

# **Improved Welfare and Economics**

## **More Welfare Without Pain Symposium April 27<sup>th</sup> 2010**

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# What is economics?

“It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest.”

Adam Smith (1776)

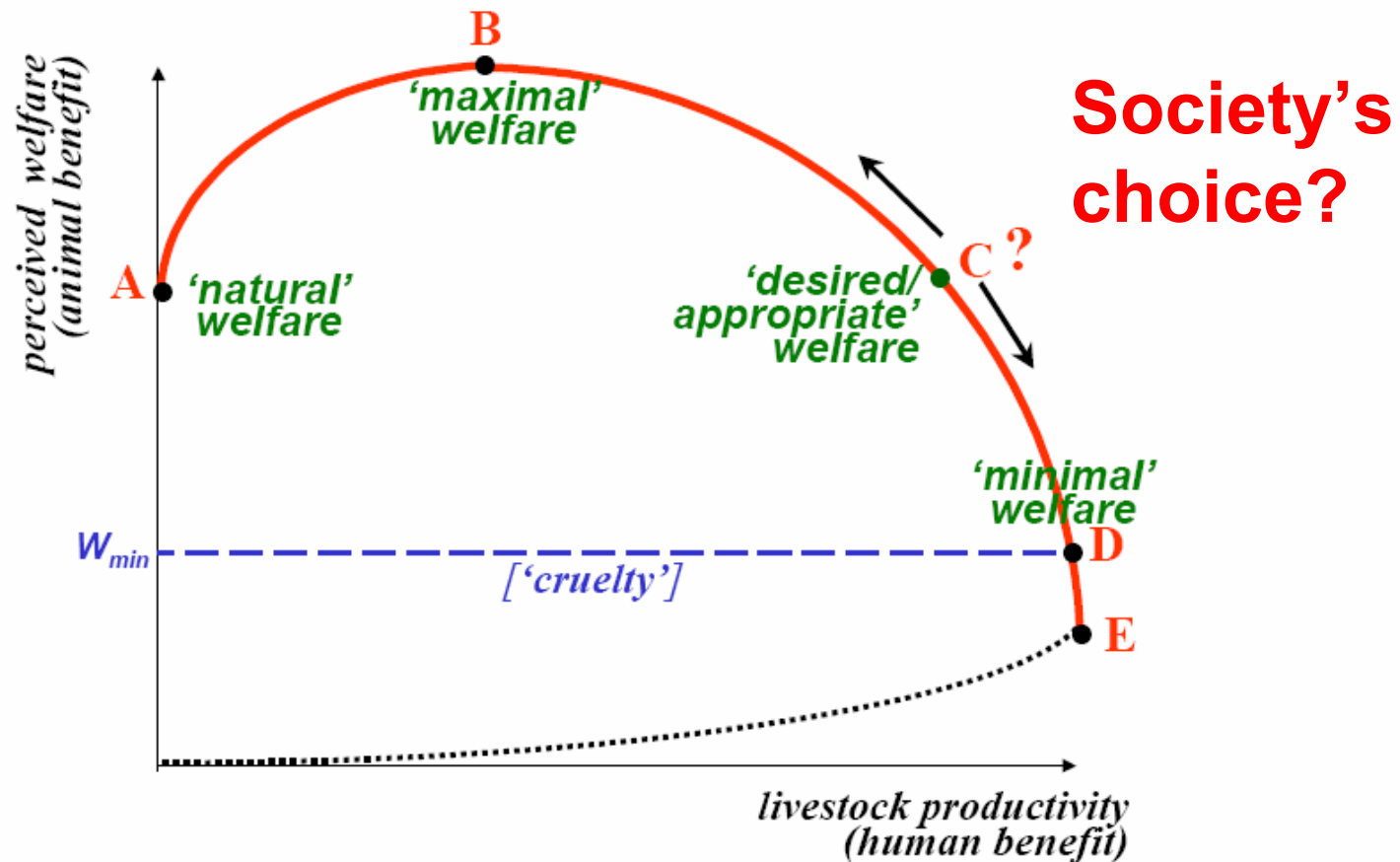


Encarta Encyclopedia, Sperr/Archive  
Photos

- Economic background
- Demand side example – broiler welfare
- Supply side examples:
  - Win-win: high fibre sow diets
  - Win-loose: non-crate farrowing
  - Unintended consequences: hill sheep
- Conclusions

# Economic background

Figure 3 Conflicts between animal welfare and productivity



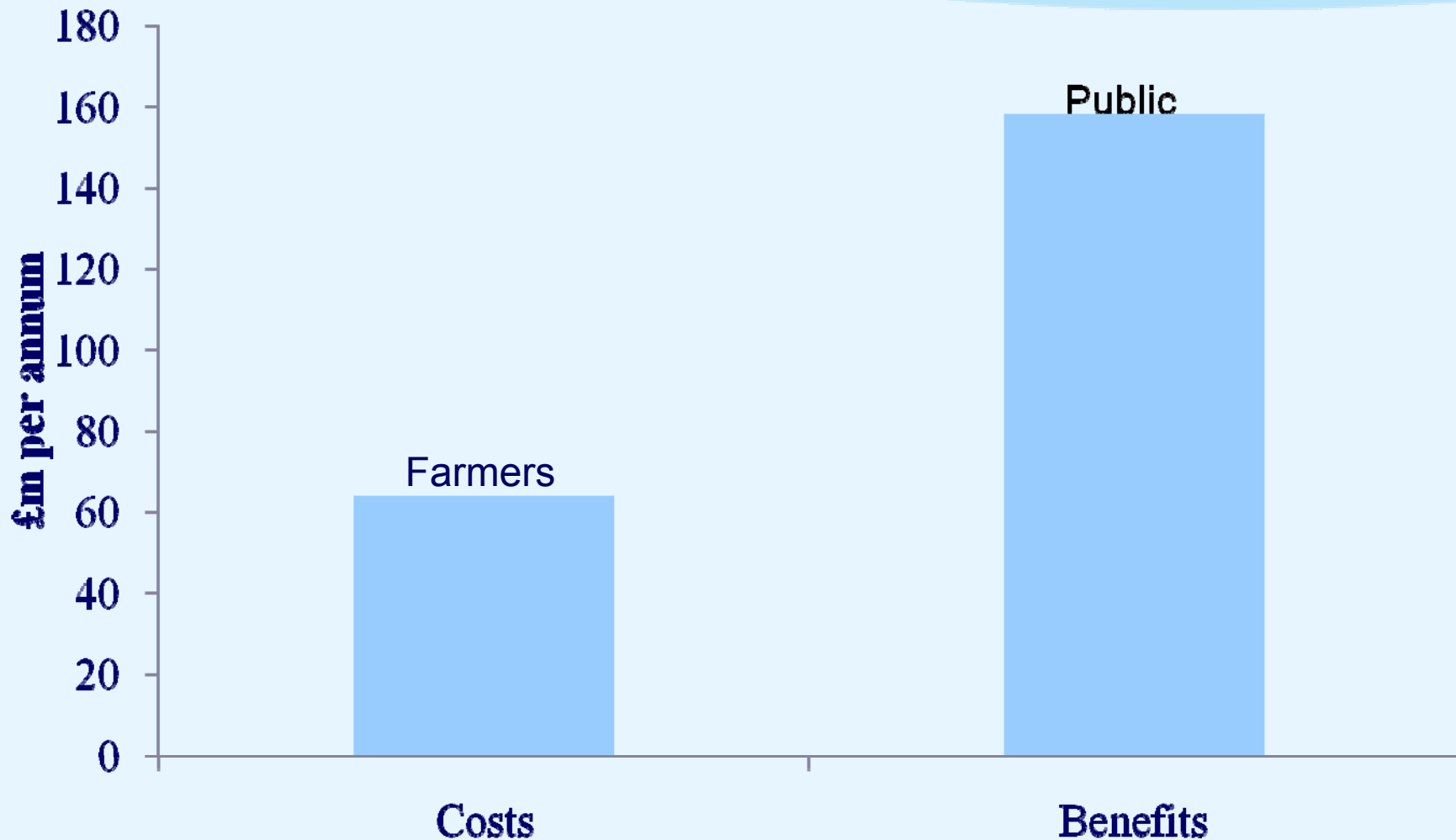
# Greater Consumer Role?



‘Middle England appears to be shunning the ballot box and turning to the supermarket shelf as a means of political expression’

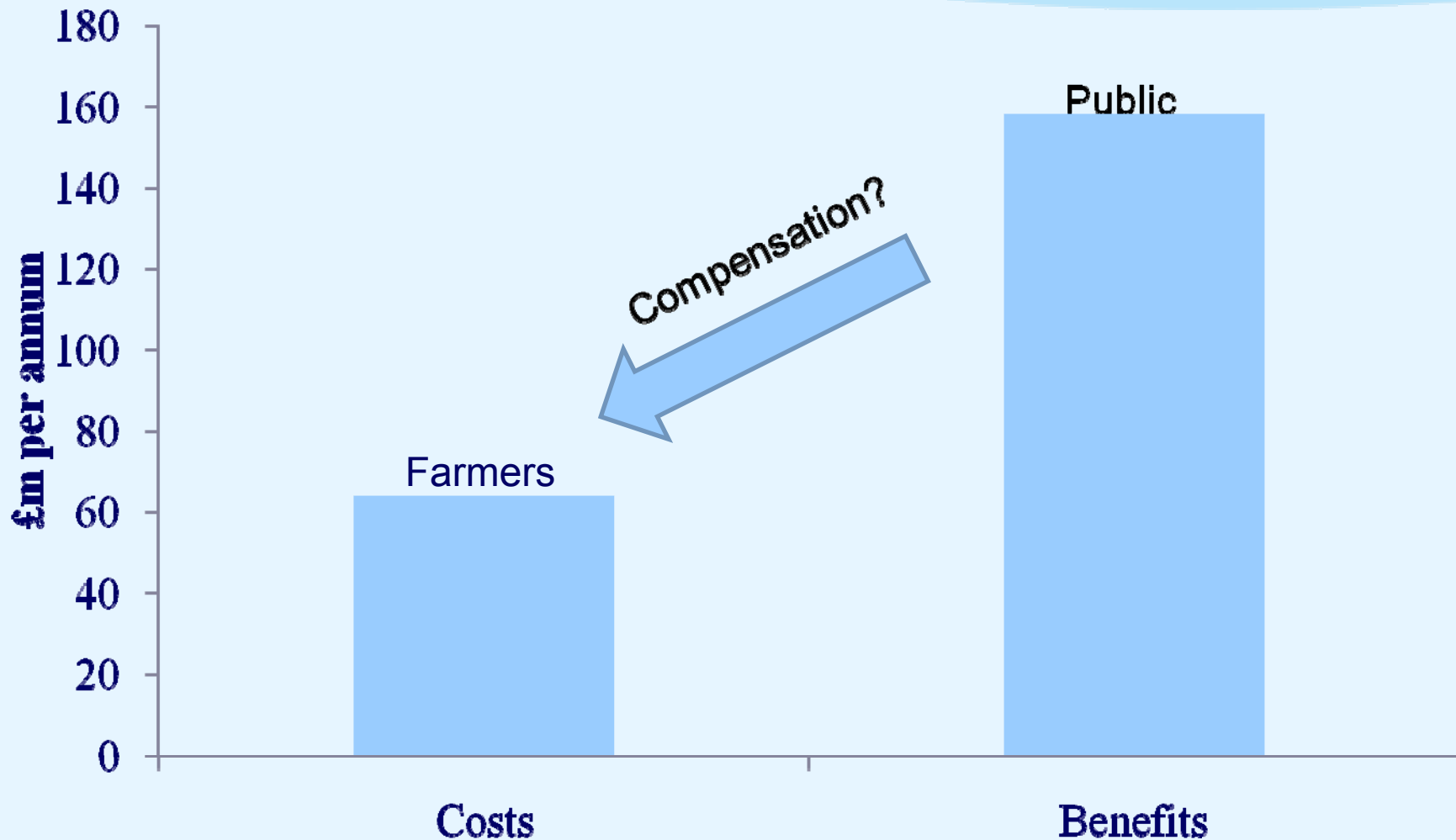
(Jonathan Clark, *Marketing*, 4th January 2006)

# CBA of EU Directive on Broiler Welfare\*



\*Moran, D., and McVittie, A. (2008). Estimation of the value the public places on regulations to improve broiler welfare. *Animal Welfare* 17, 43-52.

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# Problems with demand drivers



- Reflects human interests and concerns e.g. sow stalls
- Must be easily characterised e.g. barn eggs
- Non-market good undervalued?
- Free-market choice – option only
- Non-consumers don't actively 'vote'
- Public expect others to be responsible?



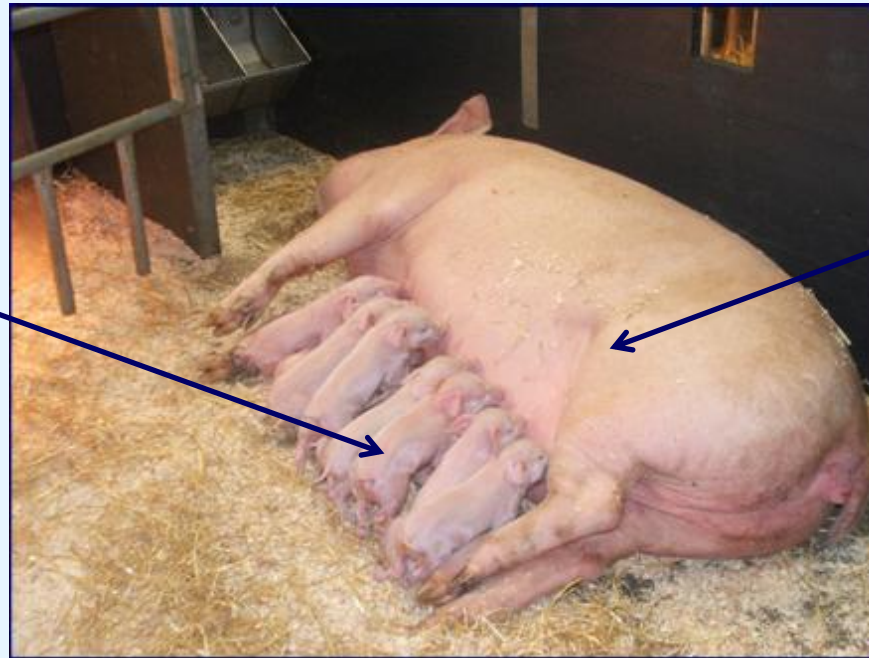
# Supply side example

Win-Win!

High Fibre Sows Diets\*

More piglets

More contented  
SOWS



Picture:S.Edwards

\*Ferguson et al. (2007) Reproduction, **133**:433-439.

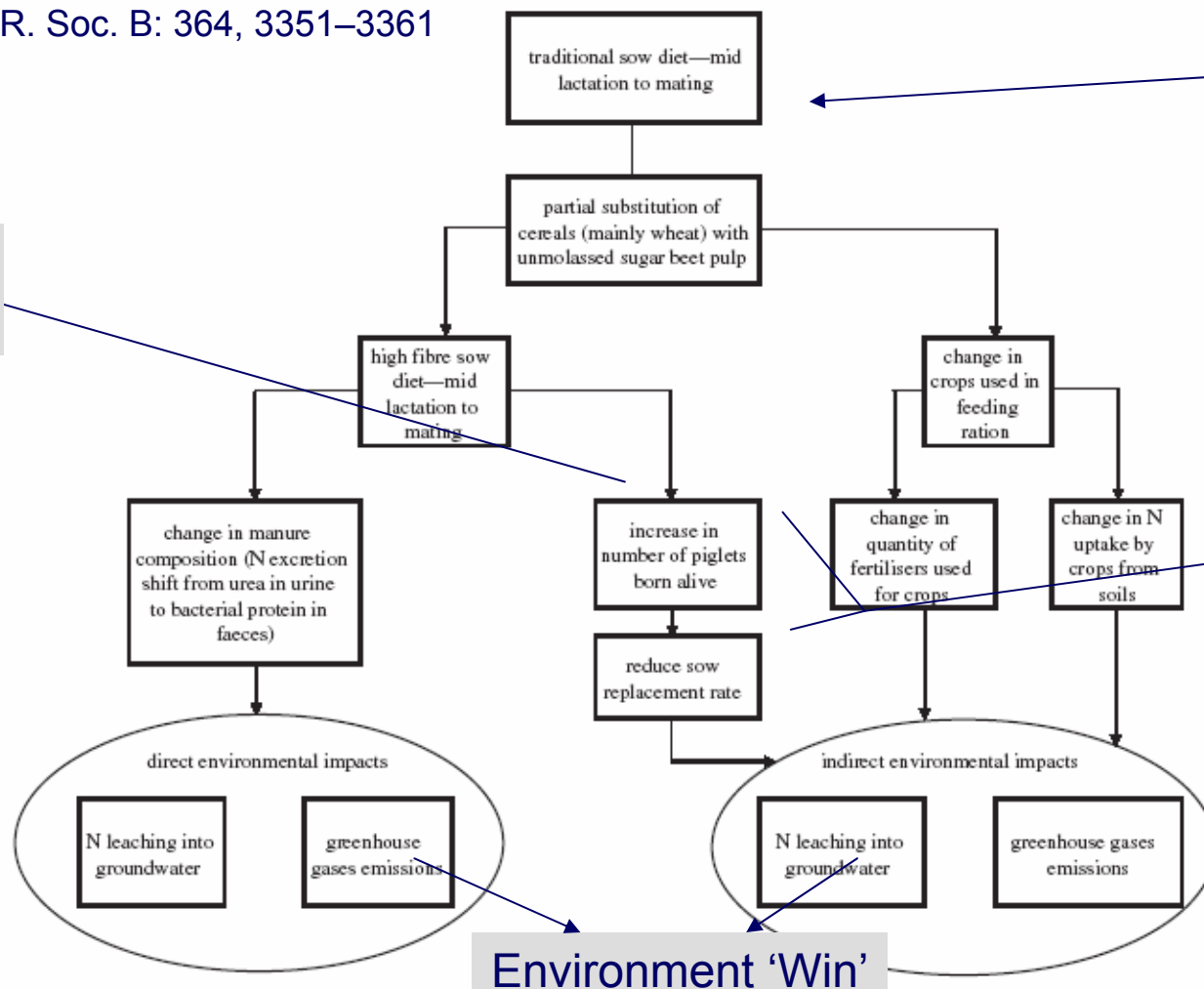
# Economist's view: win-win-win?

Ashworth, Toma & Hunter (2009)  
Phil. Trans. R. Soc. B: 364, 3351–3361

Welfare  
'Win'

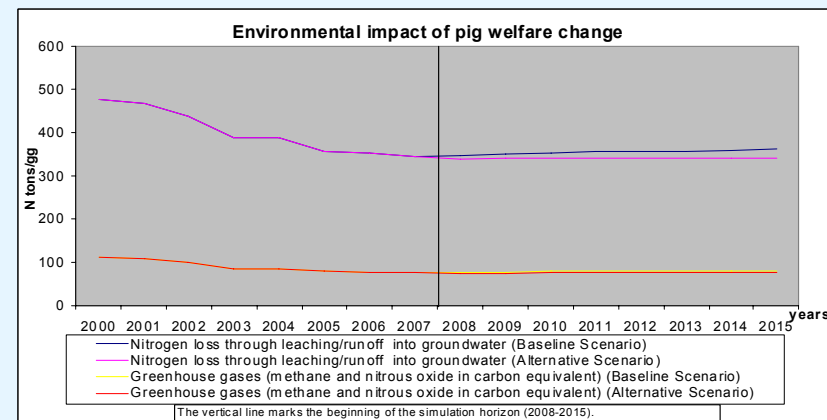
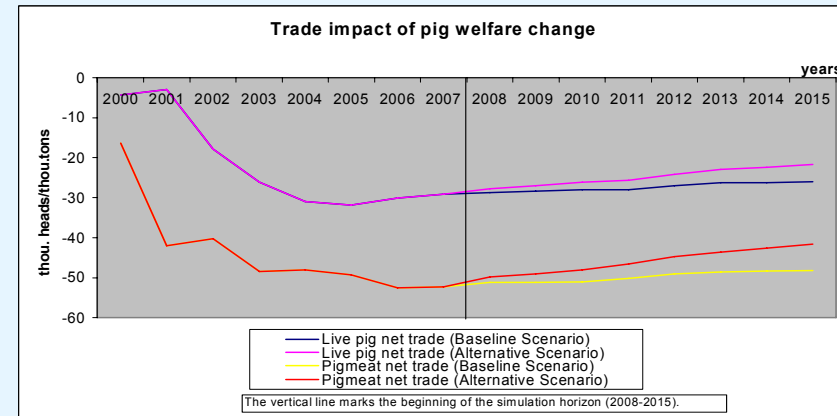
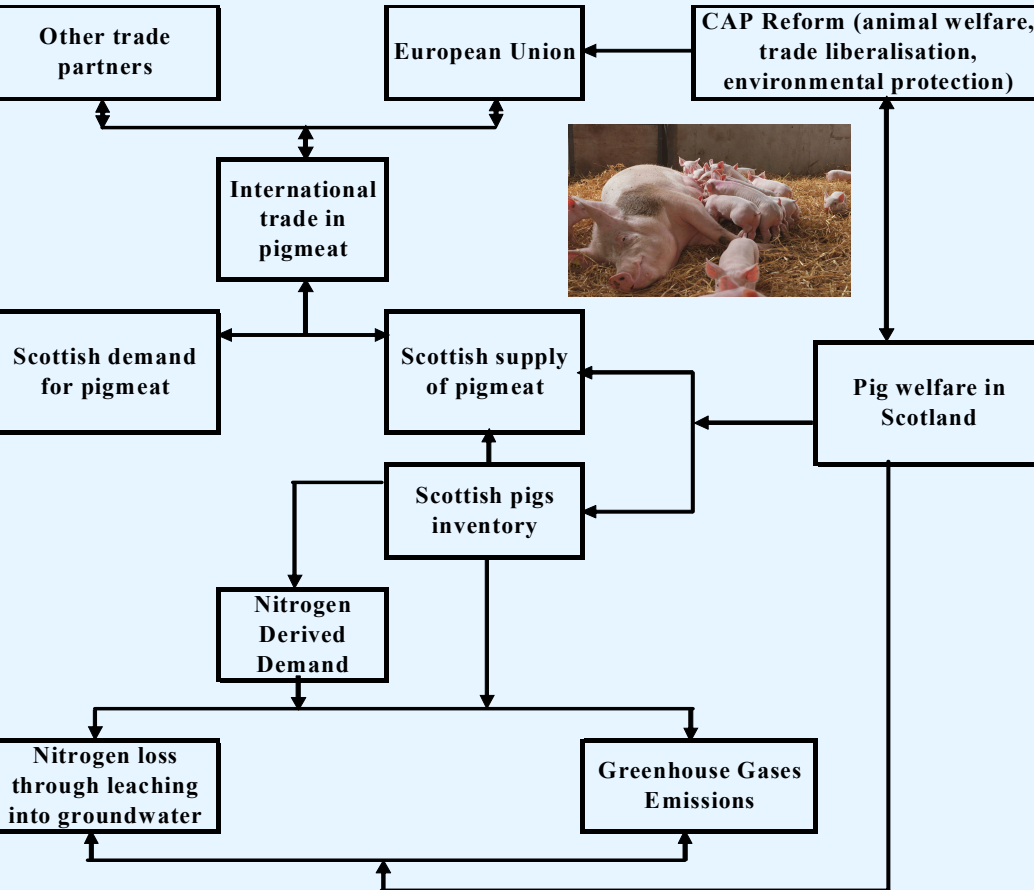
Scientific  
Advance

Industry  
'Win'



Environment 'Win'

# Economic model of the example



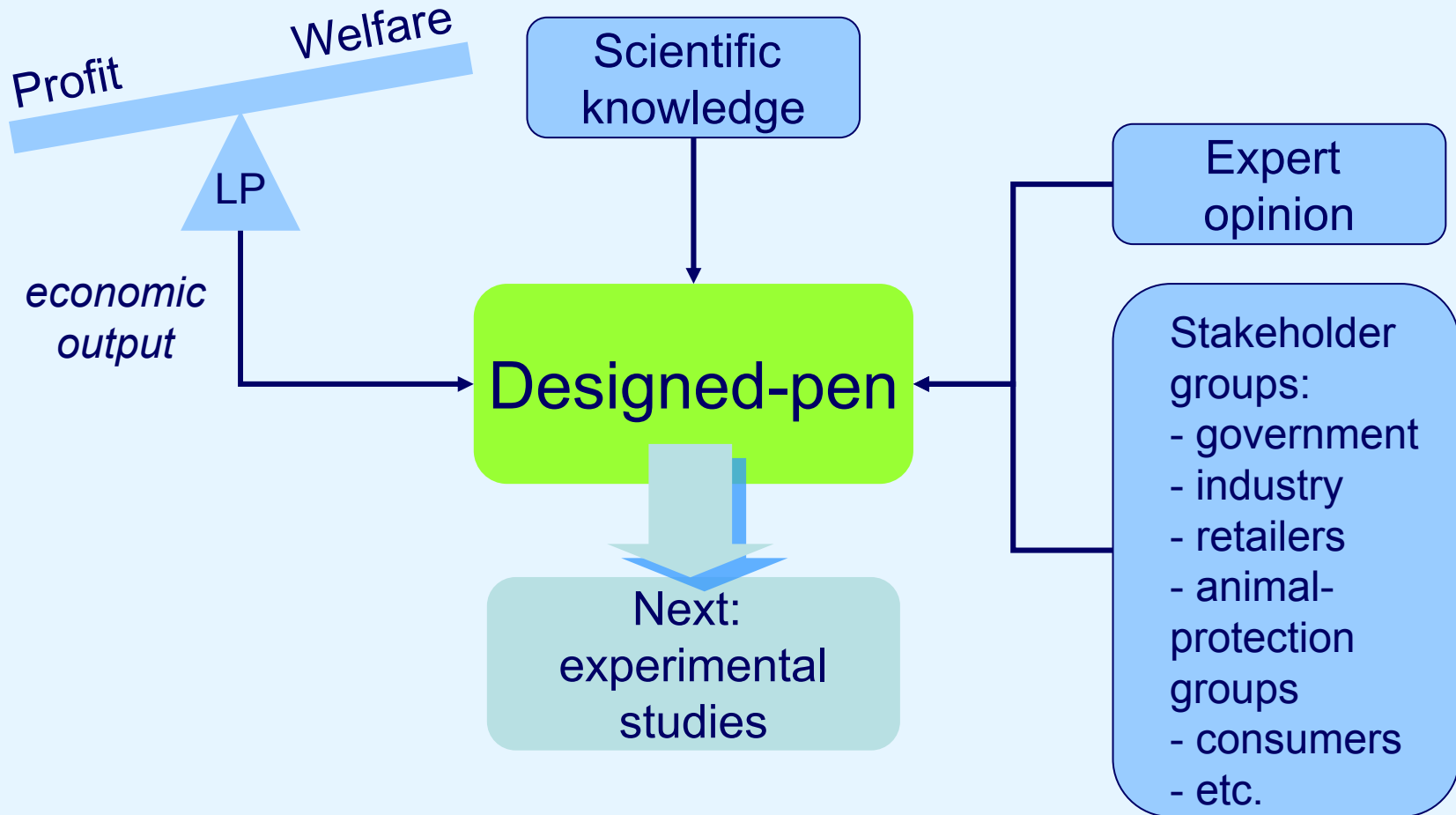
Schematic representation of the PE model, showing the main components and linkages required for the case study

## Defra 'PigSafe' Project Example

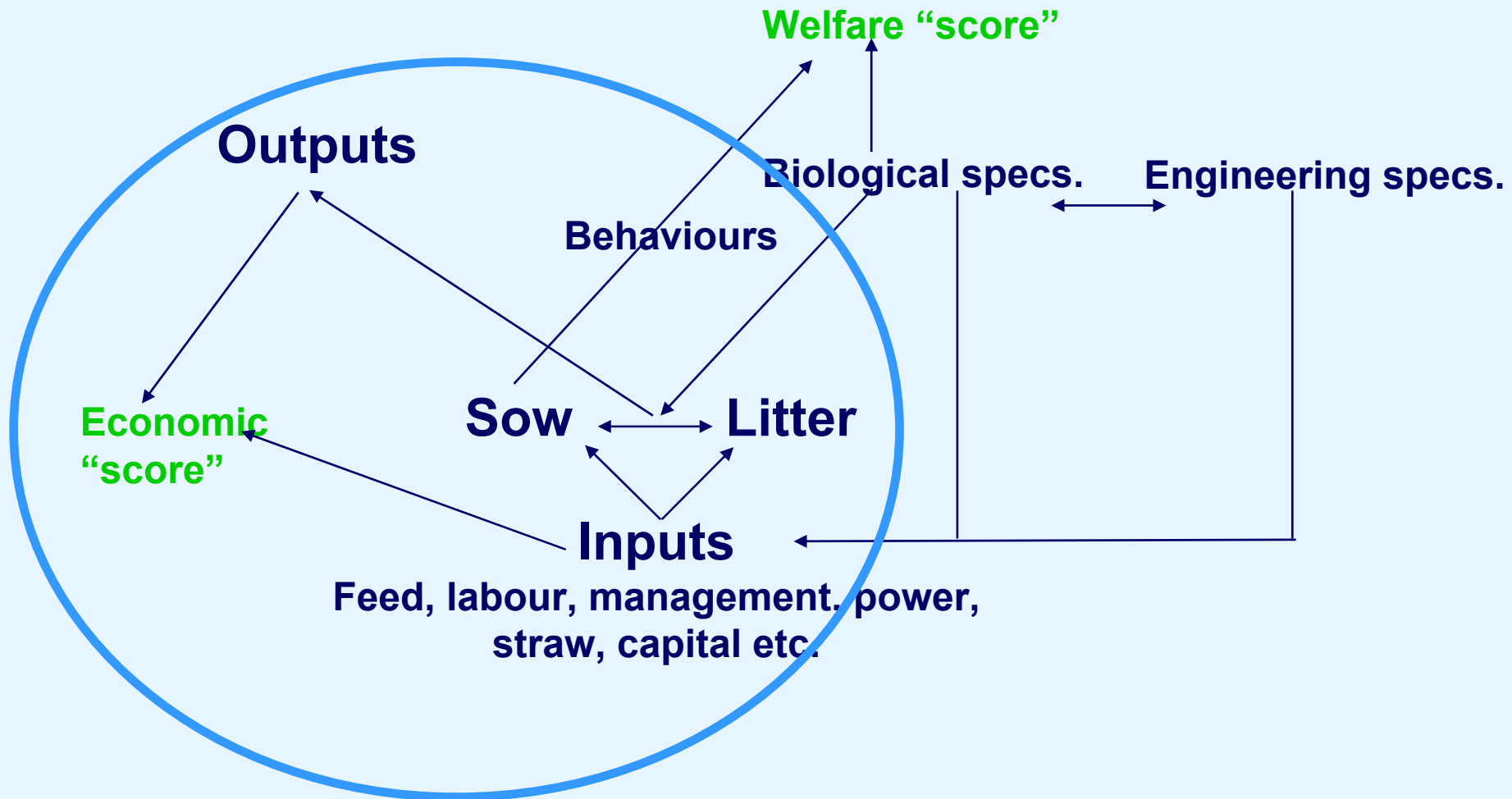
- Farrowing crates as welfare concern
- An economic alternative
- Commercially viable/feasible
- Optimisation model as a research tool



# LP Model Summary



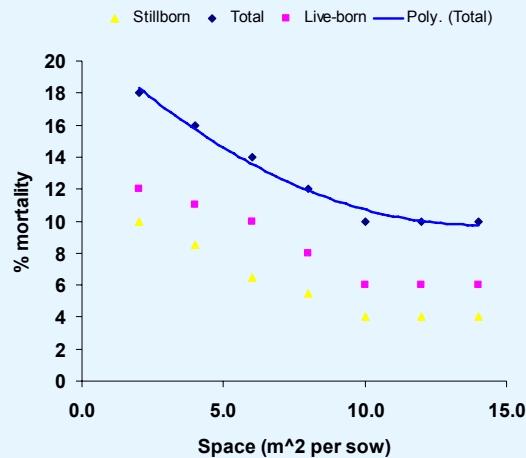
# Theoretical flow chart



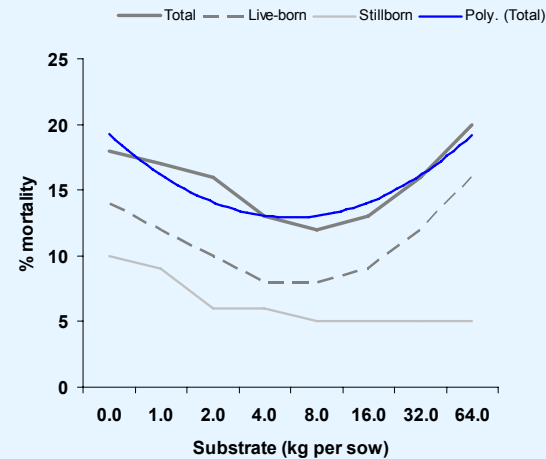
# Welfare components- production functions



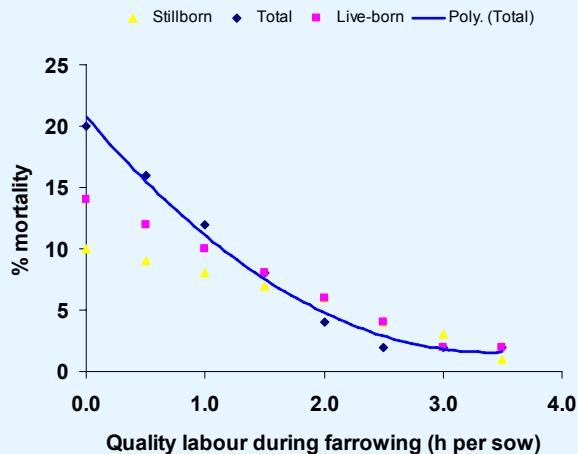
## Space – mortality function



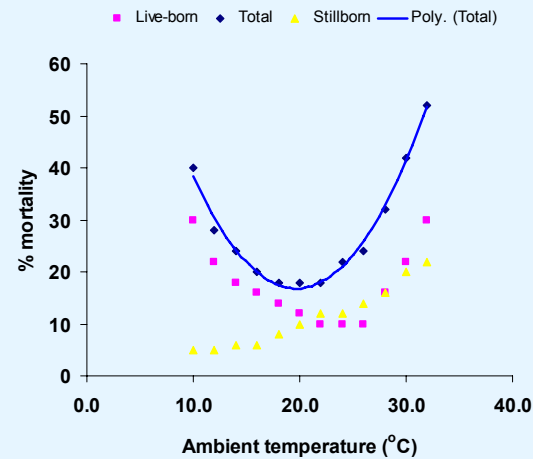
## Substrate – mortality function



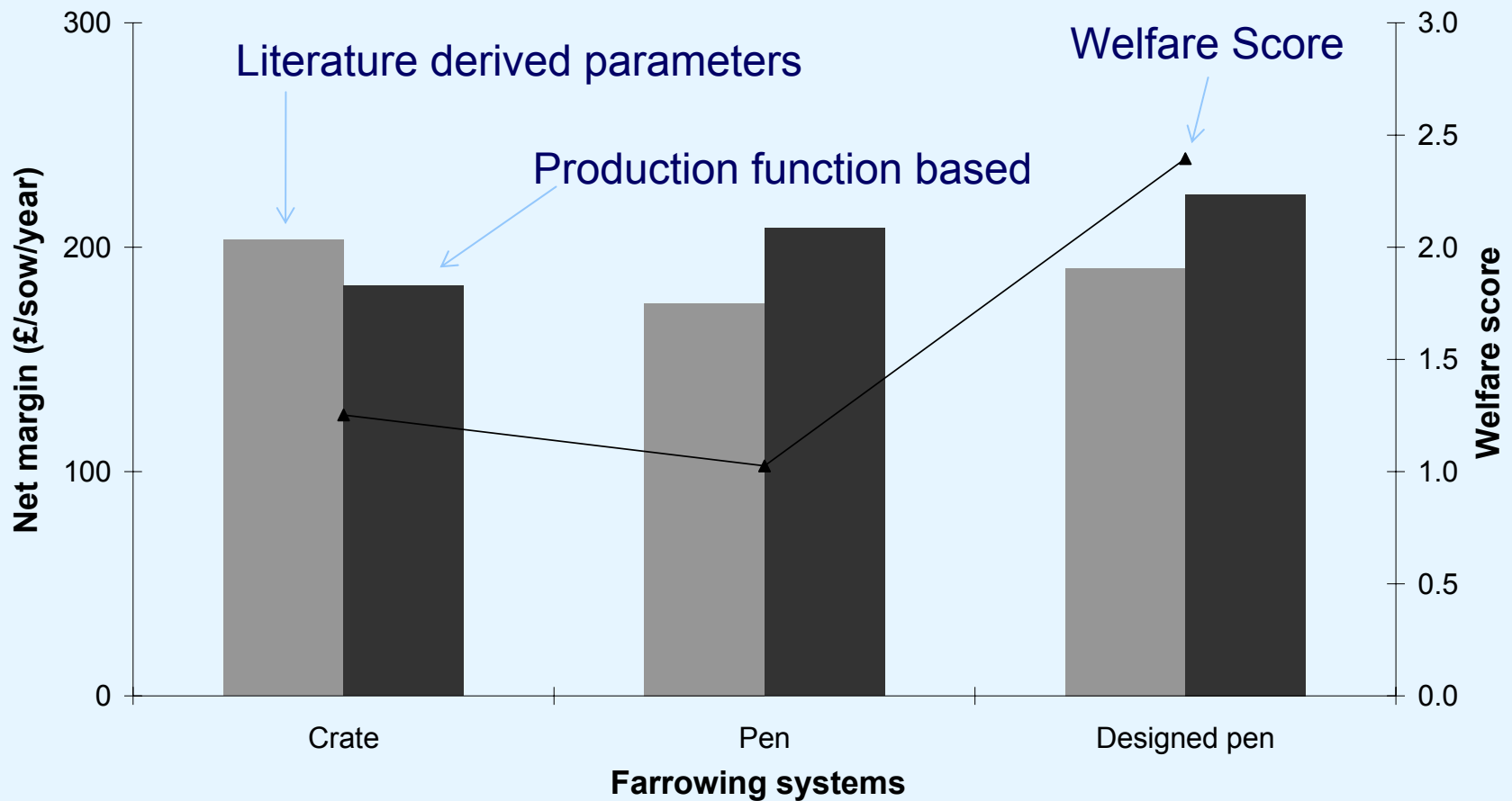
## Labour – mortality function



## Temperature – mortality function



# Some results\*



\*Vosough Ahmadi, B., Stott, A.W., Baxter, E., Lawrence, A. and Edwards, S.A. (2010, Submitted) Animal welfare and economic optimisation of farrowing systems. Animal Welfare.



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# Background

Areas of rough grazing:

31% of England

72% of Wales

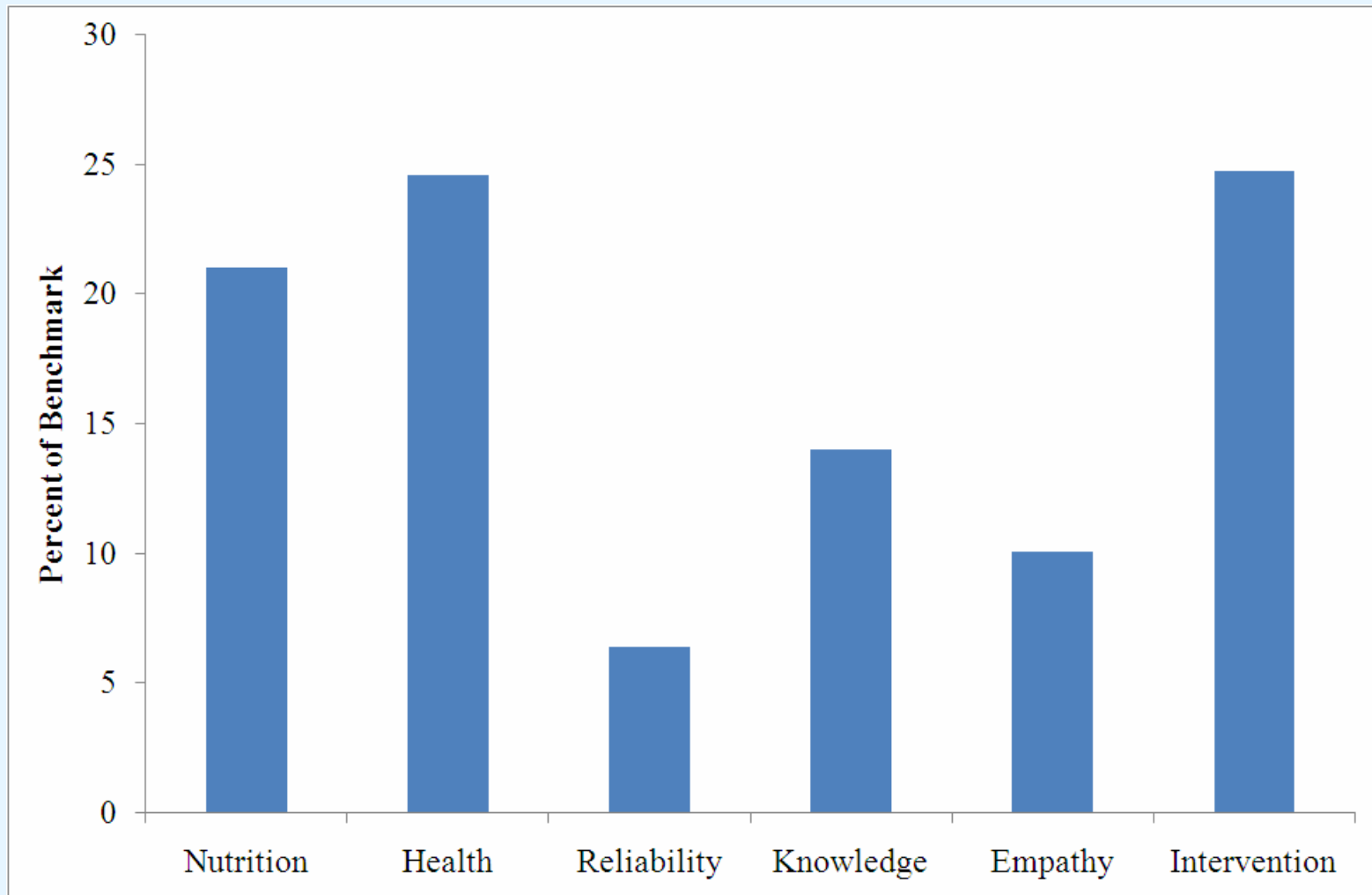
66% of Scotland



Vulnerable farming communities in uplands + subsidy change =  
Land abandonment = Serious loss of public goods and services\*

\*Foresight Land Use Futures Project (2010) Final Project Report.  
The Government Office for Science, London.

# Average Service Quality Gap\*



Some contributions of economics in improving welfare:

1. Clarify what people want.
2. Identify 'win-wins'
3. Minimise win-loose
4. Assess wider consequences of improving welfare
5. Contribute to understanding of welfare?

Not just cost and benefits!

# Acknowledgements



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# SAC

**S**✓**ccess** through **Knowledge**