



Wilton Park

Programme

Global agriculture, food and land use

How to create resilient agricultural systems in a world of increasing resource scarcity and climate change

Monday 15 – Wednesday 17 April 2013 | WP1229

With increasing scarcity of some key resources needed for global agricultural production, such as water, minerals and energy, and the impact of a changing climate being felt for example through drought and floods, how will agricultural systems need to change to feed the anticipated global population of 9 billion in 2050?

Global agriculture has become more input intensive over recent decades as new technologies have become available and the scale of agricultural production has increased to meet the growing demand for food. This intensive use of resources, such as energy, water and fertilisers, is expected to increase, with availability of some inputs becoming increasingly scarce.

This conference, the fifth in Wilton Park's series on Global Food, Agriculture and Land Use, will focus on how to ensure long-term sustainability of agricultural production, looking at how to husband and adapt the use of inputs and farming approaches to cope with the changing dynamics of increasing global population, dietary changes and climate change.

With the decreasing availability of new agricultural land and the pressures of modern production on existing land the appropriate use of inputs is critical. How to ensure that land use can be both productive and sustainable? What does sustainable intensification mean in practice?

This conference is the fifth in a series on 'Global agriculture, food and land use: the international policy challenges' which Wilton Park is running over three years in association with the University of Exeter. The previous conferences have focused on: volatility and markets; land use; sustainable diet and nutrition; and the role of science and technology in agriculture.

With support from:

**Associated
British Foods
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for sustainable
agriculture

Small**f**oundation

Monday 15 April

1300-1430 Participants arrive and buffet lunch available

1500-1520 **Welcome and introduction**

Iain Ferguson

Chairman, Wilton Park

Reprise: Key learning from the four previous Wilton Park conferences in the series which focused on policy options in response to increased volatility, global land use, the place of diet and nutrition, and the role of science and technology

1520-1600 **1. The challenges of creating resilient agricultural systems in the face of resource scarcity and climate change**

What are the challenges facing global agricultural production in the face of resource scarcity and climate change in the period till 2050? How will constraints on inputs be manifested and how might agricultural systems need to change?

Michael Winter

Director of Food Security and Land Research Alliance; Co-Director, Centre for Rural Policy Research, University of Exeter, Exeter

1600-1645 **2. The inputs: confronting the statistics**

Assessing the current statistics and trends of world agricultural production. Where are the productivity gains being made and how does that relate to the inputs used? What are the 'inconvenient truths' of inputs in today's agricultural production?

Terri Raney

Senior Economist and Chief Editor, The State of Food and Agriculture, Food and Agriculture Organisation (FAO), Rome

1645-1730 Photograph followed by tea/coffee

1730-1900 **3. Understanding the vulnerabilities of inputs to agriculture: from climate change to resource insecurity**

What are the vulnerabilities in relation to inputs? How is climate change impacting on agricultural production and what trends for the future? What does scarcity of agricultural inputs such as water, nitrates, phosphates and potassium look like in practice? Where are the changes in inputs/resources likely to be felt soonest? Which types of farming systems are most vulnerable? Where are the current efficiencies in input use and productivity?

David Powlson

Lawes Trust Senior Fellow, Department of Sustainable Soils and Grassland Systems, Rothamsted Research, Harpenden

Shumin Liang

Professor, Institute of Agricultural Economics and Development, Chinese Academy of Agricultural Sciences, Beijing

John Mutunga

Chief Executive, Kenya National Federation of Agricultural Producers, Nairobi

1900 Drinks reception

1930 Conference dinner with after dinner speaker

Stefan Gates

TV Presenter, Writer, Food Adventurer, 'The Gastronomer', London

Tuesday 16 April

0800-0845

Breakfast

0900-1030

4. The reliance on oil in current agricultural production

How will advanced farming systems have to change to cope with reduced oil supplies or more costly energy? Is there a risk of developing countries ending up with the same reliance on oil? What should be done to transition to non-oil / low-oil systems? Will supply stress see a move to more farming in tropical regions which are less energy-intensive? What role for subsidies? What role do biofuels play?

Jeremy Woods

Lecturer in Bioenergy, Centre for Environmental Policy, Imperial College London

Jonathan Scurlock

Chief Adviser, Renewable Energy and Climate Change, National Farmers' Union, Stoneleigh

1030-1100

Tea/coffee

1100-1245

5. Managing water: is efficient use enough?

What strategies can be implemented to deal with less predictable rainfall? How to promote more efficient use of water? How to protect existing supplies from over-exploitation and contamination? What role for hydroponics? What future for farming in arid regions?

Water management

Salamatu Garba

Executive Director, Women Farmers Advancement Network (WOFAN), Kano

Livestock in Brazil

Roberto Sainz

Researcher, Embrapa, Planaltina, Brazil

The use of hydroponics

Paul Challinor

Director, May Barn Horticultural Consultancy Limited, Nantwich

Hydroponics as fodder: the Goa experience

Narendra Pratap Singh

Director, ICAR Research Complex for Goa, Indian Council of Agricultural Research, Department of Agricultural Research and Education, Ministry of Agriculture, Goa

1245-1345

Lunch

1345-1500

Discussion with local producers about different agricultural systems

(Outside if weather permits)

Richard Goring

Wiston Estate, Steyning

Tim Hassell

Farm General Manager, Goodwood Farm, The Goodwood Estate Company Ltd, Chichester

1500-1630

6. Boosting soil and plant nutrition

How to increase nutrients in soils and reduce the need for inputs? How to ensure efficient use of fertilisers? Will natural alternatives become more attractive as synthetics become more expensive or harder to come by? How best to share low impact techniques such as minimum or no till agriculture? How to recycle farm animal manures/compost/sewage more effectively for agricultural use? What difference will greater use of inputs make to the developing world? How can markets be encouraged for these products in the developing world?

Amit Roy

President and Chief Executive Officer, International Fertiliser Development Centre, Muscle Shoals, Alabama

Helen Browning

Chief Executive, Soil Association, Bristol

Roel Merckx

Chair, Technical Advisory Committee, Soil Health Program, Alliance for a Green Revolution in Africa (AGRA), Nairobi; Professor in Soil Fertility, Faculty of Bio-Science Engineering, KU, Leuven

1630-1700

Tea/coffee

1700-1800

7. How can science and technology ensure better use and management of inputs?

The changing role of mechanisation of agricultural production

How will the use of engineering technologies increase the precision of farm management practices and ensure more efficient use of inputs (e.g. targeted fertiliser application or spraying or pest and disease diagnostics)? To what extent will agriculture in developing countries mechanise?

Simon Blackmore

Head, Engineering Department, Harper Adams University, Newport

Examples of the application of science and technology

What is being done to use inputs more effectively in challenging areas? How can this technology be exported to other areas? Can the science adapt with the pace of environmental change?

Mark Tester

Professor of Bioscience, Division of Biological and Environmental Sciences and Engineering, King Abdullah University of Science and Technology (KAUST), Thuwal

1800-1915

8. How to ensure resilient farming systems?

Discussion in smaller working groups

Looking at different agricultural systems and how they can be more resilient in relation to inputs. Each group to debate some of the following questions:

- What would a resilient system look like?
- What changes need to occur to make resilient systems a reality?
- Who should invest in technology?
- What makes technology transfer effective?

Examples of groups with discussion group chairs

1. Hi-tech and developing technologies

Richard Wakeford

Consultant, Rural Strategy, Winchcombe

2. Organic/ low input

Mwanahamisi Salimu Singano

Economic Justice Campaigns and Advocacy Manager, Oxfam, Tanzania

3. Small-holder agriculture

Steve Wiggins

Research Fellow, Rural Policy and Governance Group, Overseas Development Institute (ODI), London

1930 Drinks reception

2000 Dinner

Wednesday 17 April

0800-0845 Breakfast and check out

0900-1015 9. What would a resilient global farming system look like?

Feedback from discussion groups and plenary session

What would a resilient system look like? Would a resilient system look the same in the developing and developed world? Does the developed world have more of a journey to make? Who should invest in technology to support subsistence agriculture? What changes need to occur to make resilient systems a reality?

Mike Gooding

Managing Director, FAI Farms Ltd, Wytham

Michael Njuguna

Director, Business Development; Chief Financial Officer, Africa Harvest Biotech Foundation International, Nairobi

1015-1045 Tea/coffee

1045-1215 10. Resource sharing and rationing: framing national and international policies

What are the mechanisms to promote greater fairness in sharing resources and inputs to encourage greater sustainability of agriculture? How do national policies such as those in US, China or India need to change to respond to resource scarcity and climate change? How will the European Union's reform of the Common Agricultural Policy ensure sustainable intensification? How should the World Trade Organisation respond to the need for international policies?

Martin Nesbit

Director, EU and International Affairs, Department for Environment, Food and Rural Affairs, London

Médi MOUNGUI

Counsellor; Deputy Permanent Representative, Permanent Representation of Cameroon to Food and Agricultural Organisation, Rome

1220-1300 11. Concluding round-table discussion

(Including discussion on the final conference in the Wilton Park series on Agriculture, food and land use)

Chair: **Michael Winter**

Director of Food Security and Land Research Alliance; Co-Director, Centre for Rural Policy Research, University of Exeter, Exeter

1300

Lunch

1400

Participants depart