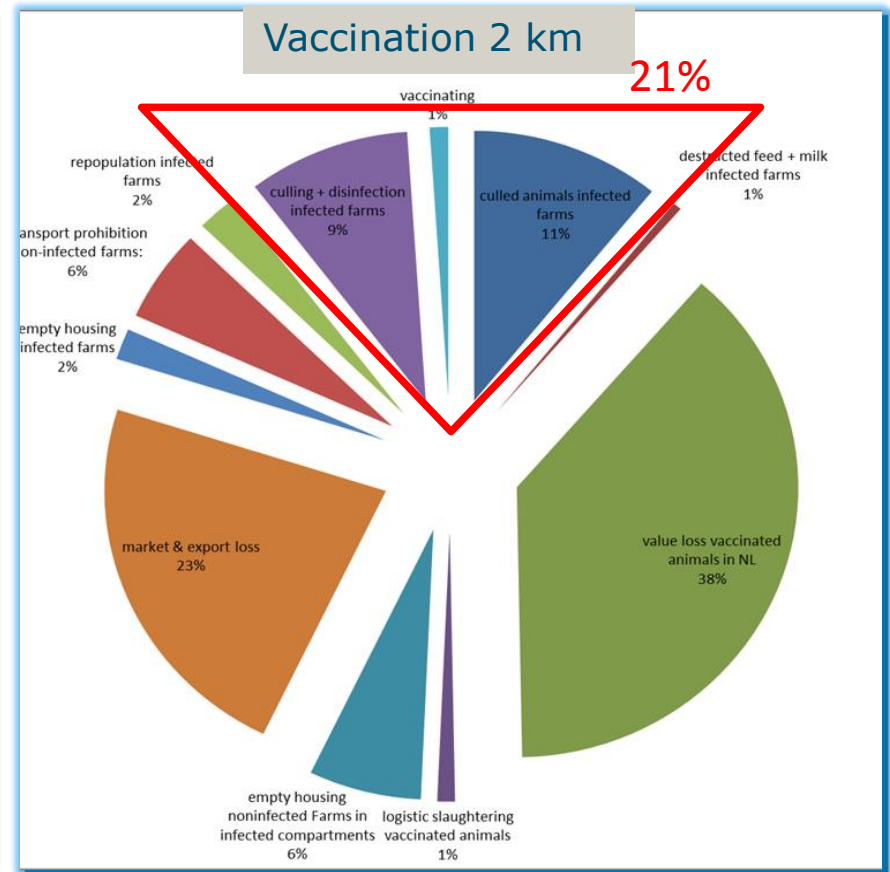
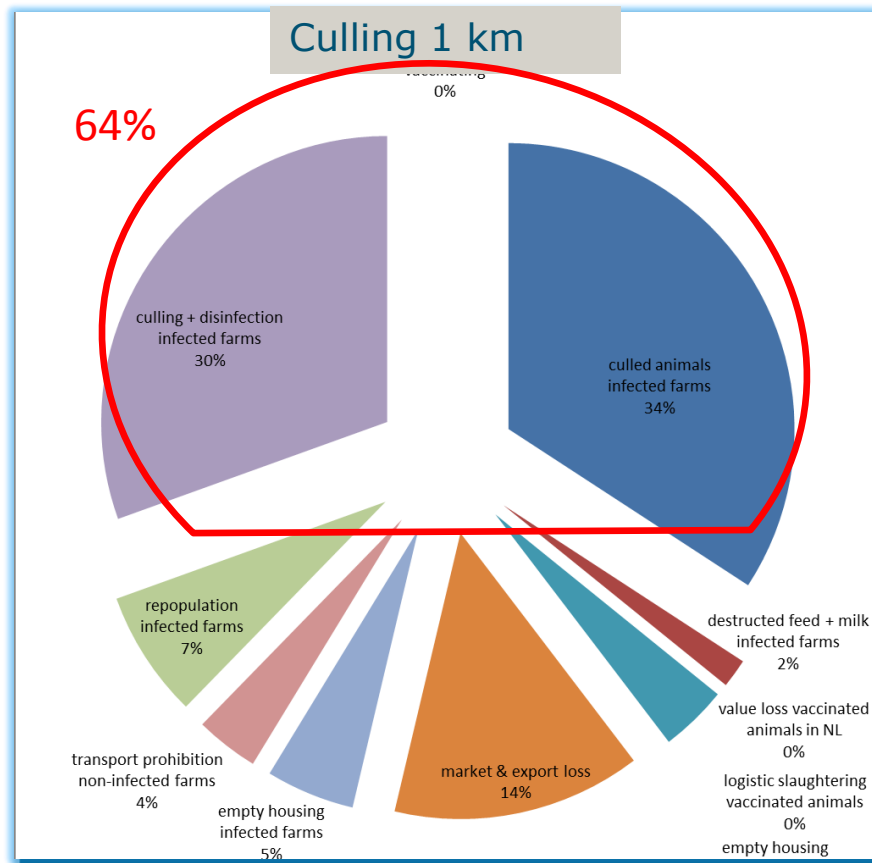
FMD PDLA (>4 farms/km²): Gelderse vallei

	NUMBER OF CULLED FARMS		LAST WEEK OF DETECTION		TOTAL COSTS INCL COSTS OF OPERATION (in M€)	
	50%	CI(5%-95%)	50%	CI(5%-95%)	50%	CI(5%-95%)
cul1	971	(206-3217)	9	(4-15)	236	(94-615)
vac2	260	(70-707)	10	(5-17)	227	(99-526)
vac5	230	(68-571)	6	(4-11)	228	(106-504)

Distribution of costs (median DPLA)

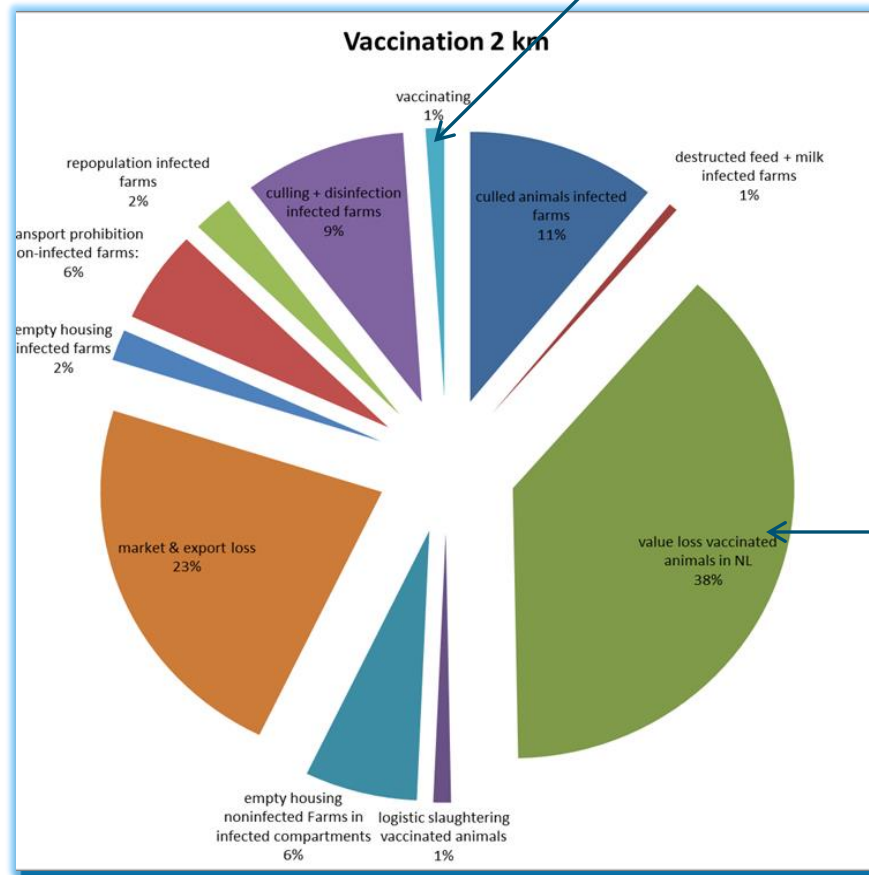


Distribution of costs



Distribution of costs

Vaccination costs 1%



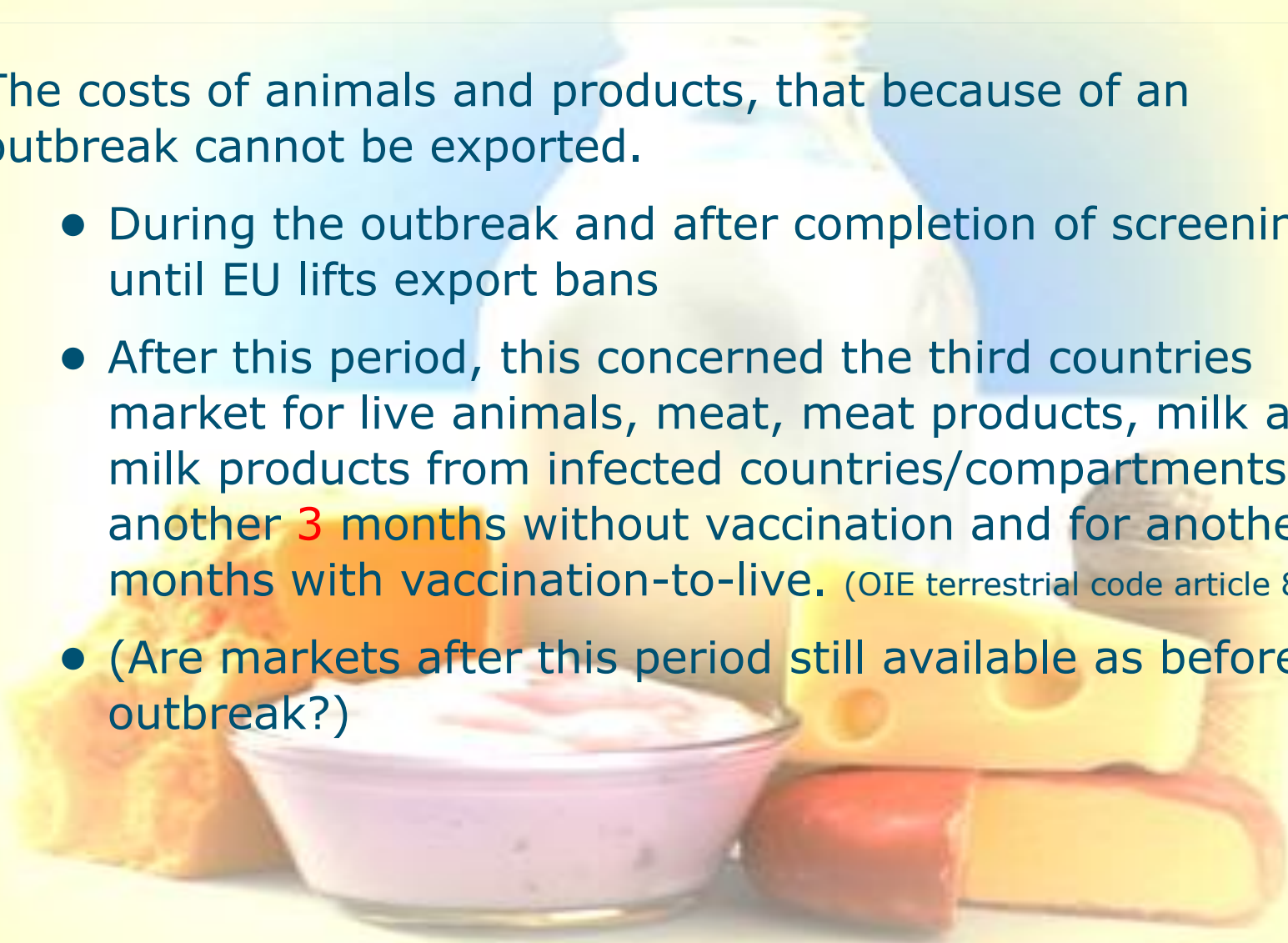
Value loss vaccinated animals 21%

Estimated Average value loss due to lower revenues and logistic processing of vaccinated animals (in € per vaccinated animal).

Category	Value loss
Dairy cows	450 €/ animal
Young stock	5 €/ animal
Veal calves	550 €/ animal
Other cattle	26 €/ animal
Sows	260 €/ animal
Fattening pigs	50 €/ animal
Sheep	34 €/ animal

Vaccination to live: Export market losses

- The costs of animals and products, that because of an outbreak cannot be exported.
 - During the outbreak and after completion of screening until EU lifts export bans
 - After this period, this concerned the third countries market for live animals, meat, meat products, milk and milk products from infected countries/compartments for another 3 months without vaccination and for another 6 months with vaccination-to-live. (OIE terrestrial code article 8.5.8)
 - (Are markets after this period still available as before the outbreak?)



Conclusions

- Economic evaluation of different FMD management options:
 - should to be based on universal principles,
 - need to be tailored to local circumstances in discussion with stakeholders,
 - is likely to result in different solutions for different countries e.g. due to difference in livestock population density, trade patterns or acceptance of product originating from vaccinated animals, and
 - should be supported by epidemiological and economic models
 - SHOULD BE PART OF THE DECISION MAKING PROCESS.

Implications for policy and research

- Research indicates that vaccination-to-live is alternative for large scale culling
 - to increase acceptance of vaccination-to-live:
Harmonisation of regulation vaccination-to-live with culling or vaccination as delayed culling
 - Support with epi- and eco-models to continuous update during an outbreak
 - Support research in successful PPP
- Challenge is to put experiences from the past into perspective of the 21st century

Acknowledgements

- Jantien Backer, Thomas Hagenaars, Herman van Roermund, Aldo Deckers, Gonnie Nodelijk WUR-CVI
- Coen van Wagenberg, Nico Bondt, WUR- LEI
- The financial support of the Dutch Ministry of Economic Affairs, for enabling much of the underlying research is highly appreciated.
- OECD for the invitation