

Livestock Production & Climate Change

Like most human activities, livestock production is responsible for Green House Gas (GHG) emissions, one of the causes of climate change. However, climate change science is a rapidly developing discipline and there is evidence that the impact of livestock production has been overstated.

Livestock's Contribution to GHG Emissions

The United Nations Food and Agriculture Organization's (UNFAO) 2006 report, *Livestock's Long Shadow*, suggested that Agriculture was responsible for 18% of all GHG emissions. This figure has been quoted extensively by the media since. However, this figure has attracted much criticism, with the methodology behind it questioned consistently by scientists. Climate change science has moved on rapidly since the original report and the FAO has now suggested that it will publish revised and lower estimates later this year.

More importantly the FAO estimate is a global one. Estimates for the percentage contribution of GHG emissions from UK agriculture are far lower at 9% an estimated fall of 21% since 1990.¹ Although livestock production makes up a significant proportion of these emissions the sector clearly has a far smaller role to play in overall emissions reduction than the FAO figure of 17% would suggest. A similar situation applies in many other developed countries, where livestock production and primary agriculture hold a lower share of economic activity within the overall economy.

Livestock's Water Usage

High levels of water use in beef and lamb production have been used as an argument against livestock production in the past. A new model developed by Cranfield University² suggests water usage footprint of 17,657 litres for each kilogram of beef and 55,759 litres per

Progress in Reducing GHG Emissions

Despite making a far lower contribution to climate change than some estimates suggest, the livestock sector in the UK and other countries recognise their responsibility to reduce their environmental impact. The pig, sheep and beef sectors have all responded by developing clear plans to meet reduction targets set by government and in the case of pig farming, exceed them by reducing emissions by 17%.³ Similar commitments exist in major exporters to the UK such as Ireland, New Zealand and Denmark.

Significant advances have already been made in reducing GHG emissions by improving the efficiency of production. For example:

- In the UK, 5% fewer prime animals were required in 2008 to produce each tonne of beef and lamb than in 1998.⁴

What is being done?

- In the UK, pig farmers today produce the same amount of pig meat from a herd approximately half the size of twenty years ago.⁵ Similar improvements have been achieved in Denmark.
- In Ireland, beef farms are being audited to measure their carbon impact and farmers given feedback on how they can reduce their carbon footprint. This project is being organised in partnership with the Carbon Trust and 32,000 farms will be evaluated and presented with an action plan for GHG emission reduction by the end of 2012.
- In New Zealand, total emissions from lamb and beef production in 2009 were 17% less than in 1990.⁶



kilogram for lamb. However, the vast majority of the water used was rainwater that fell on the grasslands used for grazing and could not have been used for other purposes. In fact, only 67 litres per kilogram for beef

(around 0.4%) and 49 litres for sheep (0.1%) of water used is taken from the water supply and could otherwise have been used for other activities.



1. DEFRA, *Agricultural Statistics and Climate Change First Edition*, 2011. 2. *The Water Footprint of English Beef and Lamb*, Cranfield University, 2010. 3. *Advancing Together – A Roadmap For The English Pig Industry*, BPEX 2011. 4. *Change In The Air – The English Beef and Sheep Production Roadmap Phase 1*. 5. BPEX. 6. *Beef and Lamb New Zealand*

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What more is being done?

The real opportunities to cut GHG emissions are in the following areas:

Genetics – breeding programmes to produce cattle and sheep with lower methane production.

Feed – better nutrition for sheep and cattle via the development of improved grass and clover varieties and development of winter feeds such as more digestible oats.

Grassland management – producing greater quality and quantity of grass, as well as ensuring it is eaten at the point in its growth where it provides the most nutrients and is more digestible.

Improved feed efficiency for pigs – over 70% of all potential for improvement lies in this area.

Management of slurry for pigs – better handling and storage of wastes and their subsequent utilisation both for spreading on the land and use as a sustainable energy source (biogas).

Conclusion

The livestock industry wants sustainable livestock systems. The greater efficiency which leads to lower GHG emissions also leads to increased margins. The industry has clear targets and a clear plan. There is a considerable scientific and technological effort focused on reducing GHG emissions.

Perhaps most importantly, the difference between the most efficient and least efficient farms is significant. There are clearly major opportunities to reduce emissions simply by spreading best practice and applying existing knowledge. Through this and future developments, the livestock sector can continue to play its vital role in providing food for a growing population while ensuring its overall environmental impact remains sustainable.

