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SUPPLY IS TOO IMPORTANT TO LEAVE TO CHANCE

Thursday 13th November 2008, Wellcome Trust Genome Campus, Hinxton, Cambridge

Conference Report

Background to the conference

Conditions in the agricultural and food markets have changed over the last 2 years. From low and relatively stable prices in late 2006, we have witnessed first a substantial peak in agricultural prices starting in spring 2007, followed by a subsequent collapse for many commodities back to levels similar to those seen in 2006. Unfortunately, many costs of production which spiked upwards have failed to fall back as rapidly and many farmers are now facing the prospect of substantial losses in the 2009 'crop' year. The underlying causes for this market turbulence are complex. Whilst agriculture has clearly been significantly affected, politicians across the globe have also faced growing consumer unrest at the rapid increase in food prices which this market turbulence has triggered, and in some poorer countries physical food shortages and food riots have been seen.

It was against this backdrop that the East of England Sustainable Food and Farming Group and the East of England Development Agency (EEDA) hosted a series of business breakfasts at the Suffolk, East of England & Norfolk county shows in May & June 2008 to begin the process of looking at how the region should respond to the changes taking place in the food sector. Whilst these meetings obviously occurred at a time of rapid short term changes in prices, the region deliberately set out to look at the medium and long term challenges the region faces. These business breakfasts reached a broad consensus around the need for action in four major areas (the full report from these breakfast events can be accessed at www.eeda.xxx):

- The promotion of a Supportive Economic and Commercial Environment to encourage commercial investment in sustainable food production;
- A Refocused Research and Development effort to promote much more rapid commercialisation of the UKs World class research base in the agri-food sector;
- Enhanced Skills and Recruitment of New Entrants within the agriculture sector to provide a motivated, productive and dynamic workforce;
- The development of a Clearer & Stronger Regional & National Voice on the priorities for the whole food chain.

In the East of England the agri food industry is a key sector within the regional economy, and the region is arguably blessed with some of the most productive farmers and land in the World. The region also

contains an unrivalled concentration of research organisations and has often been at the forefront of technological innovation in the sector. The conference on the 13th November 2008 was designed to explore the messages from the earlier work with a wider range of stakeholders. To do this the conference set out to explore a number of linked issues:

- How Secure is food supply in the UK? And where will future food supply come from?
- Is there scope to increase UK production? And is it necessary to do so?
- What factors are limiting production?
- What effect will increased production have on the environment?

Summary of key issues raised at the conference

The conference built on the previous events and was structured around the questions posed above.

Professor Robert L Thompson explained how the Global population was projected to increase by 40% by 2050 to circa 9.3bn. Rapid economic growth in many of the poorest countries in the World would also lead to a large increase in the population which can afford animal protein. Demand for biofuels, timber and other raw materials will together with the increase in population and changed diets, lead to a doubling of global demand for farm products. Unfortunately urbanization, continuing loss of soils, climate change and resource constraints (in particular water and energy) will make production harder to deliver. To address these challenges we must embrace new technology, but even if we do this we may still find that the long term decline in food prices is reversed.

Tom Hind of the NFU explained that the circumstances have changed markedly and we will have to increase food and fuel production whilst also enhancing our environmental record. We must not ignore the need to produce in the UK, because the global challenge and climate change will arguably make UK production more important to global food security. We must ensure that the UK is ready to gear up production when markets dictate, and government policy must make sure we are prepared for this.

Rob Cooke of Natural England stressed that food production and the environment are inextricably linked, each depending on the health of the other. Whilst we must not ignore the need to produce more, we must also avoid the problems of the past and ensure that when we increase production we do so in environmentally responsible ways. Key challenges will relate to greenhouse gases, the depletion of soil carbon, biodiversity and the need to improve the global distribution of food.

Professor Allan Buckwell outlined the CLA vision that a new Food and Environmental Security (FES) policy should be created from a refocused CAP. This FES policy must be backed with a secure and realistic budget. Central to the challenges we face will be climate change which is man-made and happening fast, the FES must incentivize private businesses to respond positively to these challenges. Even if we do act, there is, as raised by Professor Thompson, a risk that the long term decline in real food prices will be reversed.

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Professor Ian Crute of Rothamsted Research explained that the research base to support production research has been eroded over the years, and this is now a serious problem which will, unless addressed, restrict our ability to create the science we need to solve the production and environmental challenges ahead. Greenhouse gases, water, fossil fuel and carbon management will be key issues which research will have to address. Whilst Professor Crute believed that our broadacre crops will be the same in 2030 as today, we will have to deliver more output with less resources and this demands the use of new breeding techniques which can exploit the potential of a larger genome.

David Lawrence of Easton College outlined the skills and labour supply challenges which are being faced by the industry. In common with, but arguably more acute than other industries, we are facing an ageing workforce at the same time as the demand for new skills, particularly higher level skills, continues to grow strongly. Unfortunately our industry has a poor reputation amongst the wider public and we will have to work very hard to secure a viable share of the workforce. It is critical that we raise the profile of the industry and engage in initiatives such as the new 14-19 curriculum and strengthen the progression of the workforce to higher level education.

Martin Redfearn of Barclays explained that the current problems with credit and cashflows must not divert us from recognising the need for long term investment to help us feed the World. Whilst short term we may see some decline in the demand for premium products, total food demand is unlikely to fall. We will though, see more volatility in markets and it is vital that the farming sector collaborates more both within the sector and up and down the supply chain. We must also learn to use risk management and collaborate to help manage volatility. Whilst the banks will continue to lend to agriculture, which has a good track record on borrowing, businesses will have to present sound business plans and may find that at least in the short term the costs of credit rises.

Lord Iveagh of EEDA stressed that the food and farming sector are vital to the regional economy and account for about 10% of its output. EEDA is ready to help the sector by making sure that business support and skills provision more closely meets the needs of the sector, by promoting more technology transfer and through the targeted use of the Rural Development Programme for England (RDPE). However, EEDA will not try to tell businesses what they must do, and the majority of development must be driven by commercial businesses making sound commercial investments as they have always done. EEDA believes the region has the expertise and businesses to lead the future development of the sector.

Sir Don Curry stressed the need for the food and farming sector to embrace the need to manage both the environment and production. This would demand more collaboration which, whilst it has increased in the last few years still has the potential to deliver more benefits to the sector. We will need to ensure we adopt market focused solutions and make more use of risk management. The sector has made big steps forward in environment management, but we will need to go further as we respond to new challenges such as climate change. The SFFS team within DEFRA also recognises the need for more effort to be directed at reconnecting consumers and to support a changed research agenda, but will look to the industry to play its part in both defining and helping to facilitate these agendas.

Marie Francis concluded proceedings by stressing that the time for action was now because whilst the industry stood ready to respond to the challenges it faces, production takes time to develop and we must make sure that we are ready to respond to the future demands of the market.

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Conclusions

The conference rationale was to develop the areas which the earlier events in summer 2008 had clearly identified. The key issues to emerge in relation to how we can progress these four areas were:

1. The promotion of a Supportive Economic and Commercial Environment to encourage commercial investment in sustainable food production. It was recognised that the number of businesses in the sector will continue to fall, and it is important that government policy and support programmes recognise the need to support the more progressive businesses which are hungry for change and to adopt new ideas. To do this we need to:

    a. Refocus the CAP to ensure that we have a well resourced policy which supports both food production and the environment. A future policy, along the lines of the FES proposed by the CLA, must reward farmers adequately for delivering environmental services and enhance the advice they receive to deliver real benefits

    b. Manage resources more effectively, with a need to maximise productivity in the more productive areas of the World, so that other areas can be managed for the environmental services they provide

    c. Support free trade in food to address the growing imbalance between where people live and where we can produce food - NW Europe is arguably well placed to meet the growing global demand for food exports and should respond by increasing production to meet its global responsibilities whilst demonstrating to the World how this can be achieved sustainably

    d. Review the operation of the food supply chain and support projects which work with businesses to increase supply chain resilience by supporting a diversity of supply chains which meet market needs including local and global, conventional and organic

    e. Ensure that we optimise the productivity of the best land by supporting better soil management and reducing the risk of flooding

    f. Ensure that regulatory levers are used responsibly to ensure government policy supports sustainable production and avoids damaging regulatory changes (e.g. reduction in SAWS, removal of ABAs and EU pesticide legislation) which whilst well intentioned restrict production

2. A Refocused Research and Development effort to promote much more rapid commercialisation of the UKs World class research base in the agri-food sector. The conference concluded that both the focus of research needs to evolve as well as developing more effective methods for communicating research outcomes to business. Areas which will need attention include the need to:

    a. Support the UK research base for food production to strengthen its ability to respond to the production challenge

    b. Work with research centres and research funding bodies to ensure that there are clearly funded pathways in place to ensure that new science is communicated quickly and effectively to all those businesses which can make use of it

c. Work with the EU to ensure that we realise the benefits which modern plant sciences can offer in terms of using a broader genome to address both production and environmental problems

d. Support research which provides the tools to address the problems created by climate change and resource pressures, by focusing on efficient resource use, the reduction of waste, the reduction of environmental impacts, improved soil management and better water resource management

3. Enhanced Skills and Recruitment of New Entrants within the agriculture sector to provide a motivated, productive and dynamic workforce. The conference concluded that there is both an immediate problem to increase the skills of the existing workforce as well as longer term challenge to change the perception of the industry to attract new recruits. Key areas where action can be taken include the need to:

   a. Strengthen the College base in the region which supports education for farming and the food chain, including working to develop stronger links between educational providers and the businesses in the sector

   b. Promote the sector within schools, amongst parents, the careers advisory service and wider public, to demonstrate the wide range of attractive careers which the sector contains

   c. Engage actively with the reformed 14-19 curriculum which is providing a new route into the sector, and which if developed and delivered effectively will increase recruitment

   d. Promote more progression to higher level skills both for those in the workforce and amongst new entrants. This must include scientific skills as well as the use of advanced management skills and risk management

4. The development of a Clearer & Stronger Regional & National Voice on the priorities for the whole food chain. Delegates were concerned that the sector needed to ensure that it did not miss the opportunity provided by the changed market position of agriculture. To do this it was felt that the sector must seek to:

   a. Raise its profile across government and with the public by explaining how the industry can help the country meet the food, raw material and environmental challenges it is facing

   b. Work with the science community to promote the need for new technology to be developed to help the industry fulfil its production potential whilst also reducing its environmental impact.

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Full Conference Proceedings

The agenda was structured to address the four key issues raised through the previous work in the region (see appendix 1 for the full agenda):

- The keynote presentation by Professor Robert Thompson set the scene on the global challenge for production which will be faced in the next 40 years;
- The morning subsequently dealt with Future Production and how we can develop a supportive economic and commercial environment that encourages sustainable food production;
- During the afternoon the conference looked at the tools which we may need to employ to address the production challenge: looking at research and development; the need for new skills and new entrants; and the financial resources needed to support an increase in productive capacity;
- The conference ended with summaries of the challenge faced at the regional level from Lord Iveagh, EEDA board member, and how national policies may need to be developed from Sir Don Curry, Chairman of the government's Sustainable Farming and Food Group.

The conference was attended by xxx people including representatives of yy,xx,zz etc.

Key messages to emerge from the conference

Whilst this section of the report is of necessity a summary of the issues discussed, further details of the proceedings including a full set of slides, speaker biographies and podcasts (?) can be accessed at http://www.eeda.org.uk/3387.asp

Welcome, Richard Ellis, Chair, East of England Development Agency

Richard Ellis outlined that the regional challenge has 3 main components which this conference should address:

- how can we increase production and that we need to be clear about the role regional businesses and organisations can play in helping to achieve this;
- what constraints on production we face and how can these be addressed;
- how we balance the need for production with care for the environment.

He also reported that Barbara Follett, Minister for the East of England had sent a message of goodwill for the conference which recognised the importance of the debate, and the positive way in which farmers had responded to the many challenges in food production in recent years, whilst also managing much of the region's high quality landscape. The Minister also highlighted the need for the region to play a continuing role in future production. Richard Ellis finished by urging the conference to focus on solutions, rather than dwelling on problems.

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Keynote address: The need for production, Professor Robert L Thompson, Gardner Chair in Agricultural Policy, University of Illinois, USA (via satellite link)

Professor Thompson outlined how the growth of global population and changed diets are increasing the Global demand for food. The mid range estimate from the UN for 2050 is that the global population will have increased by 40% to 9.35billion. Virtually all of the growth will be experienced in low income countries (+47%) with at the extreme an increase of 110% predicted for SubSaharan Africa, against an increase of only 6% in high income countries.

In addition to population increase, we are still witnessing a rapid urbanization across much of the World with the 50% threshold having been exceeded for the first time in 2008, and projections suggesting the urban population will reach 70% by 2050. Globally economic development is lifting many previously poor people out of absolute poverty and this is changing their dietary choices. Whilst some countries such as China have made significant progress, China still has 35% (and India 80%) of its people living on less than £1 per day (the level below which food choice tends to be constrained). As rapid development in these countries continues many of these people will have incomes which allow them to exercise far more choice over the food they eat, and history shows that this leads to diets much higher in animal proteins which are far more resource intensive to produce.

Taken together these factors are projected to double World food demand by 2050. But, whilst food alone is likely to witness significantly increased demand, projections for agriculture also need to consider how the increased demand for forestry products, fuel and renewable materials will increase global demand for farm output. The US Energy Bill in 2007 mandated an increase in bioethanol production from maize by 2022, which would see it then accounting for the equivalent of 40% of the current harvest.

Global projections also show a growing inbalance between the food production potential of various regions and their population. In particular the rapid growth in population in many low income countries will outstrip their ability to produce their own food. The conclusion must be that the global trade in food commodities will increase.

In theory one way in which global food production could be increased would be to bring more land into production. However, once you have taken account of land which has physical, soil or climatic constraints you only have about 12% of the global land area which is suitable for production. Except for a few areas in Eastern Europe most land which can be cultivated and productive is currently in production, unless the World is prepared to cut down further forests with consequential and probably unacceptable impacts on climate change and biodiversity.

If you look at global production potential research shows that the greatest productivity can be delivered in the maize belt in America, parts of Argentina, the temperate areas of NW Europe and Manchuria. Whilst some areas of SubSaharan Africa also have a high potential, political instability makes this hard to deliver.

In much of the World one of the most serious future constraints is increasingly seen to be water supply. Globally 70% of fresh water is used by farmers, and with climate change and increased demands from a growing urban population this pressure on water resources will continue to increase. The impact of climate change on crop growth is complex because whilst some areas will gain (e.g. Canada, Siberia, parts of Scandinavia and Scotland) other areas will see production fall.

The challenge is therefore to double production, in a World with less water, at a time of land loss to erosion and urbanization. Better research and more effective technology transfer does offer the prospect of helping to meet this challenge, but most evidence suggest that the gains from classical plant breeding have already been exploited. It seems inconceivable that we can meet the production challenge, whilst also creating plants which can cope with climate change without using new breeding techniques. Using this technology could allow us to meet the challenge and be good for farmers, but do not expect the road to be smooth. Long term, whilst commodity prices will probably rise there will be a need to be much better at managing risk to cope with the large market price movements we are likely to see.

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Questions to Professor Thompson

Question: In the UK we do pay for water, but the forthcoming Global Water Forum in Turkey has less than 20% of its agenda devoted to water for food production, and water fails to register in the global Millenium goals – How can we ensure the profile of water is raised?

- Water is a critical resource but we must be more efficient in how it is used. We cannot for example use water to irrigate crops such as wheat, it will have to be reserved for crops where the economic and productive returns are greater.

Question: It could be argued that the US stance on agricultural trade has increased the recent price spikes, how can this be addressed?

- The US administration will need to be more positive about the Doha round, but US farm organizations are keen to block some of the reforms. Doha is essential for global prosperity and it is important that we guard *against* protectionism which has clearly led to larger spikes in food prices over the last year. This has not only affected many consumers, it has also done real damage to the reputation of free trade and could be described as foolish public policy, our challenge going forward has to be to restore confidence in World trade.

Question: in common with many other consumers I eat too much, will consumers reduce consumption and help us address the production challenge?

- Across the World increased economic growth has led to a change to a diet richer in meat. If we all ate less, both in total and less meat, this would reduce demand, but to date no country has been prepared to restrict consumer demand for food.

Question: how can we raise the importance of post harvest technology to help reduce waste?

- We must increase our productivity and addressing post harvest losses is certainly needed, and would stop a criminal *waste* of resources. R&D can help us considerably to address this problem.

Question: Is it feasible to foresee a system in which we prioritise either high productivity or bio-diversity in different parts of the World, and to use fiscal transfers to support areas of high bio-diversity?

- There has been significant discussions about the potential to pay countries with areas of significant biodiversity, e.g. Brazil, to maintain these areas through compensation. Without these types of systems biodiversity loss will continue and we will also lose the climate moderating benefits of these areas.

Session 1: Future Production – Developing a supportive economic and commercial environment that encourages sustainable food production, chaired by Sir Don Curry, Chair, Sustainable Food and Farming Group

Responding to the global challenge, Tom Hind, Head of Economic & International Affairs, National Farmers' Union

The challenge facing the farming sector is multifaceted and includes both food and energy within an environmental context. Sound and sustainable management of the environment is important to everyone, not least farmers, and trade offs are inevitable.

Whilst some people argue that UK self sufficiency is not important because the UK is a trading nation and has always imported large quantities of food, this position is short sighted and increases risks. If we were to ignore UK production we would transfer the global production challenge to poorer countries, leading to even greater competition for resources in these nations with consequential socio-economic impacts.

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Climate change will change competitive advantage and more research suggests the UK is well placed to increase production unlike many other parts of the World. Finally World trade has been shown to be fragile when faced with product shortages, and with the conclusion of the Doha round at least 2 years away we cannot rely on World trade to guarantee supply.

Given the massive shifts in commodity markets, the UK must be ready to gear up productivity and production if market needs so dictate, and government policy must be able to accommodate this.

The East of England is one of the most productive regions in the EU and accounts for a quarter of UK farming income. Whilst some seem to see this as an embarrassment and evidence of environmental harm, the food and farming sector across the Fens is responsible for £1.7bn of economic activity and employs 7% of the workforce (17,500 people). It has also been diversifying and improving management of the environment. The East of England could and should act as the leader in demonstrating how to increase production in a sustainable way, but to do this it needs a more supportive environment, including:

- at the EU level the UK government must adopt a more constructive dialogue on the future of the CAP, everyone accepts the CAP needs to evolve and great progress has been made, but we must argue for the CAP to evolve further, and not attack its very existence;
- UK government policy must support competitiveness and we need to avoid new policies such as the recent decisions on Agricultural Buildings Allowances, the Seasonal Agricultural Workers Scheme and a possible replacement for set aside which make production harder to deliver;
- Flood risk spending has increased, but the targeting used seems to ignore the position of agriculture, this is not sustainable going forward;
- Whilst the work which the region has led on water resources involving the Environment Agency, NFU, Cranfield and UK Irrigation Association has been very useful, this must be seen only as the start of a longer term strategy to improve efficiency and secure water for future food production;
- The planning system must support more diversification within agriculture to help spread risk and to help farmers cope with more volatile markets;
- The region needs better infrastructure to help food producers reach markets efficiently;
- Local food development needs developing further because of the role it can play in helping to make the food chain more resilient;
- Developments such as those at Camgrain and Network Grain should be supported, but we need more similarly ambitious projects to help develop greater supply chain resilience;
- Without a greater focus on R&D to support production we will not be able to reverse the decline in productivity growth (now 1% against 4% per annum 20 years ago), the East of England has a World Class research base and we need to champion this more and to ensure that it is effectively transferred to the industry;
- A continued focus on upskilling in the sector is critical if we are to meet future challenges.

Given the critical nature of global food supplies we must support more investment in productive agriculture even at a time of budgetary constraints.

Environment & production – Friend or Foe? Rob Cooke, Head of Land & Water Policy, Natural England

The future security of food production relies on a healthy environment and we must accept that various land uses will continue to compete for space in the UK. Food security is dependent on the amount we produce but also requires us to distribute, consume and manage our supplies well.

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In looking forward we will have to manage a series of key environmental challenges:

- Nitrous Oxide (NOx) emissions which account for 7% of greenhouse gas emissions have been reduced in total in the UK substantially since 1990, but so far the emissions from agriculture have not declined and now account for over 70% of total NOx emissions;
- The figures for methane show similar trends, with a large overall decline masking the fact that agriculture's emissions have not fallen;
- 18% of total greenhouse gases (GHG) are from the agriculture and food sector with agriculture as the single largest contributor in the supply chain;
- An estimated 13mt of carbon are lost annually from soils and this both contributes to climate change whilst also reducing soil productivity;
- Whilst progress has been made on reducing the levels of nitrate fertilizer used (without reducing yields) with both environmental and farm cost saving benefits, the concentration of nitrates in water has remained high in the East of England and presents an ongoing challenge;
- Across the UK many bird habitats have been under pressure with resultant declines in numbers, but of all the major habitat groups it is farmland specialists which have declined most markedly with a 60% decline being recorded since 1966;
- Food nutritional quality has suffered a long term decline in trace elements and minerals. Whilst globally 850m people are undernourished, the World also has 1bn overweight people and 300m who are obese. In the UK obesity is now reckoned to cost the NHS £6bn (9% of the budget), and by 2050 60% of the population will be obese on current trends.

In address these problems and improve food and environmental security we must make some significant changes including:

- Manage the environment more effectively e.g. better management techniques for nutrients, soil, water, energy and GHG emissions;
- Manage the supply chain more effectively e.g. reducing waste;
- Addressing diet and nutritional issues to increase human health, whilst also reducing the negative consequences of unsustainable food production practices.

In conclusion food security demands that we also address environmental problems because production is dependent on a healthy environment. Without a healthy environment we cannot hope to have a healthy and adaptable farming system.

Policy balance - production & environment, Professor Allan Buckwell, Policy Director, Country Land & Business Association

The CLA is very keen to work with the NFU and others to develop a co-ordinated programme to address the pressures we face and support all the points made by Tom Hind for the NFU, but to balance this Allan's presentation focused the EU level.

Whilst talks on the EU budget are suggesting a big cut in the agricultural budget this ignores the fact that farming and the environment are inextricably linked. At EU level we must therefore argue for the CAP to evolve into a Food and Environmental Security (FES) policy. This FES policy must have a secure budget, but this is being challenged by the UK government.

Globally the projected increase in food demand is likely to outstrip production once climatic and resource constraints are factored in. This suggests we may see a long term reversal of the downward

trend in food prices we witnessed throughout the 20th Century. If we continue to downplay the importance of production in Europe, there is a real chance the EU contribution to the global production challenge will fall.

The environmental challenge we face is not simply one of biodiversity, soil, water and air quality. We must also respect and protect our cultural landscape, an area in which the food and farming sector is strong.

In Pre-industrial times, whilst we had low productivity we also had a low impact on the environment. As we moved through the industrial age, whilst we have increased productivity markedly, we have also created large impacts on the environment. Looking forward to a post industrial age our challenge will be to maintain or increase productivity still further, whilst significantly reducing our impact on the environment. This would be challenging enough, but we have to achieve this against a backdrop of increased volatility, climate change and other significant risk.

Climate change is happening, is man-made, and its impact will be global. Whilst some areas will be able to increase production due to climate change, production in other areas will fall, and we will face more volatility in production (and also therefore markets).

Taking these changes together they may well lead to a situation in which we see sustained real food price increases for the first time in 200 years. This will be created by a need to increase agricultural productivity, which in turn will increase environmental impacts and create a need for higher payments to support the environment.

So what should a FES policy look like? It must 'incentivise private sector rural resource managers to produce the socially optimal quantities of high quality food and fibre, renewable energy, biodiversity, landscape, heritage, and soil, water and air management'.

In Europe we must seek to feed our own population, whilst also recognizing that we may well need to provide more food to other parts of the World which will struggle to feed themselves, due to climate change and population growth. This will necessitate profitable farming and a wide range of support measures including: R&D, restructuring, collaboration and a focus on quality as well as production.

If we are to achieve food security without creating environmental degradation we must simultaneously address many overlapping areas. However, there is a risk that if we fail to do this effectively food production will win out over all the other objectives, because failures in this area have massive short term impacts. We cannot achieve the challenges we face without dramatically improving our capacity in agricultural extension.

At the EU level we must also resist the pressure to substantially reduce the agricultural budget. The current budget of 53bn euro per annum is only 1% of EU public expenditure and less than 0.5% of EU GDP. Is it realistic to cut this when the sector stewards 80% of the land area, employs 5% of the population and contributes 3% of GDP?

In conclusion, the pressure on land for producing food, energy and the environmental goods will grow and there will continue to be pervasive market failures. Food and the environment are interdependent. We must work across Europe to create a Food and Environmental Security (FES) policy which can allow us to make the same progress in the 21st Century as we achieved in the 20th Century – a new green revolution.

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Panel discussion with the session speakers joined by Susanna May, Deputy Director, Food and Farming Group, Defra

Opening statement by Susanna May: DEFRA is pleased to have been invited to participate in the conference, and is taking food security very seriously. It published a discussion paper in July which built on previous work in 2006. The last year has though, created a need to review the position and to consider whether we need to do more, or to do new things. DEFRA is also concerned about food from the consumer perspective and is charged with ensuring that consumers have access to sufficient high quality food to meet their needs. Whilst DEFRA has a Department Strategic Objective (DSO) for a Thriving Food and Farming sector, this must be seen within the context of a global supply challenge. DEFRA is keen to work the regions to identify solutions which will work for them, and those who wish to get involved can contact the team responsible for food security and access updates on the policy position at: http://www.defra.gov.uk/foodrin/policy/security.htm

Question: how can we be more effective in using farm extension to get support to farmers, and what form should this take?

- Tom Hind – we need the new Agricultural and Horticultural Development Board (AHDB) to do more to support near market research and extension. We also need to ensure that all research projects include dissemination within them, and longer term we need the broader food chain to play a wider role dissemination.
- Rob Cooke – Natural England already offers an extensive range of advice and guidance on agri-environmental work and will continue to review and develop this.
- Allan Buckwell – there is a need to engage the private sector much more in providing advice in conjunction with the public sector.
- Sir Don Curry – there is undoubtedly a disconnect in the science chain with not enough support given to knowledge transfer, and we must all work at both regional and national level to get more support for transfer activities.

Question: the possible re-introduction of set-aside cannot possibly make sense in the current climate particularly on the best land, and given the fact that this region now has a very high % of its farmland in environmental stewardship (ES) how can it be justified?

- Sir Don Curry – the interim conclusion from the high level group set up to look at this issue is that whilst set-aside clearly provides environmental benefits these are very hard to quantify. Therefore the proposal is that some land should be managed for environmental benefit via cross compliance, but critically would also help farmers to obtain the points they needed under environmental stewardship. DEFRA is working with Natural England and the RPA to assess what options would be auditable and consistent with the CAP healthcheck. The timing of introduction is critical and we must not disrupt existing ES agreements, thus it is proposed to introduce the changes when existing agreements are renewed.
- Rob Cooke – food security and the environment must go hand in hand and we must ensure that we don't simply banish all wildlife to the worst land. We must also accept that to retain public support for the farming sector a diverse and healthy wildlife population is essential.

Question: there are too few resources made available for soil science R&D, what can be done about this?

- Sir Don Curry – this is a recognised problem and the recent report by RASE, chaired by Dick Goodwin is a useful starting point to set out the case for more support in this area.

Question: are long distance supply chains sustainable or resilient, and do we maybe need to look again at the structure of our food supply chains?

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- Susanna May – there may well be problems with Just in Time supply chains and DEFRA recognizes that this needs to be looked at again, but would welcome any input that can be offered.
- Tom Hind – there is a need for more research on supply chain resilience and whilst more diversity is needed, it is very unlikely that we will not see a continued focus on centralised distribution because of the economic benefits it provides.

Question: in Suffolk there are proposals to abandon 20,000 hectares of land to the sea and the justification appears to be based on poor science. The Environment Agency is also reluctant to allow landowners to repair defences themselves. How can it be sensible to abandon land at a time of concerns about food security?

- Tom Hind – the NFU is not sure that there is any hidden agenda in the proposals for managed retreat, but would argue strongly that more resources must be found both by local authorities and the Environment Agency. It must also be remembered that it is not only agricultural production which suffers if flooding occurs, areas of high bio-diversity are also at significant threat.

Question: The East of England receives roughly £1bn per annum to support the agricultural sector, how should this be used in the future?

- Allan Buckwell – the funding should be used to support a balanced policy of environmental services and support the production of public goods, coupled with ensuring that producers are treated fairly on food production and the regulatory environment. Whilst it is likely that across Europe the CAP will change, the UK share is unlikely to change much, and our focus should therefore be on what the payment is for.
- Tom Hind – after the CAP healthcheck and in the post 2013 period there will be a need to look at the balance between the pillars of the CAP. We must also remember that there is pressure between DG Agri and DG Regions in how the future budget should be allocated which will need attention.
- Sir Don Curry – one extra issue which we will need to focus on is how we value the countryside services which farmers provide, DEFRA is currently looking at this.

Question: a major challenge is the polarised views which are often expressed by the organic and conventional sectors, how can we bring these two agendas together?

- Tom Hind – at the individual business level the antagonism is nothing like as strong, but we must recognise that lobby groups can sometimes project this image.
- Allan Buckwell – we must all recognize that the market needs to be segmented to meet customer needs, and there is a role for a range of business types, so there is no need for polarised views.

Question: there is, as has been identified today, a disparity between where future population will be concentrated and the balance of production. The conclusion must be that either food or populations will have to move. Surely this suggests that on the best land in the UK we need to invest in technology which allows us to maximize production, not to do so would both reduce regional productivity, whilst making global food security more challenging?

- Tom Hind – we must invest in production in the most productive areas, but this must be balanced with, and not at the expense of continued environmental sustainability
- Rob Cooke – the output of the most productive land should be maximized, as long as it does not produce large environmental problems
- Allan Buckwell – we must seek to optimize production in which we recognize the balance between production and environmental services
- Susanna May – we need better evidence on the impacts of intensive and extensive systems of production

GROWING OUR FUTURE FOOD

Session 2: Developing Production – The role of R&D and research, chaired by Marie Francis, Chair, East of England Sustainable Food and Farming Group

Marie Francis introduced the afternoon session by highlighting that Professor Beddington has recently spoken of the need to increase World food production by 50% by 2030. Clearly the UK cannot ignore this challenge, and we arguably have an obligation to increase production whilst also meeting our environmental responsibilities. Previous work in the region very clearly identified that R&D had a key role to play in helping us to address this agenda, both by changing the research which we support and by facilitating more technology transfer.

The need for science, Professor Ian Crute, Director, Rothamsted Research

Whilst the East of England is very well endowed with soil, science and environmental research centres, it must be remembered that whereas nationally there used to be 17 crop research centres there are now only 3 left (all in the East of England). It is a sad fact that the skills base for research has been eroded.

The questions we are facing today are not new questions, Rothamsted has been involved in these questions since the 1840s. If we had to reach some conclusions on the need for science they would be:

- NW Europe will become more important for food production, and environmental and economic factors will increase the focus on local production;
- We will need to produce both food and energy (but food crops for energy will be transient), but the major crops which we will grow in the future will be the same as today;
- Water, fossil fuel use and C sequestration will increasingly dominate decision making;
- A focus on reducing greenhouse gases will replace today's focus on 'cosmetic' environmental factors.

Our future research priorities will need to be on producing more output, from less land, with less water, energy and emissions. This is a hugely challenging agenda and one which will be focused on exploiting renewable resources.

Nitrogen has been the key to increasing crop yield and arguably has saved more lives than any other technology. Whilst this technology is now over 100 years old (Haber-Bosch 1908), today 55% of the nitrate cycle globally which supports food production relies on synthetic nitrogen, and evidence suggests that without this our global population would be at least 25% less.

Since the 1800s we have quadrupled yields, and more than doubled them in the last 50 years. Looking forward our challenge will be to both use more land for production and to increase productivity to meet the needs of a growing population, with average global yields needing to increase by a further 50% in the next 50 years.

Globally if we look at where future population growth will occur (big increases in India, Asia and Africa), there will be growing imbalance between where the populations are, and where food can be produced. In practice this means the more productive areas, e.g. Europe, will have to produce more food, or we will have to accept that the population in Asia and other areas of growing population will want to move to Europe.

To address this challenge we will have to work long term to increase the efficiency with which we can capture sunlight and convert it to dry matter yield. Unfortunately, short term decision making has jeopardized our R&D capacity to deliver these improvements. In addition to the R&D we also need to strengthen our capacity for knowledge transfer.

GROWING OUR FUTURE FOOD

Rothamsted is now structured into 5 inter-related teams to support its work: crop genetic improvement; bioenergy and climate change; soils and ecosystems; pests and diseases and computational services. All of these will need continued support to deliver the improvements we need to see.

Rothamsted has also set out 6 scientific goals for the future:

- Enhanced crop yield, quality and production efficiency;
- Environmentally sensitive management practices for farm and associated habitats;
- Protection of soils and the global environment;
- Novel crop based products and fossil carbon substitution;
- Conservation and exploitation of biodiversity;
- Elevation of public confidence in science related to agriculture.

Whilst the pressures will change, the crops we will be growing in the next 20 years will simply be higher performing varieties of today's mainstream crops. Given the importance of these crops to our current and future security we must all continue to make the case for production. There are some quick wins which we can identify, e.g. applying western science to Africa, but we have to recognise that to improve the genetic base of UK production takes at least 8-9 years.

Panel discussion with the session speaker joined by Dr John French, InCrops project, University of East Anglia and **Clarke Willis,** Chief Executive, Anglia Farmers Ltd

Opening statement by Dr John French: the set of issues with which we are trying to engage are very significant and demand that we put more focus on knowledge transfer. We must seek to develop a faster timescale to commercialise new science and it is vital that the region takes a lead on these issues.

Opening statement by Clarke Willis: long term Anglia Farmers expect there to be only 400 professional farmers and growers in the region who will account for the vast majority of output. These progressive businesses are hungry for R&D, tend to be run by younger managers and need constant training and development if we are to create the benefits we all wish to see. We also need to recognise that many of our input supply chains are also not very resilient. For example Norfolk and Suffolk are very constrained in terms of fuel supplies, and either sudden increases in demand or restrictions on supply can create large problems. The UK only has one ammonium nitrate supplier and we import potash and phosphates. The debates currently taking place in the EU about pesticides also run the risk of seriously restricting the availability of crop management chemicals.

Question: all the evidence seems to show that yields have plateaued in recent years, what can we do to get them rising again?

- Ian Crute – this is a major worry given the need for production. Research suggests water stress may be a significant cause of what we have seen, and whilst this may not always be obvious it appears water stress even for a short time in the growing season can have significant impacts on yield. Whilst in theory plant breeding could help address this, the gene pool for many of our major crops is very restricted and we will need to use genomics to broaden the gene pool we can work with.

Question: how do we know we have not reached the limit of productivity?

- Ian Crute – the fact that the World record wheat yields are at about 15-17t/ha in New Zealand suggests that even in the UK we have the potential to increase yields by at least 25%
- Clarke Willis – there is currently massive variation in wheat yields between producers which provides potential. Sugar beet has performed better than other crops, and we have continued to see large

increases in productivity, but it must be remembered that this crop has a relatively small and closed shop producer base which is supported with dedicated R&D. We probably cannot make the improvements we want to achieve without GM.

Question: a recent NFU presentation on research suggested that government investment in production research has reduced from £200m per annum in the 1980s to £20m now, is this correct?

- Ian Crute – in real terms and just looking at DEFRA (and MAFF) expenditure these figures are correct. In the last 10 years the funds Rothamsted receives from DEFRA have fallen from 25% of its budget to 10%, and all of the funding is now focused on environmental issues. We have significant erosion of the UK's ability to undertake production related agricultural research, and arguably horticulture has been even more severely cut.

Question: in relation to valuing environmental services, how can we help the food supply chain to understand how it can modify its supply chain to reduce life cycle carbon emissions?

- John French – the Incrops project is seeking to undertake these types of assessment for all the new products which they develop, with the aim of making new products carbon neutral. The UEA is also looking at the problem of Nitrous Oxide and has worked with the CLA and others to develop the Carbon Accounting for Land Managers (CALM) tool to help with this process.
- Marie Francis – we should also look at how we can reward businesses for reducing their carbon footprint.
- Ian Crute – in relation to carbon reduction we still need to do more work to assess where the biggest returns will come from, e.g. better grassland management can deliver significant carbon savings, but to unlock these we have to understand the whole system better than we do at present.
- Clarke Willis – Anglia Farmers is working with the CRED team at UEA on communicating messages around carbon footprints to the public. It is vital that we develop better tools to measure and manage carbon footprints e.g. Anglia Farmers buys the electricity through 3,500 meters and yet it cannot get regular meter readings, it is very hard to focus on efficiency without measuring what is occurring.

Question: surely there is a conflict between the estimates which suggest 60% of the public will be obese by 2050 and the need to secure food for a growing global population?

- Clarke Willis – there is arguably a moral obligation for us all to diet, but it is ultimately up to individuals and it is always easy to think that it is someone else's problem. We must also get government policy to recognize that areas such as Eastern England must be supported to produce food.
- John French – to address this problem we must also seek to focus on resource efficiency and to reduce food waste.
- Ian Crute – of total global grain production about 35% is fed to livestock and we have to ask whether we can sustain this. It maybe that we will need to go back to more of our meat coming from grazed landscapes which produce a wide range of benefits and where the livestock uses natural feed.

Question: what outcomes should we be aiming for from a refocused R&D effort?

- Ian Crute – we must rebuild our base of skilled scientists and commit more resources to knowledge transfer. In addition we must embrace GM technology and develop a national programme to apply it to mainstream crops.
- John French – we need a much greater focus on knowledge transfer and more demonstration projects which businesses can learn from.
- Clarke Willis – we must make sure we have a full toolbox available and make sure that we make it much easier for businesses to access the latest research findings.

GROWING OUR FUTURE FOOD

Session 3: Developing production – skills, training, finance and investment, chaired by Marie Francis, Chair, East of England Sustainable Food and Farming Group

Agricultural education, David Lawrence, Principal, Easton College

There is no doubt that we have to increase the skills and intellectual capacity of the agricultural sector to address the challenge of production.

The UK population is changing fast with the largest increases being seen in the over 50s, which is leading to a rapidly ageing workforce. Arguably, the situation is more acute in agriculture than in other sectors because we have fewer young workers and more older ones than comparable industries. Whilst in recent years migrants have helped to fill the gap this has left, the number of migrants is now falling. The long term trend has also been for the agricultural sector to lose market share amongst the labourforce, largely because careers in agriculture have been seen as unattractive. The net result is a very real replacement problem in agriculture as older workers retire, with the horticulture sector even more severely affected.

Whilst the East of England population has been growing, much of the increase has been in people beyond working age

The agricultural sector is also, in common with other sectors, witnessing a big increase in the demand for higher level skills with the demand for workers with only lower level skills predicted to fall. Unfortunately, given the relative perceived attractiveness of other careers compared with agriculture this makes the challenge for farming more acute, and means we will have increasing competition for the best staff.

To move forward we need to address a number of key issues including:

- raising the profile of the industry amongst both the young and the wider public;
- demonstrating how technical and professional the industry now is, and that new recruits can look forward to a rewarding career;
- making it much easier for young people to experience what the industry has to offer;
- raising knowledge of the industry amongst teachers, careers advisors and parents.

Easton College is seeking to address these problems by working with a wide range of partners. Activities include an extensive visit programme, the Spring Fling (held with the Royal Norfolk Agricultural Association), and Holt farmers VIth form day.

Looking forward, the new 14-16 curriculum provides a real opportunity, and Easton now has 500 students for 1 day per week from 36 schools. Of these, experience suggests 50% will progress to full courses at Easton, but there remain big challenges to extend the geographic coverage of this provision and to use more innovative delivery methods.

A new joint programme with Norfolk County Council Children's Services is building on the success of the Year of Food and Farming to ensure that all children in the county visit a farm at least 2-3 times during their schooling. The College is also working with Young Farmers to offer a freshstart programme and promoting progression to Higher Education. It is hoped that new flexibilities in how Train to Gain operates will help to reverse the 80% in adult training since this new programme was introduced.

Nationally, there is good news on recruitment with enrolments on agriculture courses increasing 10% in 2008, and in Norfolk there has been a 60% increase in 2 years. To ensure this momentum is maintained we must make sure we remain industrially relevant, recognise the interest in, and focus on, the environment, and make sure the sector supports the reform of the 14-19 curriculum.

Within the region and nationally outside Norfolk, however, capacity has been reducing and arguably too much has now been lost to easily increase the numbers being trained. It will be vital to the future that we develop synergistic relationships with Higher Education and research centres.

GROWING OUR FUTURE FOOD

The credit crunch and its effect on future production, Martin Redfearn, National Agricultural Specialist, Barclays Commercial

Feeding the World is a very long term project and we must avoid the danger that short term issues will cloud our judgement, but in defining where we need to go we must of course recognise today's problems.

Cash and confidence are both in short supply at present, and whilst in a developed economy such as the UK the volume of food demanded will tend to stay relatively constant, people will, when faced with uncertainty or a shortage of cash, change what they purchase. This is manifested in less demand for luxuries and a move down market, less eating out, less impulse purchases and less spending on convenience.

If you look at the likely affects of these changes on most farmers, then it is easy to conclude that most won't see much difference in demand as they supply commodities and not the finished products. However, even these businesses will face the same cost pressures as other businesses.

To safeguard profitability in these circumstances farms will need to:

- Manage risk, whilst this has been possible for many years, it is still not widely used in agriculture in relation to output prices but could offer valuable protection against price volatility;
- Control costs, both by looking at ways to cut costs such as collaboration and also by assessing if there are ways to take 'cost' holidays such as cashing in on soil nutrient status by using soil testing;
- Find ways to increase their bargaining power in the marketplace;
- Collaborate both up and down the supply chain to identify and deliver efficiency savings, and to work with supply chain partners to ensure profitability by making more use of tools such as cost plus contracts.

Most of the costs facing agriculture have witnessed large increases recently, including fuel, metal, fertilizer and in many cases suppliers are demanding earlier payment. Together these pressures are creating significant cash demands. Calculations suggest that the typical 300ha mixed cereal farm has seen its variable costs increase from £82,000 in the 2007/08 year to £155,000 for the 2008/09 crop year. Whilst different farm sectors have seen different impacts, total farm borrowing hit a record high of £11.1bn in the 3rd quarter of 2008. Whilst this is still manageable, given agriculture's large capital base, it does represent a very substantial cash demand and may not represent a good business proposition for many farms.

At the moment the banks are supporting most farms, and will continue to deal with each farm business on its merits. However, farmers cannot expect to take the availability of cash for granted and will have to demonstrate that they are managing their business effectively and have a clear plan. UK agriculture has a very good banking track record and we all need to work together to make sure that we can maintain this for the longer term.

Panel discussion with the speaker joined by The Rt Hon the Baroness Shephard of Northwold and Ian Pigott, Farmer, J W Pigott & Son, Harpenden

Opening statement by Ian Pigott: there is a very large disconnect between the city and farming and whilst we have made some progress through initiatives such as Farm Sunday and the Year of Food and Farming, there is still much more to do. Unless we can meet this challenge we will continue to find it hard to find the new staff we need and to get our message across to the public.

Opening statement by The Rt Hon the Baroness Shephard of Northwold: food supply is too important to leave to chance, and whilst in the UK we have not really talked about food security for 40 years it is essential that we do engage with this debate to offset the bad press which production has suffered. Unless we address the

production challenge now, we may not be able to avoid the shortages and conflicts which would arise if we fail to provide sufficient food for a growing global population. It is important that the sector takes advantage of these changed circumstances to speak up confidently for UK production, and we need DEFRA to respond by saying that domestic production is important to food security.

Question: what can we do about the large loss of agricultural colleges which we have suffered over the last 30 years?

- David Lawrence – we have to accept that the reliance we have placed on the market system in relation to College provision has failed to deliver the provision we need. Looking forward we must find ways to help Colleges diversify, link to the industry more effectively and to address gaps in provision.
- Ian Pigott – we have to address the demand side for education and this can only done if we manage to get more kids interested and if we can demonstrate that the sector has a better career structure.

Question: we need to get new entrants into the whole sector, including agricultural engineering, food companies and farming. How can we get the whole sector to pull together to achieve this?

- Baroness Shephard – we must rebuild self confidence across the whole sector and work together to present a consistent voice for the whole industry.

Question: how do we overcome the problems we have created through our poor use of language on issues such as GM and pesticides where we appear to have lost the debate as a result?

- Baroness Shephard – it is interesting to compare what happened with GM with the later debates on stem cells. Arguably, stem cells were even more contentious, but scientists stood up strongly for this agenda and as a result won the argument.

Question: after the fall in the Bank of England base rate by 1.5% will the banks pass on this reduction to farmers?

- Martin Redfearn – rates will fall, and Barclays expect the base rate to fall to between 1.5 and 2% next year. Banks will pass on much of this fall, but businesses have to recognize that the margin over base rate may well change to reflect the fact that the risks in all lending have changed. It is important for businesses to see interest rates only as part of the risk profile they face, and as discussed today volatility in the market place must be addressed by businesses in relation to all aspects of their business both individually and collectively through collaboration.

Summing up – reducing chance for the future – is it possible? chaired by Marie Francis, Chair, East of England Sustainable Food and Farming Group

Regional view and next steps, Lord Edward Iveagh, EEDA Board member

The East of England Development Agency (EEDA) recognizes that food and farming are important parts of the regional economy. The region's food chain is worth in excess of £10bn per annum and employs about 14% of the workforce, what happens within it therefore impacts across the whole region.

RDA's have business led boards and are charged with the sustainable economic development of their regions. This means that they have to balance economic, environmental and social goals and EEDA recognises that agriculture can contribute strongly in all these areas. Today we have heard about a wide range of issues from the production challenges we face, the need to balance production and environmental objectives, the role of R&D, how skills can help us meet future challenges and how the credit crunch may impact on the future of the sector.

There is clearly a need for action at many levels, by businesses themselves, by the public sector in the region and by lobbying on behalf of the region for changes in national or EU policy which will allow us to

meet our goals. EEDA stands ready to help the sector respond to these challenges and will do so by making sure that for example, the new Businesslink service which EEDA now manages continues to exceed it targets for business support across the whole region, including within the agricultural sector. EEDA will also work with the industry to use the RDPE funds within the region to drive long term solutions which help many businesses in the farming sector.

The public sector will support the industry as we move forward to help improve competitiveness and meet our environmental responsibilities. Our region is very well placed to lead much of the change we want to see, and indeed to gain benefits from these changes. It may, however, require us to change what and how we produce, but by working together we can avoid leaving it to chance and deliver a successful outcome for everyone.

The national view, Sir Don Curry

It is very clear that in moving forward we must take a holistic view in which we address both the food security and environmental questions together, and it is clear that the government must respond to the changed circumstances in which we now find ourselves.

In many areas that we need to tackle, collaboration will be even more important than it was when the original Curry commission report was published and it is essential that we all embrace the need to work together.

We must continue to focus on the market solutions and this must include doing more to embrace the use of risk management tools.

On the environment we have clearly made significant progress in the development of environmental stewardship, but we must not be complacent as there is still much to do. Looking forward, the need to manage greenhouse gases is a pressing issue and we will have to use both new managerial and scientific solutions. We also have to develop our skills base and ensure that entrepreneurship is promoted within the sector.

In terms of how the government should respond, it will important for the region to be very clear about the changes in government policy which would allow it to deliver the outcomes we all want to see. We have heard today about the need to invest in R&D and to change its focus as well as the need to support more knowledge transfer. Both Bob Watson and John Beddington are supportive of this. The Technology Strategy Board is also planning to investigate the potential to have a food security strand to their work.

Whilst national government can support these areas, it will also be important to secure local and regional investment to achieve the changes we need.

In all areas of our work we will also need to work harder to secure the support of the wider public. This requires more effort directed to communications to explain clearly to the public why agriculture is important to food production, the landscape and the provision of environmental services. It is vital to the future of the sector that we convince the public of the need for support either via the marketplace or from the public purse.

Concluding remarks and thanks, Marie Francis

The region will produce a report from the conference which will be used to help guide future investment in the sector. It is important, however, for everyone to recognise that production cannot just be turned on like a tap, it will take time, commitment and investment to create the sustainable production we need for the future. We all therefore need to support this agenda now.

GROWING OUR FUTURE FOOD

Appendix 1 conference agenda

GROWING OUR FUTURE FOOD

SUPPLY IS TOO IMPORTANT TO LEAVE TO CHANCE

Thursday 13th November 2008

Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 1RQ

How Secure is food supply in the UK? Where will future food supply come from? Is there scope to increase UK production? Is it necessary? What factors are limiting production? What effect will increased production have on the environment?

This conference aims to address such questions and will encourage participation from the audience to develop clear views on regional solutions to these global issues.

Programme - morning

9.00-9.45	**Registration – refreshments available**	
9.45-9.55	Welcome	**Richard Ellis** *Chair, East of England Development Agency*
09.55-10.25	The need for production	**Professor Robert L Thompson** *Gardner Chair in Agricultural Policy, University of Illinois, USA* *(via satellite link)*
	Richard Ellis introduces **Sir Don Curry**	
Future Production – Developing a supportive economic and commercial environment that encourages sustainable food production **Session Chaired by Sir Don Curry** *Chair, Sustainable Food and Farming Group*		
10.25-10.40	Responding to the global challenge	**Tom Hind** *Head of Economic and International Affairs, National Farmers' Union*
10.45–11.00	Environment and production – Friend or Foe?	**Rob Cooke** *Head of Land and Water Policy, Natural England*
11.05-11.20	Policy balance - production and environment	**Professor Allan Buckwell** *Policy Director, Country Land and Business Association*
11.25-12.15	Panel discussion with delegate participation	**Susanna May** *Deputy Director, Food and Farming Group, Defra* Joined by the session speakers and Chair

GROWING OUR FUTURE FOOD

Developing Production – The role of R&D and research **Session Chaired by Marie Francis** *Chair, East of England Sustainable Food and Farming Group*		
1.15-1.30	The need for science	**Professor Ian Crute** *Director, Rothamsted Research*
1.30-2.10	Panel discussion and feedback from delegates	**Dr John French** *InCrops project, University of East Anglia* **Clarke Willis** *Anglia Farmers Ltd* Joined by the speaker and chair
2.10-2.20	**Short comfort break**	
Developing production – skills, training, finance and investment **Session Chaired by Marie Francis** *Chair, East of England Sustainable Food and Farming Group*		
2.20-2.35	Agricultural education	**David Lawrence** *Principal, Easton College*
2.40-2.55	The credit crunch and its effect on future production	**Martin Redfearn** *National Agricultural Specialist, Barclays Commercial*
3.00-3.35	Panel discussion and feedback from delegates	**The Rt Hon the Baroness Shephard of Northwold** **Ian Pigott** *Farmer, J W Pigott & Son, Harpenden* Joined by the chair and session speakers
Summing up – reducing chance for the future – is it possible?		
3.35-3.50	Regional view and next steps	**Lord Edward Iveagh**
3.50-4.00	The national view	**Sir Don Curry**
4.00-4.05	Concluding remarks and thanks	**Marie Francis**
4.05	**Conference close**	