


<b>United Kingdom</b>	
Contact Point:	
Last updated:	

## 1 - POLICIES

### 1.1 - National/Regional action plan or climate change program : UK carbon plan and the Departmental Climate Change Plan

**Short description:** The objective is to maintain, and enhance where possible, the wide range of social, environmental and economic benefits that agricultural systems provide to society.

Work on the Climate Change Risk Assessment (CCRA) and National Adaptation Plan (NAP) is ongoing, with a statutory requirement to lay the CCRA before parliament by January 2012.

**Main measures in the Agricultural sector:** Priority actions:

- increase resilience to likely pressures, (actions such as improving water efficiency, or more careful use of fertiliser and pesticides).
- address climate change mitigation (actions such as reducing soil erosion, reducing fertiliser use, planting trees).
- whose benefits require a long time to come to fruition (actions such as planting trees).
- which are sustainable, and have significant multiple objectives, benefiting both agriculture and wider society (these include in particular a range of land management actions that create 'green infrastructure' that will provide important services such as alleviating flooding, maintaining carbon stores, and protecting water supplies
- that improve ability to cope with extreme events (such as flood management plans).
- that will make their businesses more efficient and productive.

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**Web site:**

[http://www.decc.gov.uk/en/content/cms/what\\_we\\_do/lc\\_uk/carbon\\_plan/carbon\\_plan.aspx](http://www.decc.gov.uk/en/content/cms/what_we_do/lc_uk/carbon_plan/carbon_plan.aspx);  
<http://archive.defra.gov.uk/environment/climate/documents/climate-change-plan-2010.pdf>

### 1.1 - National/Regional action plan or climate change program: Northern Ireland's GHG Emissions Reduction Action Plan

**Short description:** NI feed into the impacts and adaptation needs via regional input to the UK Climate Change Risk Assessment processes.

**Main measures in the Agricultural sector:** Better nutrient management, better livestock measurement, renewable energy measures and locking in carbon in wood, soil, peat and grass.

A communication strategy is currently being developed for the Reduction Framework and implementation of measures is currently being underway.

**Institutional contact:** [Peter.Scott@dardni.gov.uk](mailto:Peter.Scott@dardni.gov.uk)

**Web site:** [www.doeni.gov.uk](http://www.doeni.gov.uk)

**1.1 - National/Regional action plan or climate change program:** Low Carbon Scotland: Meeting the Emissions Reduction Targets 2010 – 2022

**Short description:** Scottish Government is working in collaboration with the agricultural sector through our Farming For a Better Climate initiative to encourage farmers to adopt efficiency measures that reduce greenhouse gas emissions while strengthening their businesses. If there is insufficient progress made by the sector, a mandatory approach may be considered in the future

**Main measures in the Agricultural sector:** Using energy and Fuels more efficiently, developing renewable energy, locking carbon into the soil and vegetation, optimising the application of fertiliser and manures and optimising livestock management and storage of waste.

**Institutional contact:** [Carole.Stewart@scotland.gsi.gov.uk](mailto:Carole.Stewart@scotland.gsi.gov.uk)

**Web site:** <http://www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/lowcarbon/rppp> and <http://www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/adaptationn>

**1.1 - National/Regional action plan or climate change program:** Wales Climate Change Strategy

**Short description:** Delivery Plan for Emission Reduction and an Adaptation Delivery Plan. Sections are devoted to Agriculture and Land Use in the Strategy and Emissions Reduction Delivery Plan along with a section on the Natural Environment in the Adaptation Delivery Plan.

**Main measures in the Agricultural sector:** Increased technical efficiency of livestock farming (e.g. feed conversion efficiency, longevity of breeding stock) and more effective use of manure and fertiliser. The latter is, for the medium-term coupled with increasing adoption of anaerobic digestion and on-farm use of the resulting bio-gas. Expansion of woodland areas (with an aim of planting 5,000 ha/per annum over 20 years) and more emphasis on management of existing woodlands to maximise net carbon capture. Expansion of renewable energy on farms, Increased efficiency of the food-chain (in particular to reduce waste associated with processing, distribution and storage). Investigating the technical feasibility of methane capture from housed dairy and beef herds. Sympathetic management of existing carbon stores in organic soils  
These will be delivered through:

- 'Glastir' – the new land management programme which supports farmers in developing sustainable land management
- Supporting behaviour change in farming practice through the Farming Connect scheme under the Rural Development Plan
- Dairy and Red Meat Roadmaps
- Measures to support woodland planting and management

**Institutional contact:** [Dewi.Jones@wales.gsi.gov.uk](mailto:Dewi.Jones@wales.gsi.gov.uk)

**Website:**

[www.wales.gov.uk/topics/environmentcountryside/climatechange/tacklingchange](http://www.wales.gov.uk/topics/environmentcountryside/climatechange/tacklingchange)

**1.2 – Other policies:** The English farming industry Action Plan

<b>Short description:</b> The English farming industry has agreed an Action Plan which aims to reduce Greenhouse Gas (GHG) emissions by encouraging the uptake of mitigation measures: the first phase Delivery Plan was published at the beginning of April 2011. Government will review the progress of the English agriculture sector in taking action to reduce GHG emissions in 2012. The industry action plan details the measures to be taken to reduce GHG emissions from farming in England in its annex, in broad terms these include measures to improve crop nutrient and soil management, animal feeding/ nutrition/ breeding and health, energy efficiency and renewable energy production.
<b>Contact point:</b> <a href="mailto:Kathryn.morley@defra.gsi.gov.uk">Kathryn.morley@defra.gsi.gov.uk</a>
<b>Web site:</b> <a href="http://www.nfuonline.com/ghgap/">http://www.nfuonline.com/ghgap/</a>

## 2 - RESEARCH

Ongoing studies / research projects related to climate change and agriculture or recently finished relevant studies at EU level for the sector

**Institution:** Consortium

**Name:** Inventory development

**Short description of the subject and main questions (or findings if available):**

The UK is investing £12.6million over the next 4 years to develop a more sophisticated GHG inventory for the agriculture sector.

The current inventory uses a simplified (largely) Tier I methodology which is unable to capture many on-farm mitigation and abatement strategies. This project will provide more accurate estimates of emissions from the sector by deriving Tier 2/3 accounting methodologies representative of UK agricultural practice. This will enable the efforts of land managers to reduce emissions, to be more accurately quantified. The work will be carried out by research consortia working on 3 inter-related projects:

**Timetable:** to be completed 2015

**Language:**

**Institutional contact:** [Mike.Roper@defra.gsi.gov.uk](mailto:Mike.Roper@defra.gsi.gov.uk)

**Website:** <http://www.ghgplatform.org.uk/>

**Keywords:** GHG inventory, improvement, methodology

**Institution:** IBERS and others

**Name:** REDNEX (Reducing Nitrogen Emissions in Dairy Cows)

**Short description of the subject and main questions (or findings if available):**

The project aims to provide innovative and practical management approaches to reduce nitrogen excretion by ruminants. The project is split into work programme topics to provide management approaches for dairy cows that reduce nitrogen excretion into the environment through:

- optimisation of rumen function
- improved understanding and prediction of dietary nitrogen utilisation for milk production and excretion in urine and faeces
- development of novel tools for monitoring these processes and to assess N adequacy at the animal and farm levels

**Timetable:**

**Language:**

**Institutional contact:**

**Website:** <http://www.rednex-fp7.eu/>

**Keywords:** Nitrogen emissions, Reduction, Dairy cows

**Institution:** Several

**Institutional contact:** [Bruno.Viegas@defra.gsi.gov.uk](mailto: Bruno.Viegas@defra.gsi.gov.uk)

<b>Code</b>	<b>Project Title</b>	<b>Start</b>	<b>End</b>	<b>Contractor</b>
CC0361	Changes to agricultural management under extreme events - likelihood of effects and opportunities nationally (Chameleon)	04/2005	03/2008	ADAS
AC0301	Vulnerability of UK agriculture to extreme events	05/2006	03/2008	University of Warwick
AC0302	A Research and Innovation Network Supporting Adaptation in Agriculture to Climate Change	10/2006	02/2009	University of Warwick
AC0304	Climate change and biodiversity in agri-environment schemes	10/2006	06/2007	University of Warwick
AC0307	Climate change impacts on the livestock sector	04/2007	03/2009	Scottish Agricultural College
AC0308	Ecosystem services for climate change adaptation in land management	09/2007	08/2008	University of Warwick
AC0309	Scoping study on the potential impact of environmental factors associated with climate change on major UK crops	04/2008	03/2009	University of Warwick
AC0310	Climate Change Impacts and Adaptation - a Risk Based Approach	05/2009	04/2010	University of Warwick
AC0312	Assessing the potential for novel bioenergy crops in the UK under a changing climate	01/2010	06/2010	University of Warwick
AC0314	Identification of important crop traits for adaptation to climate change	04/2010	04/2013	University of Warwick
WQ0131	The effect of novel crops and livestock on UK agriculture: forecast for 2050	04/2008	03/2009	University of Warwick

### **3 – Adaptation / Mitigation measures**

On-going or recently finished adaptation or mitigation projects in agriculture of interest to be shared with other Member States as well as good farming practices relevant at EU level.

#### **3.1 – Projects**

**Institution/Promoter:** ADAS and North Wyke Research

**Name:** Air quality measurements on cracking clay soils

**Subject / Field:** Emissions of GHGs and ammonia to air from slurry applications on heavy cracking clay soils. Contrasts between drained and undrained plots are being considered. A sister project is examining diffuse pollution impacts to water

**Budget:** £2M

**Financing (Rural Development, Private, others?):** Defra R&D funding

**Timetable:** 2008 – March 31st 2013

**Institutional contact:** [Luke.Spadavecchia@defra.gsi.gov.uk](mailto: Luke.Spadavecchia@defra.gsi.gov.uk)

**Keywords:** GHG, clay soils

**Institution/Promoter:** ADAS

**Name:** Reducing GHG emissions, nitrate pollution and lost productivity by fully

automating N fertiliser management
<b>Subject / Field:</b> Efficient use of N fertilisers through precision farming techniques
<b>Budget:</b> £1.5M
<b>Financing (Rural Development, Private, others?):</b> Defra R&D match funding with industry
<b>Timetable:</b> 2009 – September 30th 2014
<b>Institutional contact:</b> <a href="mailto:Luke.Spadavecchia@defra.gsi.gov.uk">Luke.Spadavecchia@defra.gsi.gov.uk</a>
<b>Keywords:</b> Precision farming, Fertilizers

<b>Institution/Promoter:</b> North Wyke Research and ADAS
<b>Name:</b> Potential for nitrification inhibitors and fertiliser nitrogen application timing strategies to reduce direct and indirect nitrous oxide emissions from UK agriculture
<b>Subject / Field:</b> This project is assessing the use of the DCD and DMPP nitrification inhibitors with ammonium nitrate and urea fertilisers on a range of UK grassland and arable soils. A suitable inhibitor will be investigated for use with liquid organic fertiliser application (slurries and anaerobic digestates). The project will also assess the impacts of variations in application timings. Measurements include crop yield, nitrous oxide emissions, ammonia emissions and nitrate leaching.
<b>Budget:</b> £2.5M
<b>Financing (Rural Development, Private, others?):</b> Defra R&D funding
<b>Timetable:</b> 2010 – March 31 <sup>st</sup> 2014
<b>Institutional contact:</b> <a href="mailto:Luke.Spadavecchia@defra.gsi.gov.uk">Luke.Spadavecchia@defra.gsi.gov.uk</a>
<b>Website:</b> <a href="http://randd.defra.gov.uk/">http://randd.defra.gov.uk/</a>
<b>Keywords:</b> nitrification inhibitors, fertilizers, timing strategies

<b>Institution/Promoter:</b> John Innes Centre, Rothamsted Research, University of Nottingham
<b>Name:</b> The Wheat Genetic Improvement Network (WGIN) - Improving the environmental footprint of farming through crop genetics and targeted traits analysis”
<b>Subject / Field:</b> Crop genetic improvement for improved resource use efficiency
<b>Budget:</b> £1.7M
<b>Financing (Rural Development, Private, others?):</b> Defra R&D funding
<b>Timetable:</b> 2008 - 31st November 2013
<b>Institutional contact:</b> <a href="mailto:Farhana.Amin@defra.gsi.gov.uk">Farhana.Amin@defra.gsi.gov.uk</a>
<b>Keywords:</b> Genetics, wheat

<b>Institution/Promoter:</b> The Organic Research Centre
<b>Name:</b> Using legume-based mixtures to enhance the nitrogen use efficiency and economic viability of cropping systems
<b>Subject / Field:</b> Developing more resource efficient cropping systems.
<b>Budget:</b> £1.4M
<b>Financing (Rural Development, Private, others?):</b> Defra R&D match funding with industry
<b>Timetable:</b> 2008 – 30th November 2011
<b>Institutional contact:</b> <a href="mailto:Georgianne.Griffiths@defra.gsi.gov.uk">Georgianne.Griffiths@defra.gsi.gov.uk</a>
<b>Keywords:</b> legumes, N efficiency, cropping systems

<b>Institution/Promoter:</b> University of Warwick
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<b>Name:</b> Identification of important crop traits for adaptation to climate change
<b>Subject / Field:</b> Crop breeding for improved adaptive ability
<b>Budget:</b> £374k
<b>Financing (Rural Development, Private, others?):</b> Defra R&D funding
<b>Timetable:</b> 2010 – April 2013
<b>Institutional contact:</b> <a href="mailto: Bruno.Viegas@defra.gsi.gov.uk">Bruno.Viegas@defra.gsi.gov.uk</a>
<b>Keywords:</b>

<b>Institution/Promoter:</b> Scottish Government and Scottish Agricultural College
<b>Name:</b> Climate Change Focus Farms
<b>Subject / Field:</b> Four Scottish Farms have been selected to be Farming For a Better Climate Focus Farms. Open days, demonstrations and farmer discussion groups will take place on each of the farms to share best practice.
<b>Financing (Rural Development, Private, others?):</b> Funded by Scottish Government
<b>Timetable:</b> 2010 - 2013
<b>Institutional contact:</b> <a href="mailto: Carole.Stewart@scotland.gsi.gov.uk">Carole.Stewart@scotland.gsi.gov.uk</a>
<b>Website:</b> <a href="http://www.sac.ac.uk/climatechange/farmingforabetterclimate/">http://www.sac.ac.uk/climatechange/farmingforabetterclimate/</a>
<b>Keywords:</b> Farms, demonstrations, knowledge spreading

<b>3.2 - Good practices</b>
<b>Name:</b> Scottish Centre of Expertise for Climate Change
<b>Location:</b>
<b>Description:</b> Scottish Government is creating a centre of expertise for Climate Change with a role to coordinate and align activities from the wider research network, to develop clear working practices and to liaise with the key policy areas in the Scottish Government.
<b>Lessons learned/conclusions:</b>
<b>Institutional contact</b>
<b>References/web site:</b>
<b>Keywords:</b>