

“Climate Change” and why it is relevant to the Northern Ireland Dairy Industry?

by Dr John Gilliland OBE, Farmer: Chairman, Rural Climate Change Forum, DEFRA

This year's Oxford Farming Conference's title clearly laid down the challenge! "A Climate of Change: Agriculture the solution, not the problem!"

Without doubt, 2007 will go down in the annals of history as being the defining year, when not only did the developed world start to realise that food security was key to its survival, but also, the consequence of change to our climate could not be ignored.

Closer to home, a reflection of 2007 conjures up memories which can only lead me to conclude that 2007 was a "Tipping Point," a definitive year for agriculture and climate change. Memories include

- The mildest spring on record
- The wettest summer and largest floods, on record
- The publication of the draft, but unique, UK Climate Change Bill
- The arrival of the animal disease "Blue Tongue" to the shores of the UK
- The start to printing carbon footprints on food packages, on a brand of potato crisps
- The newspaper printing of pictures of this season's first fields of UK daffodils, in full bloom, on New Year's Day.

The above are as a direct consequence of the three key drivers, which will deliver this new change; increasing weather volatility; Government policy intervention; and market interpretation of consumers' aspirations. Deemed by Tony Blair, as the world's most pertinent issue, climate change and its consequences are here to stay and we in the Northern Ireland Agri Food Industry, ignore this debate at our peril.

SO WHY SHOULD WE CARE?

Quite simply, without proper management and assessment of the risks, all these three drivers will take from our bottom line and not contribute to it, as we sit at the frontline, exposed and unprepared.

SO WHAT IS MY INTEREST?

Well, for the last two years I have chaired DEFRA's Rural Climate Change Forum, a high-level, cross-sectoral, advisory Forum, reporting directly to Secretary of State, Hilary Benn MP. We major on three key areas; the robustness of the science in allowing us to both mitigate and adapt to climate change; advise on the potential of policy and economic instruments to deliver positive change; and the communication and awareness raising to key stakeholders, within the farming, food and land-based sector.

SO WHAT ARE THE KEY MESSAGES?

1. The farming, food and land-based sector is a net contributor of greenhouse gases (GHGs). 7% of the UK's total GHGs come from this sector, 1% of Carbon Dioxide, 37% of Methane and 67% of Nitrous Oxide. The last two are very important as methane is 20 times more toxic than CO₂ and nitrous oxide is 310 times more toxic than CO₂.
2. Within N. Ireland, the situation is far worse due to the prominence of our sector, within the wider economy. 23% of all N. Ireland's GHGs come from this sector, with Wales and Scotland coming very close behind us.



Dr John Gilliland

3. Even when you ignore that 30% of all food produced is not consumed, but land-filled resulting in uncontrolled methane production; 11% of our emissions come from our organic wastes, 19% from inorganic fertilisers and 44% from enteric fermentation within the guts of cattle and sheep.
4. There are clear risks to this sector. Floods, droughts, new pests and diseases are the most obvious, but badly implemented market or policy interventions could equally hit the bottom line.
5. There are clear responsibilities. 80% of all land is managed by farmers, and as the climate changes, so will the biodiversity and our ability to lock up carbon in growing plants and soil. Perceived consumer and political views on our responsibilities will be imposed, or encouraged.
6. There are clear opportunities. Longer growing seasons and new crops will be the most obvious, but technologies such as anaerobic digestion and other renewables will allow new profit streams, as carbon becomes an ever increasingly, valued commodity, through the use of new trading mechanisms and carbon markets.

SO WHAT ARE THE POLICY DRIVERS?

The United Kingdom has signed up to numerous international targets on GHG reduction. This will only accelerate with the agreement at Bali last December, to sign off on a successor to the Kyoto Agreement, by 2009.

The consequence of these targets are the creation of many policy instruments. The EU Emissions Trading Scheme has already caught most dairy processors in N. Ireland. The UK Climate Change Levy is already paid by most of us, as electricity consumers.

The new policy tool, soon to be implemented, uniquely to the UK, is the Climate Change Bill. Published by Blair last year, as he left for retirement, the Bill is expected to receive Royal Assent in Summer 2009. Key to its implementation will be the setting up of the Climate Change Committee, who will have the power to set

legally binding emission reduction targets, for all sectors of the economy, and for all GHGs, not just CO₂, as has been the case up until now. Our sector is acutely exposed if they start to look at methane and nitrous oxide and especially, if they decide to devolve the emission reduction targets, which they have not done to date.

SO WHAT ARE THE EMERGING MARKET CONSEQUENCES?

Many retailers are now experimenting with carbon labelling. Much that these can be useful tools, without some agreed standardisation and better knowledge of the science, they are unlikely to be precise and could, if used incorrectly, cause real market distortion.

SO WHAT CAN I DO AS A FARMER?

Clearly, our Achilles heels are methane production from animals and farm wastes; and nitrous oxide from soils. When we look at the science for help, clear gaps in our knowledge can be found. Researchers are scrabbling for answers, but without proper funding, they will struggle to give us all the answers we want and on time.

But like all good farming decisions, common sense goes along way. Below are just some suggestions:-

1. Have you ever had an energy audit – look at energy efficiency and the use of renewables
2. Can you use your organic manures more wisely – both in how and when you apply
3. Where possible, displace artificial nitrogen with organic nitrogen, as artificial nitrogen is very fossil fuel intensive, in its production.
4. Have you considered looking at anaerobic digestion – although struggling economically now, with a higher price for carbon and double the Renewable Obligation Certificates in future, this must be made to work.

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5. Are you achieving high milk yields – a 9,000 litre cow will produce less methane per litre than a 6,000 litre cow
6. Seek advice – One good source is the "Farming Futures" website, www.farmingfutures.org.uk. This includes good case studies and fact sheets and well worth a visit.

AS FOR THE "NAY SAYERS?"

I don't claim to be a scientist, but have read and observed. Certainly on my farm, you can't miss the dramatic changes in our weather patterns and our growing seasons. There is no doubt that some of the change is down to natural phenomena. This planet has already experienced several ice ages when CO₂ levels averaged as low as 190ppm. Even in the intervening years, when the planet warmed up, CO₂ levels averaged 280ppm. Today, CO₂ levels have just exceeded 380ppm and rising sharply. This level of CO₂ has never been recorded before.

TO THE INDUSTRY I SAY FOUR THINGS

1. Engage with the policy makers, or face what happened with the implementation of the Nitrates Directive
2. Engage with the market, before it is used as a rod to beat our backs
3. Fund proper Research and Development needed to answer the knowledge gaps we currently have, and produce the innovative tools needed to deliver this challenge
4. Grasp the opportunities as they come, to take cost out of your business

For my part, as long as I am allowed to stay engaged, climate change policy can only be allowed to be made on the basis of sound science. With such a global problem as climate change, exporting UK food production due to badly thought out policy or market drivers, does nothing for delivering on positive global climate change.

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