The costs and benefits of animal welfare

What is animal welfare?

What do we mean by costs?

What do we mean by benefits?
Conceptual Frameworks for Animal Welfare

Naturalness – expression of normal or “natural” behaviours

Biological functioning

Affective states - mental functioning
Moral obligation to safeguard the welfare of animals

Concern about the way farm animals are treated

Bennett et al 2012
What is the current standard of farm animal welfare?
Benefits

The welfare of the animal

Productivity
The welfare of the animal
Increase the floor space per sow

1.4 m²/sow → 3.0 m²/sow
Productivity

Farrowing rate vs. Floor space allowance, m²/sow

60%  75%
FEATHER PECKING
FEATHER PECKING

Pain

Threats

Poor feathering $\rightarrow$ Feed conversion

Cost of egg production $\uparrow$ 7-12%

Cannibalism $\rightarrow$ Mortality

25-30% of flock
CANNIBALISM
Beak trimming/tipping
HOT BLADE BEAK TRimming
FEATHER PECKING

CANNIBALISM

100,000 birds

$240,000 saved
Conflicts between animal welfare and productivity

The diagram illustrates the relationship between perceived welfare (animal benefit) and livestock productivity (human benefit). Points A, B, C, D, and E represent different levels of welfare and productivity:

- **A**: 'natural' welfare
- **B**: 'maximal' welfare
- **C**: 'desired/appropriate' welfare
- **D**: 'minimal' welfare
- **E**: Livestock productivity (human benefit)

The dashed line represents a threshold of 'cruelty', indicated by $W_{\text{min}}$. The graph shows a trade-off between welfare and productivity, with higher productivity often leading to lower welfare.
## Table 1. Estimated impacts on final food prices of selected policy changes which have an animal welfare impact

<table>
<thead>
<tr>
<th>WELFARE CHANGE</th>
<th>Estimated effect on livestock production costs (%)</th>
<th>Effect at retail level</th>
<th>Impact on weekly food expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Commodity</td>
<td>Price change (%)</td>
</tr>
<tr>
<td>Introduce BST</td>
<td>-8</td>
<td>Liquid milk</td>
<td>-2.56</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cheese</td>
<td>-1.92</td>
</tr>
<tr>
<td>Ban hormones</td>
<td>+4</td>
<td>Beef</td>
<td>+1.44</td>
</tr>
<tr>
<td>Limit transport times to 8 hours</td>
<td>+3</td>
<td>All carcase meat</td>
<td>+1.14</td>
</tr>
<tr>
<td>Ban sow tethers and crates</td>
<td>+5</td>
<td>Pork</td>
<td>+1.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bacon &amp; ham</td>
<td>+1.3</td>
</tr>
<tr>
<td>Ban broiler systems</td>
<td>+30</td>
<td>Poultry meat</td>
<td>+13.2</td>
</tr>
<tr>
<td>Ban battery cages</td>
<td>+28</td>
<td>Eggs</td>
<td>+17.9</td>
</tr>
</tbody>
</table>

Any percentage rise in production cost at the farm → 0.25% rise in retail food prices

John McInerney 1995
Table 2  Mean (± SD) WTP for a one point increase in welfare (£).

<table>
<thead>
<tr>
<th></th>
<th>Increase in monthly meat expenditure</th>
<th>Increase in annual meat expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef/cattle welfare</td>
<td>0.437 (± 0.652)</td>
<td>5.24</td>
</tr>
<tr>
<td>Pork/pig welfare</td>
<td>0.381 (± 0.479)</td>
<td>4.57</td>
</tr>
<tr>
<td>Chicken/chicken welfare</td>
<td>0.425 (± 0.527)</td>
<td>5.10</td>
</tr>
</tbody>
</table>
What is the standard of farm animal welfare?

Welfare Standard

Essential cost → Cost Vs benefit?

-Poor
-Acceptable
-Excellent
Australian Red Meat Industry risks and opportunities to 2030

- Risk
- Opportunity
- Risk
- Opportunity
- Risk

-4
-3
-2
-1
0
1

Consumer and Community Support

$4.12 billion

Animal welfare
Stewardship of environmental resources
Red meat in a healthy diet resources
Australian Red Meat Industry

Forecast value of risks and opportunities to 2030

-6
-4
-2
0
2
4

$ billion

Risk
Opportunity
Risk
Opportunity
Risk
Opportunity
Risk
Opportunity

Consumer & community support
Market growth & diversification
Supply chain efficiency & integrity
Productivity & profitability
What is the standard of farm animal welfare?

Essential cost → Cost Vs benefit?

Welfare Standard

Poor → Acceptable → Excellent
Australian National Animal Welfare Research, Development and Extension Strategy

- Beef
- Chicken meat
- Dairy
- Eggs
- Live export
- Pork
- Processing
- Sheep meat
- Wool
### Australian National Animal Welfare Research, Development and Extension

#### Steering Committee

<table>
<thead>
<tr>
<th>Research Funders</th>
<th>Research Providers</th>
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</thead>
<tbody>
<tr>
<td>• Australian Egg Corporation Ltd</td>
<td>• CSIRO</td>
</tr>
<tr>
<td>• Australian Pork Limited</td>
<td>• DAFF Queensland</td>
</tr>
<tr>
<td>• Australian Meat Processor Corporation</td>
<td>• Department of Economic Development, Jobs, Transport and Resources, Victoria</td>
</tr>
<tr>
<td>• Australian Wool Innovation</td>
<td>• Murdoch University</td>
</tr>
<tr>
<td>• Dairy Australia</td>
<td>• South Australian Research and Development Institute</td>
</tr>
<tr>
<td>• Livecorp</td>
<td>• The University of Adelaide</td>
</tr>
<tr>
<td>• Meat &amp; Livestock Australia</td>
<td>• The University of Melbourne</td>
</tr>
<tr>
<td>• Rural Industries R&amp;D Corporation Chicken meat</td>
<td>• The University of Queensland</td>
</tr>
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<td></td>
<td>• The University of Western Australia</td>
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Benefits to South Australia of high quality animal welfare

Premium food and wine from our clean environment:
• Ethical production of high quality safe food
• Increased consumer recognition
• Market protection
• Food industry growth

• Build our brand
• Grow our capacity
• Secure production