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By PETER J AUSTIN



Pierre Gerber from the FAO says regulators must decide on how best to mitigate the estimated 7.1 billion tones of CO₂ equivalent emissions from livestock

Defining the carbon problem

LIVESTOCK farming casts a long shadow when it comes to greenhouse gas emissions (GHG), Dr Pierre Gerber from the United Nations Food and Agriculture Organisation told delegates at last month's World Dairy Summit in Edinburgh, Scotland.

He said that ranged from the release of the three gases (Carbon Dioxide - CO₂; Methane - CH₄; and Nitrous Oxide - N₂O) through indirect activities like fertiliser manufacture and use on pasture, through soil cultivation and fossil fuel consumption on farm, transport, and to the more direct production and release of methane by ruminating animals.

Together these accounted for an estimated 7.1 billion tones of CO₂ equivalent or 18 per cent of total GHG emissions, about two thirds of which came from extensive production and the remainder from more intensive systems.

The question now for regulators in the post Kyoto environment, he said, was how to reduce or mitigate that situation.

Researchers around the world were developing programs aimed at specific issues of greatest concern in their own countries but, as with the proposed legislation, those areas of concern and hence the research focus varied between countries.

One of the problems for pasture-based dairy systems such as those in Australia and New Zealand was the concentration of research in the northern hemisphere with their mostly intensive dairy systems.

Some of that work outlined at the conference showed that GHG emissions were lower for intensive dairy systems as a result of higher milk yield per animal, and to more efficient rumen function that produced less methane in fully-fed cows.

The incentive for farmers in these markets then will be to optimise these systems.

What was also clear, however, was the already tight margins that farmers operate under with some noting they needed “something extra” in addition to their dairy operations if they are to survive.

For Dutch farmer Kees Gorter the answer is a manure digester used to produce gas which in turn runs a generator feeding electricity into the local grid.

But Mr Gorter said that required much greater volumes of material than he produced on his dairy farm and so he now also converted waste from a nearby vegetable processing plant.

Professor Maggie Gill who is the Scottish Government’s chief scientific advisor for agriculture and the environment noted the very complex requirements for data such as life-cycle carbon footprints that were translated into kilograms of carbon for each kilogram of milk.

She said there was urgent need for data that provided meaningful comparisons between sectors, to paint the “big picture” so that, for instance, unintended consequences of intended legislation could be seen.

That was reinforced by British farmer and policy adviser Dr John Gilliland Roger who chairs the UK Rural Climate Change Forum.

Dr Gilliland said care was needed so that, for instance, processed manure from a methane digester was not labeled as animal waste since that classification would then mean it would be banned from used as a soil conditioner for food production.

Professor Gill said groups of policy makers, scientists and practitioners along the food chain needed to identify and prioritise the key questions, providing the lead for the research and analysis phase by scientists.

The next phase then would be for the original groups to challenge those research findings.

Breakout:

A new report establishes productivity as the starting point for dairy farmers wanting to reduce their carbon footprint, says dairy supply company DeLaval.

Tim Nicolai from DeLaval said the study confirms that regardless of dairy farm type, the productivity for each kilogram of live weight is the starting point for reducing the environmental footprint of any dairy farm.

Preliminary results from a study conducted by the Dairy Research Centre of the International Farm Comparison Network (IFCN) compares the carbon footprints of dairy farms and farming systems in 38 countries, revealing remarkable differences between countries and farming systems.

This shows the least efficient farm type leaves a carbon footprint 17 times greater than the most efficient dairy farms.

“The challenges for the dairy sector vary around the world, but some fundamentals are the same: the need for a sustainable environment to work in, and increased demand for milk.

DeLaval says the research confirms that an optimized use of natural resources - such as water and land - combined with maximizing feed efficiency and animal health contribute to the lowering of the carbon footprint of any type of dairy farm through higher production efficiency.