Global Sustainability Institute
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Farmers’ perception of climate change and climate solutions
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Papers produced by UK governments and administrations (Scottish Government, 2012; Defra, 2008; Collier et al., 2010) signal a positive move to understand the mechanisms that shape behaviour in the farming sector. This is a preliminary strategy to help develop a better support structure for farmers to mitigate climate change and its impacts. Farmers are at the heart of the agricultural industry. This note argues that analysing farmers’ perceptions and attitudes toward climate change is a precursor to action, and was done in order to help shape support and guidance by policymakers and the agricultural industry.

Background
Today’s farmers face the complex challenges of providing food security for a growing population by supplying its demands for diverse crops and meat, whilst protecting the environment and connecting consumers with food, farming and nature. Climate change is altering the farmed environment. Rising temperatures and changing precipitation patterns are affecting crop growth, livestock performance, water availability and the functioning of eco-system services (IPCC, 2007). A warmer wetter climate will bring benefits to British agriculture, allowing for year round crop cover and opportunities to grow a more diverse range of crops that until recently were unable to grow here, such as maize and tobacco (IPCC, 2007). However, farming is contributing to climate change; in the UK 8% of greenhouse gas (GHG) emissions come from agriculture, a total dominated by nitrous oxide (298 GWP) and methane (25GWP) relative to carbon dioxide (AEA, 2012). These emissions come from fertilisers, livestock, farm machinery and the loss of organic matter from soils (AEA, 2012). Global Warming Potential (GWP) is a relative measure of how much heat a greenhouse gas traps in the atmosphere, compared to Carbon Dioxide (IPCC, 2007).

The UK government has set emission targets for the agricultural industry, noted in Box. 1, and further described in Box. 2. Despite these bold targets governments are adopting the approach of deregulation, the Department for Food and Rural Affairs (Defra) is encouraging farmers and the agricultural industry to take on management responsibility towards the climate challenge (Defra 2012). How the agricultural sector will adapt to climate change is an important question. If farmers are to remain competitive and resilient agricultural practices must be adapted to both manage the risks associated with those climate impacts as well as to capitalise on the opportunities created (Beddington et al. 2012).

Methodology
This briefing note summarises the findings from Wiles (2012), see Further reading for full details. This report analysed literature and surveys that describe farmers’ perceptions of climate change and converse with members of the agriculture industry to take on their views (Wiles, 2012).

Box 1. Targets
The UK government is committed to reducing Green House Gas emissions across the economy by at least 80% (from 1990 levels) by 2050. As 8% of UK GHG emissions come from agriculture, increasing pressure will be exerted on farmers and those in the agriculture chain to reduce emissions (CCC 2010).

Findings
Information from the major surveys of farmers’ perceptions of climate change and their attitudes to climate solutions has been reviewed to generate the following themes. Selected surveys are listed in Further reading at the end of this note.

Farmers Perceptions of Climate Change
Farmers understand that turbulent weather is attributed to a climate shift, culminating in extreme weather events, heatwaves and droughts
• The impacts of climate change are not seen as a pressing threat, nor are extreme weather events regular enough for the majority of farmers to invest time and resources into taking immediate action. Farmers are working to prevent the impacts of short-term impacts and maximise opportunities rather than mitigate long-term risks.
• The majority of farmers are sceptical about long-term projections of climate change noting they’re confusing lacking consistency and clarity. Instead farmers are likely to take actions based on their own perception of short-term variations in weather.
• There is a disconnect between understanding climate change and taking action to mitigate that change. Lack of government support, information and financial incentives to take action are all noted as key factors.
• Farmers of necessity are first and foremost focused on profit and performance management of their farms. Hence any incentive to take action will need to make sense financially.

Current Adaptation and Mitigation Practices
• Farmers are focusing on reducing greenhouse gas emissions by improving energy efficiency and reducing fuel use. These actions look to be predominantly financially motivated, to reduce rising fuel costs, rather than an action taken to mitigate climate change.
GSI Briefing Note 1, October 2012, Wiles – Farmers Perceptions of Climate Change and Climate Solutions

Set aside land was originally introduced to reduce crop production and the costs of crop storage but will help sequester carbon as well as it has a positive impact on the environment by increasing biodiversity and helping reduce runoff from land, soil erosion and polluting rivers.

Farmers are increasingly seeking guidance on how to plan for and mitigate climate change.

It is clear that more research should be conducted to get a fuller, more detailed and regionally focused picture of farmers’ perceptions of climate change and climate solutions. This review has pulled out several themes. Farmers’ current perceptions align roughly with meteorologists’ projections of a changing climate. More extreme weather, changing seasons, droughts and heat-waves are expected, even if they do not believe the changes are brought about by human actions.

However there is a misalignment between these perceptions of changes in the climate and the adoption of mitigating management practices, technologies and infrastructure. This misalignment is attributed to two key factors:

(i) lack of information, support and regional guidance by authorities and industry, and

(ii) lack of financial incentives alongside environmental obligations.

The public’s image of farmers as ‘custodians of the English countryside’ needs to be financially supported by government. Farms are getting bigger and there are signs that the farming community is aging (ADAS, 2004). As a result, modern farming is steering towards the modern family business format; orientating the farm as a business that is productively driven towards profit for family survival (Defra, 2008). Action that might be taken to mitigate the impacts of the weather is largely becoming one of risk management, predominantly taken in reaction to short-term impacts and driven by financial incentives, adaptation rather than mitigation.

Defra is forming greater awareness of farmers’ attitudes and needs, illustrated by the recent release of the Integrated Advice Pilot (ADAS, 2012). This is a positive sign and indicates that Defra is discussing ways to support and guide the farming community through climate change to mitigate as well as adapt to further challenges. However, if the UK agricultural industry is to reduce its share of 8% of GHG emissions, farmers need to be fully supported by industry, the European CAP, the UK government and its administrations.

This information and support must make financial sense to the land manager and offer clear regional guidance to appeal to the spectrum of farmers across the country.

Recommendations

I. Develop clear and simple information and guidance on climate change and on the mitigating actions that may be taken by farmers. The guidance should be developed through further research and better understanding of farmers’ perceptions of climate change and the actions needed to be taken to mitigate it.

II. Encourage positive action and a clear message through the media and other communication pathways.

III. Use financial incentives to encourage practice change

For further details about this Briefing Note, please contact: gsi-info@anglia.ac.uk

Box 2. Vision of Success

“Agriulture is efficient, competitive, and climate-friendly. Very little biomass is landfilled, emissions are tightly controlled, and material formerly landfilled is used for renewable energy, compost and fertilizer.” (DECC 2009)

References

• ADAS. 2012. Integrated Advice Pilot; FF0204; Final Report. Department for Environment and Rural Affairs (Defra) and Agriculture and Horticulture Development Board (AHDB).

• ADAS. 2004. Entry to and Exit from Farming in the United Kingdom (RMP 2037); Executive Summary. ADAS Ltd

• AEA. 2012. Agriculture; GHG Inventory Summary Factsheet. Department of Energy and Climate Change (DECC).


• DECC. 2009. The UK Low Carbon Transition Plan; National Strategy for Climate and Energy. Department of Energy and Climate Change (DECC); HM Government


• Scottish Government. 2012. Agriculture and Climate Change: Evidence on Influencing Behaviours Programme


Further Reading

• Centre of Excellence for UK Farming: www.ceukf.org

• Dinsdale, Alex. 2012. Future Landscapes: Climate change impacts and adaptation in the Suffolk Coast and Heaths area of outstanding natural beauty. National Farmers Union, NFU. Chapter 6, p.62-78 www.defra.gov.uk/food-farm

• Farming Futures: www.farmingfutures.org.uk

• Wiles, Ella. 2012. Introduction to Farmers Perceptions of Climate Change and Climate Solutions. Global Sustainability Institute (GSI), Anglia Ruskin University (ARU)

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