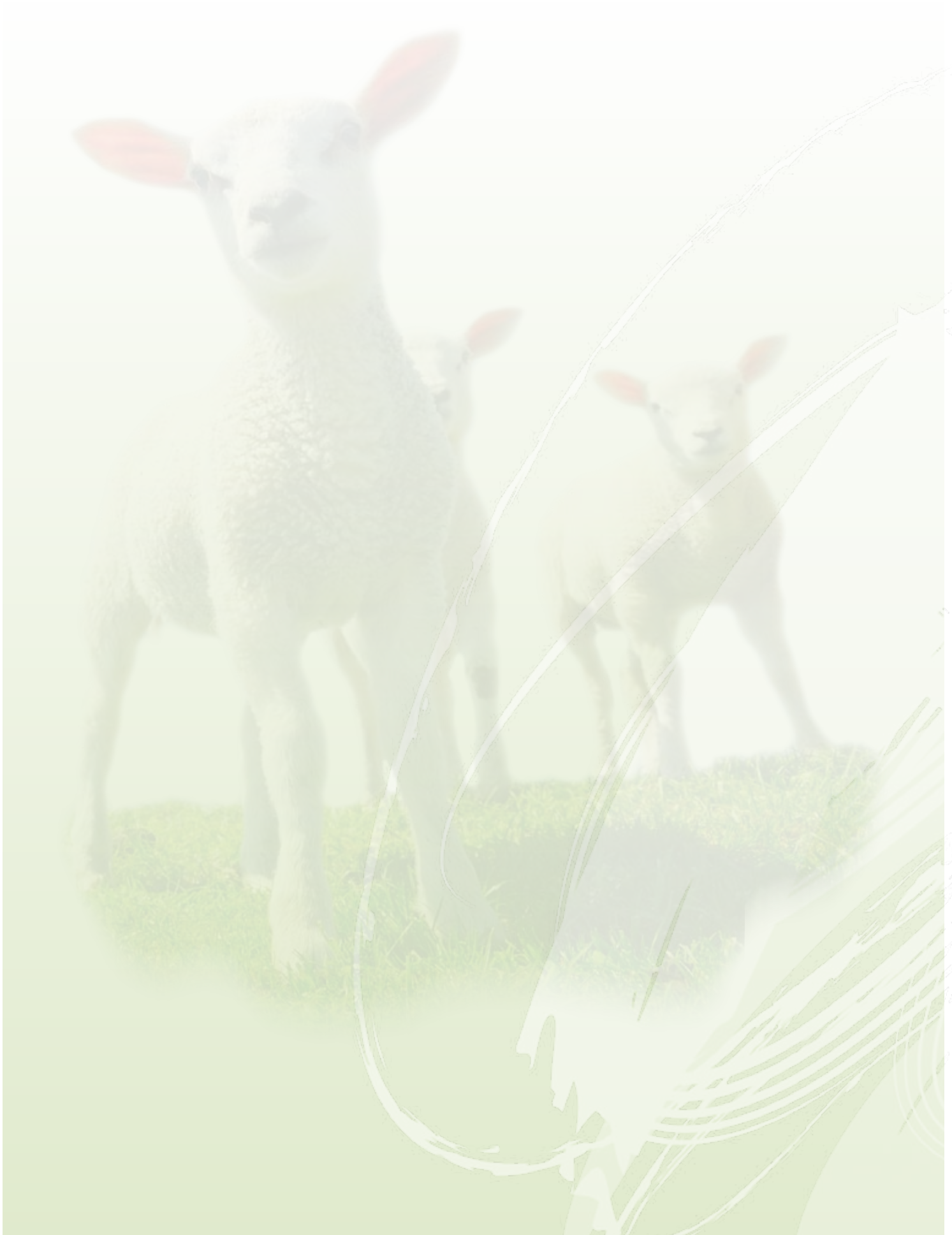


Producing more from less – new metrics for sustainable agriculture in the UK

16th - 17th January 2013

The Best Western Plus Manor Hotel, Meriden





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Welcome

Producing more from less – new metrics for sustainable agriculture in the UK

For reasons of governance, trade and market competitiveness there is an increasing interest in how to measure and compare the impacts of agricultural production systems.

With a primary focus on the UK, this conference will bring together producers, researchers, manufacturers, retailers and policy makers to take stock of work in progress (nationally and internationally), achieve a common understanding of issues, establish new connections, share perspectives and encourage a consistency of approach that will enable productive dialogue between all interested parties.

We would like to thank our sponsors and exhibitors, whose support have helped make our event possible.

Organising Committee

Professor Ian Crute, AHDB

Stuart Knight, NIAB TAG

Dr Colin Merritt, Colin Merritt Consultancy Ltd

Dr Bob Rees, SRUC

Professor Nigel Scollan, IBERS, Aberystwyth University

Professor Alistair Stott, SRUC

Tim Williams, IBERS, Aberystwyth University

Vera Bowen, IBERS, Aberystwyth University

General Information

Important Notice

Please make sure you have not left anything valuable in your cars, even if concealed in your boot.

The hotel holds no responsibility for anything that is stolen.

Meeting Location

Wednesday 16th January – Meeting and dinner will take place in the Aylesford Suite

Thursday 17th January – Breakfast will take place in the Regency Restaurant

Thursday 17th January – Meeting will take place in the Aylesford Suite

Internet Access

Free Wi-Fi is available throughout the hotel. Please ask hotel reception for the code.

Photographs

Photographs will be taken throughout the meeting and may be used for marketing purposes. If you have any objections please notify the organisers at the registration desk.

Check-out on 17th January

Check-out time is 11.00am

Luggage can be stored at reception for check-out prior to breakfast.

Programme

Wednesday 16th January 2013

Arrival, Registration and check in from 12:00 pm onwards.

12:30 – 13:30 **Lunch (Optional)**

Meeting to commence at 13:45 with a word of welcome from Professor Nigel Scollan, IBERS, Aberystwyth University

13:45 – 15:30 **Session 1 Challenges Facing Agriculture**
Aylesford Suite

13:45 – 13:55 **Chair: Professor Geoff Simm, Scotland's Rural College (SRUC)**

13:55 – 14:15 **Agriculture, climate change and food security**
Dr Pierre Gerber FAO, United Nations Food and Agriculture Organisation

14:15 - 14:35 **Sustainable Intensification**
Professor Tim Benton, Global Food Security

14:35 – 14:55 **Land use in the UK - balancing productivity with environmental impact**
Professor Ian Crute, Agriculture and Horticulture Development Board

14:55 – 15:15 **Economics and sustainable land use**
Professor David Harvey, Newcastle University

15:15 - 15:45 **TEA / COFFEE**

15:45 – 17:30 **Session 2 Challenges in large Industry sectors**
Aylesford Suite

15:45 – 15:55 **Chair: Jim Godfrey, R J & A E Godfrey**

15:55 – 16:10 **Sustainability strategies within the food industry**
Jonathan Thomas, Leatherhead Food Research

16:10 – 16:25 **Implications for a big company tool**
Mark Pettigrew, PepsiCo

16:25 – 16:40 **Feed and Food; Corresponding Protein Requirements**
Dr Peter Williams, AB Agri Ltd

16:40 – 16:55 **An Industry Approach to Measuring Progress in Sustainable Agriculture**
Richard Heathcote, Heineken UK

17:00 – 17:15 **Dan Godfrey, BBSRC/NERC Sustainable Agriculture Club**

Wednesday 16th January 2013 continued

17:15 - 18:15 **Breakout session**

18:15 - 18:30 **Feedback session**

19:45 – 20:30 **Drink's reception**

20:30 **Evening Dinner**

Before dinner address: **Lord (Donald) Curry of Kirkharle KB CBE FRAgS
The Centre of Excellence for UK Farming**

After dinner address: **Professor Chris Pollock MA PhD DSc CBE
Aberystwyth University**

Thursday 17th January 2013

09:00 – 10:30

Session 3 Analysis of tools available
Aylesford Suite

09:00 – 09:10

Chair: Dr Tina Barsby, NIAB TAG

09:10 – 09:25

Agricultural carbon calculators choosing the right one
Dr Kathleen Lewis, University of Hertfordshire

09:25 – 09:40

Practical methods for estimating farm level product greenhouse gas emissions
Dr Jonathan Hillier, University of Aberdeen

09:40 – 09:55

Farm sustainability indexing
Dr Bob Rees, Scotland's Rural College (SRUC)

09:55 – 10:10

Technology Platform for Sustainable Agriculture in Spain
Professor Alberto Garrido, Technical University of Madrid

10:10 – 10:30

TEA / COFFEE

Thursday 17th January 2013 continued

- 10:30 – 13:00 ***Session 4 Exemplars targeting progress in sustainability***
Aylesford Suite
- 10:30 – 10:40 ***Chair: Tony Pexton, CEUKF***
- 10:40 – 10:55 ***Measuring what matters – sustainability in practice***
Caroline Drummond, LEAF – Linking Environment and Farming
- 10:55 – 11:10 ***The dairy road map to improving sustainability***
Ray Keatinge, DairyCo
- 11:10 – 11:25 ***Ruminant and Methane emissions***
Dr Eileen Wall, Scotland's Rural College (SRUC)
- 11:25 – 11:40 ***Measuring and improving sustainability - an arable farming perspective***
Keith Norman, Velcourt Ltd
- 11:40 - 11:55 ***More from less: sustainable agriculture and manufacturing***
Richard Stark, British Sugar
- 11:55 – 12:10 ***AgBalance - from sustainability assessment to continuous improvement***
Markus Frank, BASF S.E.
- 12:10 – 12:25 ***Malt Manufacture – Practical Sustainability***
Dr Nigel Davies, Muntons
- 12:30 **Panel discussion and Conclusions**
- 13:15 **Lunch and depart**

Speaker Biographies



Professor Tim Benton
“Champion” for the UK’s Global Food Security programme

GFS is a partnership of the UK’s main public funders of research in food security, including both the research councils and government departments.

The role of GFS is to ensure that strategically important research in this area is undertaken, and to add value to research via interdisciplinary collaboration, alignment and engagement of different communities of stakeholders.

Tim is also a leading researcher, based at the University of Leeds, on agri-environment interactions and finding ways to make agricultural production more sustainable.



Ian Crute CBE
Chief Scientist
Agriculture and Horticulture Development Board

Professor Ian Crute is Chief Scientist of the Agriculture and Horticulture Development Board which he joined from Rothamsted Research in 1999 after 10 years as institute Director. This followed 25 years in Horticulture Research International as a research leader in plant pathology, a Head of Department and Director at Wellesbourne.

Ian’s scientific contributions have been recognised by several awards and are recorded in over 160 publications. He was a Member of the Lead Expert Group for the “Global Future of Food and Farming” Foresight project and currently serves on several Boards and Committees connected with science and innovation within the UK agri-food sector.



Nigel Davies
Manufacturing and technical director of Muntons plc

He has led Muntons's environmental initiatives which won the Sunday Times Best Green Companies award four times and Sustainable Manufacturer of the year in 2011.

He also developed a malting barley carbon footprint calculator specifically for use by growers.

After his doctorate he lectured in biological sciences at London University before joining Brewing Research International (BRi) where over a ten year period he specialized in processability and troubleshooting.

He is also an experienced sensory analyst of malts, beers and wines and regularly acts as an expert witness in cases where food safety of cereals is at issue.



Caroline Drummond MBE
LEAF Chief Executive

Caroline has been running LEAF since it started in 1991.

Over the last 21 years LEAF has built up to be well recognised in supporting and delivering change.

Her work focuses on encouraging more sustainable farming practices and building better public understanding of farming - values that she is personally passionate about.

In 2009, Caroline was awarded the MBE for services to the agricultural industry.



Markus Frank
Global Sustainability & Product Stewardship, Crop Protection
BASF SE

Markus studied biology and philosophy with a major in plant physiology at the Max Planck Institute for Plant Breeding Research, Cologne.

After finishing his PhD in genetics at ZMBP Tübingen, he joined BASF SE in 1999. After a few years in biotechnology research with BASF Plant Science, he worked in Global Strategic Marketing in the area of biopesticides. In 2010, he joined Global Sustainability & Product Stewardship in Crop Protection and took over the lead of the "AgBalance" project.

This project aims to qualitatively and quantitatively assess the sustainability of agricultural production systems and to develop concepts for continuous improvement strategies.



Alberto Garrido
Professor of Agricultural and Resource Economics at the Technical
University of Madrid, Director of the Research Centre for the
Management of Agricultural and Environmental Risks (CEIGRAM), and
Deputy Director of the Water Observatory of the Botin Foundation

His work focuses on natural resource and water economics and policy and risk management in agriculture. Has been consultant for OECD, IADB, European Parliament, European Commission, FAO, and various Spanish Ministries and Autonomous Communities and private companies. He is the author of 123 academic references.

His more recent books are:

- (a) Garrido, A., M.R. Llamas, C. Varela-Ortega, P. Novo, R. Rodríguez-Casado, M.M. Aldaya. *Water Footprint and Virtual Water Trade in Spain: Policy Implications*. Springer. Nueva York. 2010.;
- (b) Martinez Cortina, L. Alberto Garrido, and Elena Lopez-Gunn.(Eds.) *Re-thinking Water and Food Security: Fourth Marcelino Botin Foundation Water Workshop* . Taylor & Francis, Leiden. 2010.
- (c) Garrido, A. and H. Ingram (Eds). *Water for Food in a Changing World*. 2nd Routledge Publishers. 2011. London.



Dr Pierre Gerber
Livestock Policy Officer
Food and Agriculture Organisation of the United Nations

Dr Gerber has a PhD in Agricultural Economics and has over 10 years experience in analysing global livestock sector trends and interactions with the environment. His portfolio spans a range of thematic and geographic areas, including land use by livestock systems, nutrient and energy management in industrial livestock production systems, environmental services in pastoral landscapes and livestock in climate change.

Over the last years, he has been directly involved in the underpinning analyses and writing of three major publications on the livestock sector: "Livestock's long shadow - Environmental issues and options" (2006); "State of Food and Agriculture 2009: Livestock in the balance", and "Livestock in a changing landscape: Experiences and Regional Perspectives" (2010).

Dr Gerber coordinates an on-going programme of work carried out by FAO-AGA and aiming at identifying low emission development pathways for the livestock sector. This involves the analysis of technical information generated by life cycle assessment of livestock commodities, combined with socio-economic data and economic modelling.



Dr Dan Godfrey
Business Interface Manager, BBSRC

Dan studied Sustainable Crop Production at Plymouth University before going on to complete a PhD at Rothamsted Research.

He joined BBSRC in 2009 and works in the Business Interaction Unit where his role is to develop and manage collaborative research initiatives through engagement with the research community and industry.

Dan is currently the Senior Business Interface Manager for the arable sector. His role includes overseeing the management of the Crop Improvement Research Club (CIRC; www.bbsrc.ac.uk/circ), delivering the Horticulture and Potato Initiative (HAPI; www.bbsrc.ac.uk/horticulture) and contributing to BBSRC's strategy in these areas."

**David Harvey, Professor of Agricultural Economics
School of Agriculture, Food and Rural Development
Newcastle University**



Between 1974 and 1979 David was a research economist with the Canadian Department of Agriculture. During that time he achieved some notoriety for analysis of the Crow's Nest Pass freight rates on grain and their consequences, recommending their abolition. The policy was finally abandoned in 1995.

He returned to Newcastle as a lecturer in 1979, where he was complicit in a major effort to establish the costs and benefits of the CAP, modelling the economic flows between member states and their farmers and citizens. He moved to a Professorship at Reading University in 1985, where he was involved with the 'Land Use Allocation Model (LUAM) and also with providing economic contextual analysis to the AFRC (as was then). He returned to Newcastle for a third time in 1987 to take up his present position, and has been involved with, inter alia, the NERC/ESRC Land Use Programme (NELUP), the ESRC's Countryside Change Programme, the Rural Economy and Land Use Programme, and the Centre for Rural Economy.

He was President of the Agricultural Economics Society in 2004/5, is a Fellow of the Royal Agricultural Society of England, and is currently the Editor of the Journal of Agricultural Economics. He received an award for excellence from the Agricultural Economics Society in 2012, for 'outstanding contribution to public policy, industry and the profession'. His research interests focus on policy analysis and policy processes; the European Common Agricultural Policy; international trade policy; rural and environmental policies. He currently worries a lot about the conceptual frameworks necessary to do genuinely interdisciplinary research and to provide sensible and practical policy advice and assessment.

**Richard Heathcote
Sustainable Development Manager, Heineken UK**



Richard Heathcote graduated in Zoology & Biochemistry from Hull and then gained an MSc in Freshwater Hydrobiology from Cardiff.

Richard has previously worked for Bass Brewers, Smiths Crisps and Thames Water in a variety of IT related roles before joining Bulmers in 1988 as an IT Project Manager, followed by a line management role as Production Planning Manager for Bulmers. Richard has now been at Bulmers/Heineken UK for over 20 years.

Richard moved into Sustainable Development at Bulmers in 2001 and that role has now changed to be Heineken UK based. Richard looks after all sustainable development issues across Heineken UK and also co-leads Heineken NV's international sustainable sourcing program. His current UK focus is on more sustainable orchards and barley.

Richard also works closely with colleagues across the UK and Heineken Group on wider corporate responsibility matters and with the Bulmer Foundation (www.bulmerfoundation.org.uk) on Herefordshire related work.

Outside work Richard enjoys hill-walking, gardening, good food & beer and Celtic music.

Jonathan Hillier
Research Fellow and NERC Knowledge Exchange Fellow
University of Aberdeen in Scotland



After acquiring a PhD in Mathematics from the University of York in 1997 he has worked on a range of crop modelling projects. Between 1999 and 2002 he was employed as a research scientist at the James Hutton Institute (formerly SCRI), developing plant-herbivore dynamic models for the risk assessment of GM crops. From 2002 and 2006 he worked at INRA in Grignon, France, and at University College London on architectural crop modelling and its uses in remote sensing for crop monitoring. In December 2006 he moved to the University of Aberdeen to work on assessment of greenhouse gas emissions from energy crop production on the TSEC-Biosys project. Over the last few years his main focus has been on the scientific development and application of greenhouse gas emissions from farming for both bioenergy and conventional food crops.

He is the main developer of the Cool Farm Tool – a farmer-friendly farm scale GHG emissions calculator. The tool was developed in collaboration with Unilever and the Sustainable Food Lab, and has been used by over 15 companies in as many countries. The success of the work has led to the creation of the Cool Farm institute (www.coolfarmtool.org), with founding partners Unilever, PepsiCo, Marks & Spencer, Yara, Heineken, McCain Foods, and Fertilizers Europe, and the aim of involving farmers in the identification of product and region specific best sustainable practices.

Ray Keatinge is currently Head of Research and Development,
DairyCo



Managing and developing a research programme to improve the economic, environmental and social sustainability of the GB dairy industry.

Remit also includes overall responsibility for knowledge transfer programmes, such as the DairyCo Mastitis Control Plan, Healthy Feet Programme, Planning for Profit etc.

Previously, as an independent consultant, co-ordinated the Defra Sustainable Livestock Production LINK programme, a collaborative framework to bring together industry, academia and government to deliver pre-competitive research across the main farmed species.



Kathy Lewis
Head of the Agriculture and Environment Research Unit
University of Hertfordshire

Kathy has worked at the University of Hertfordshire for 18 years where she is head of the Agriculture and Environment Research Unit and a Reader in Agri-environmental science. She also has a small lecturing role at post-graduate level.

Her PhD was in assessing the environmental impacts from agricultural production and her current research interests continue with this theme and focus on sustainable agriculture, mitigating and adapting to climate change, environmental impact assessment and agri-environmental policy development and evaluation.

Much of her research is funded by the European Commission, Defra and UK industry. Before joining the University she spent many years in the scientific civil service with a year seconded to Industry.



Keith Norman – Technical Director – Velcourt Ltd

Keith Norman graduated from the University of Newcastle-Upon-Tyne with an honours degree in agriculture, specialising in crop production. Since then, Keith followed a career in practical farm management for 6 years, initially as a working farm manager and eventually becoming arable manager on a 1200 hectares estate in Lincolnshire. Keith then changed to a more technically based role supporting Velcourt's team of farm managers in crop production technology and managing Velcourt's in-house trials activity in 1989.

Keith has worked on various overseas projects in Spain, France, Germany and Zambia and has been actively involved in Velcourt's recent activities in Russia and the Ukraine.

Velcourts R&D is primarily to provide its team of 46 farm managers with totally independent technical information from which they can make cost effective decisions to optimise yield. In addition Velcourt are partners in many larger, collaborative projects funded by DEFRA, TSB and HGCA.



Mark Pettigrew
Agricultural Sustainability Manager Europe PepsiCo International

Over 35 years in the agricultural supply chain, working in UK and across Europe. Worked with Smiths Crisps, Matutano in Spain, Walkers Crisps and PepsiCo.

Starting out as a fieldsman have held many commercial and technical roles including developing supplier capability throughout Europe.

More recently have headed up the PepsiCo European Agricultural Sustainability programme – working with Walkers Crisps, Quaker Oats, and Lays brands across Europe.

Represents PepsiCo on the SAI platform and Cool Farm Tool Institute.



Professor Chris Pollock is a plant physiologist and was Director of the Institute of Grassland and Environmental Research from 1993-2007

More recently, Chris has been involved nationally in agriculture and land use. He chaired the Scientific Steering Committee for the farm-scale evaluations of GM crops, the Defra Research Priorities Group for Sustainable Farming and Food and the Agriculture, Food and Veterinary Science panel for the 2008 RAE.

He has recently completed a one-year post as Chief Scientific Advisor to the First Minister in Wales. He is currently an Honorary Professor at Aberystwyth University and chair of the Advisory Committee on Releases into the Environment.

Chris is a Fellow of the Royal Agricultural Societies and of the Society of Biology, a past winner of the British Grassland Society Award, an Honorary Doctor of the University of Birmingham and was made a CBE in 2002 for services to the environment.



Dr Bob Rees
Senior Research Scientist and Head of the Carbon Management Centre at the SRUC (formally SAC) in Edinburgh

His work focusses on the measurement and mitigation of agricultural greenhouse gas emissions with a specific interest in nitrous oxide.

He is involved in the UK Greenhouse Gas Platform research programme and participates in a number of other UK and international research programmes in the field of greenhouse mitigation and climate change.

The carbon management centre are actively involved in the sustainable intensification debate, and will be hosting an international conference on the topic later in the year.



Richard Stark, Advocacy Manager Renewable Energy

Richard joined AB Sugar in 2006 to develop their biofuel strategy and is responsible for advocacy for all forms of renewable energy.

He established the shareholder agreement for Vivergo Fuels, ABF's joint venture with BP and DuPont, a large scale UK wheat biorefinery producing bioethanol and animal feed, and is also a Board member of the UK's Renewable Energy Association and Chair of their Renewable Transport Fuels Group, and a Board Member of ePure, the European Renewable Ethanol Producers Association.

He holds a BSc in Mechanical Engineering from the University of Bristol, and an MBA from the Graduate School of Business at the University of Cape Town.

Jonathan Thomas is a Principal Market Analyst within the Market Intelligence department of Leatherhead Food Research



Prior to joining Leatherhead, Jonathan worked for over seven years at Key Note, a leading UK publisher of market information, where he was responsible for researching a variety of different industries, ranging from food and drinks to retailing.

In more than 11 years at Leatherhead, Jonathan has written reports such as Emerging Food Markets, Innovations in the Global Confectionery Market, Key Players in the Global Functional Foods Industry and Food & Beverage Flavour Trends in Western Europe. He is also responsible for editing the Confectionery Industry Update, a monthly publication reviewing market, scientific and regulatory developments within the global confectionery industry.

In addition to his work at Leatherhead, Jonathan has also researched and written reports for a number of other organisations, utilising both primary and secondary research data. Before embarking upon his career in market intelligence and research, Jonathan completed a four-year BSc course at Aston University in Birmingham. There, he gained a second class honours degree in Managerial & Administrative Studies, with a specialisation in Marketing and Market Research.

Eileen Wall is Reader in Integrative Animal Science in SRUC, based in Edinburgh



Eileen studied and trained in University College Dublin and the Roslin Institute/University of Edinburgh. Her main professional activity has focussed on livestock genetics and the development of breeding tools for use by the agricultural community.

Some of her main research outputs include the development and implementation of the fertility index and broadening of the national dairy selection index (£PLI).

Eileen's current research interests and projects include climate change and livestock systems, genetics of fitness traits, development of sustainable and environmental breeding goals and improvements to national livestock genetic evaluations.

Peter Williams BSc: MSc: PhD. FWIRS



Peter has worked in livestock nutrition science and the animal feed nutrition industry for over 30 years. His current role is Business Development Manager for Biofuels with AB-Agri. He is a member of two science advisory groups reporting to Government guiding science policy and this year will be President of the British Society of Animal Science.

He started his career as a UK government research scientist at the Rowett Research Institute in Scotland. Peter has worked with major international companies in Europe including DSM Nutritional Products, Syngenta AG, and Rhone Poulenc Animal Nutrition. His roles have covered Director of Research and responsibilities for commercial R&D and business prioritization in the use of biotechnology in livestock science and feed production.

He is a past member of the Research Council INRA Theix, Labo de Sous Nutrition, an Honorary Fellow of the Welsh Institute of Rural Studies, University of WALES (FWIRS), Honorary Senior Lecturer, Department of Physiology and Nutrition, University of Leeds and was a Board member of European Federation of Feed Additive Producers.

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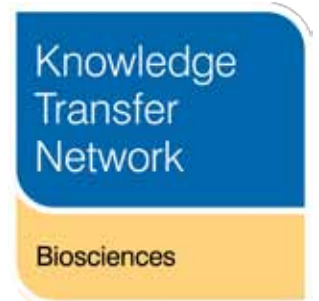
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