



Helpu Cymru i leihau  
ei Hôl Troed Carbon  
Help Wales reduce  
its Carbon Footprint



Llywodraeth Cynulliad Cymru  
Welsh Assembly Government

[www.cymru.gov.uk](http://www.cymru.gov.uk)

# Climate Change Strategy for Wales

## Adaptation Delivery Plan



**October 2010**





ISBN 978 0 7504 5715 6  
© Crown Copyright October 2010  
WAG10-03167  
F0021011

# Introduction

As a result of past and current emissions, we cannot avoid the impacts of climate change completely. So we need to consider how we are going to adapt to the changes that will affect many aspects of our lives in the future. The earlier Wales starts to prepare, by understanding the vulnerability to climate change impacts, increasing resilience and building the capacity to adapt, the better equipped we will be to cope with future climate effects.

The Assembly Government's Adaptation Framework (explained in Chapter 15 of the Climate Change Strategy) is the national, co-ordinated approach we are taking to ensure that Wales understands the risks and opportunities these changes present and is well-placed to adapt in a sustainable way.

The Adaptation Delivery Plan sets out the specific policies and programmes that we expect to implement in delivering the Adaptation Framework. The 24 actions in this first edition of the Delivery Plan address the following categories:

- Strategic actions
- Natural environment
- Infrastructure
- Communities
- Health
- Business and tourism

The Delivery Plan will be reviewed annually and updated to reflect new actions.

## Strategic actions

<b>Action 1</b> Mainstreaming adaptation	Build consideration of climate change impacts into Welsh Assembly Government business planning
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Sectoral Adaptation Plans covering the natural environment, business and tourism, communities, and infrastructure, produced by Welsh Assembly Government-led groups working across departmental structures and engaging stakeholders, which will identify: <ul style="list-style-type: none"> <li>- key consequences and challenges</li> <li>- existing initiatives</li> <li>- priorities for future adaptation action.</li> </ul> </li> <li>• Policy integration tools that enable the assessment of climate change impacts on future policies and programmes.</li> </ul>
<b>Timescale</b>	2010 - 2012
<b>Relevant stakeholders</b>	Local authorities and local service boards, built environment sector, natural environment sector, emergency services, health sector, energy sector, water sector, transport sector, food sector, business sector, third sector
<b>Who will deliver</b>	Welsh Assembly Government

<b>Action 2</b> Evidence base	Assess the risks and opportunities presented by climate change through active engagement in UK research programmes
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• UK Climate Change Risk Assessment.</li> <li>• UK Adaptation Economic Assessment.</li> <li>• Prioritisation of adaptation policy, identifying areas where action is most beneficial.</li> <li>• Estimation of a “price-tag” of adaptation, giving an assessment of the overall costs of adaptation for the UK, as well as the benefits that the adaptation would bring.</li> </ul>
<b>Timescale</b>	2010 - 2012
<b>Relevant stakeholders</b>	All sectors
<b>Who will deliver</b>	Welsh Assembly Government, Defra, other Devolved Administrations

<b>Action 3</b> Mainstreaming adaptation	Integrate into all public bodies in Wales the assessment of risks and opportunities presented by climate change and the development of adaptation plans
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Implementation of the adaptation components of the Climate Change Act 2008 through the development of a criteria-based approach to identifying priority reporting authorities.</li> <li>• Statutory Guidance for reporting authorities on assessing risks arising from climate change and developing programmes for adaptation.</li> <li>• Increased awareness of adaptation among public bodies and statutory undertakers.</li> <li>• Reporting authorities have increased adaptation capacity.</li> </ul>
<b>Timescale</b>	2010 - 2012
<b>Relevant stakeholders</b>	Public bodies and statutory undertakers
<b>Who will deliver</b>	Welsh Assembly Government, reporting authorities

<b>Action 4</b> Evidence base Communication and engagement	Work with UK Government and relevant stakeholders to ensure an increased awareness and understanding of the impacts of climate change throughout the UK
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Contribute to the UK Climate Impacts Programme (UKCIP).</li> <li>• Range of tools to help stakeholders understand the possible impacts of climate change.</li> <li>• Set of scenarios that show how our climate might change at a local and national level.</li> <li>• Advice on adaptation and exemplars of good practice available to stakeholders.</li> </ul>
<b>Timescale</b>	Ongoing
<b>Relevant stakeholders</b>	Welsh Assembly Government, all stakeholders who provide strategic public services, plan for economic and social development and protect the natural environment in Wales
<b>Who will deliver</b>	Welsh Assembly Government, Defra, other Devolved Administrations, UKCIP

<b>Action 5</b> Communication and engagement	Targeted resource to support implementation of the adaptation components of the Climate Change Strategy and wider adaptation work
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Greater sharing of knowledge about adaptation action, including further case studies.</li> <li>• Improved skills and greater capacity to inform decision making around adaptation.</li> </ul>
<b>Timescale</b>	Ongoing
<b>Relevant stakeholders</b>	All sectors
<b>Who will deliver</b>	Welsh Assembly Government, UKCIP

## Natural environment

<b>Action 6</b> Evidence base Mainstreaming adaptation Communication and engagement	Continue to develop an understanding of the effects of climate change on biodiversity and work to address them
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Support for projects that detect and monitor the impacts of climate change on biodiversity.</li> <li>• Compilation of best practice examples of biodiversity adaptation in Wales.</li> <li>• Natural Environment Framework to inform a programme of recommended measures to increase the adaptive capacity and resilience of the natural environment.</li> <li>• Identification of priority areas for habitat restoration and creation.</li> <li>• Support for projects that demonstrate the implementation of adaptation principles on conservation sites.</li> <li>• Identification of new pests, new animal, fish and plant diseases, as well as options for prevention and management, including risk register of invasive species affecting freshwater, marine and terrestrial habitats.</li> <li>• Greater understanding of the wider implications of climate change impacts through increased use of UK Climate Projections, training events, and the development of pilot adaptation projects and case studies.</li> </ul>

Action 6 (cont'd)	
<b>Timescale</b>	Risk register produced in 2011 Best practice examples finalised in 2011 All others ongoing
<b>Relevant stakeholders</b>	Nature conservation organisations, land managers, Natural Environment Research Council, Wales Environment Link member organisations, growers, exporters, importers, wholesalers and retail traders, Welsh Aquaculture Producers' Association, Fish Health Inspectorate, Centre for Environment, Fisheries and Aquaculture Science (Cefas), Veterinary Laboratories Agency, private vets
<b>Who will deliver</b>	Welsh Assembly Government, Countryside Council for Wales, Defra, Environment Agency Wales, Forestry Commission Wales, Welsh Environment Research Hub, Natural Environment Research Council, Non-Native Species Risk Analysis Panel, Wales Biodiversity Partnership, UK Climate Impacts Programme

Action 7	
<b>Evidence base</b> <b>Mainstreaming adaptation</b>	Ensure that marine spatial planning, its implementation and monitoring consider the impacts of climate change on marine and coastal ecosystems and species
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• UK-wide Marine Policy Statement that sets out the overall policy framework for UK seas, enabling us to manage environmental, social and economic needs together.</li> <li>• Wales specific Marine Plan(s) that sets out the detailed policy framework to help decision makers achieve sustainable development in Welsh seas.</li> <li>• Support for Marine Climate Change Impacts Partnership.</li> </ul>
<b>Timescale</b>	Policy Statement by 2011 First Marine Plan(s) for Wales from 2012/13
<b>Relevant stakeholders</b>	All sea users
<b>Who will deliver</b>	Welsh Assembly Government with support from other statutory bodies, including Countryside Council for Wales and Environment Agency Wales, Defra

<b>Action 8</b> Mainstreaming adaptation Communication and engagement	Support and encourage land managers to adapt to the effects of climate change
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Better water management, reduced flood risk, and biodiversity conserved and enhanced on agricultural land via the adaptation elements in Glastir (the New Sustainable Land Management Scheme for Wales) and the Agricultural Carbon Reduction and Efficiency Scheme (ACRES) (subject to European Commission approval).</li> <li>• Land managers better informed and trained on climate change impacts and possibilities for adaptation thanks to knowledge transfer (e.g. Open Days, factsheets), advice and skills development.</li> </ul>
<b>Timescale</b>	Communication and outreach ongoing Glastir scheme comes into effect on 1 January 2012
<b>Relevant stakeholders</b>	Farm and forestry businesses
<b>Who will deliver</b>	Welsh Assembly Government, Farming Connect contractors

<b>Action 9</b> Mainstreaming adaptation	Improve woodland resilience to climate change
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Woodlands for Wales strategy implemented, resulting in growth of a wider range of species and reduced reliance on clear felling.</li> <li>• Guidance for woodland managers.</li> <li>• Ecosystem services benefits.</li> </ul>
<b>Timescale</b>	Guidance 2010 Implemented through manipulating woodland ecosystems over the next 50 years
<b>Relevant stakeholders</b>	Forestry Commission Wales, other woodland owners and managers, tree nurseries, timber industry
<b>Who will deliver</b>	Woodland owners (including Welsh Assembly Government through Forestry Commission Wales), other public woodland owners, private sector



## Infrastructure

<b>Action 10</b> Mainstreaming adaptation	Support consideration of climate change impacts in sustainable infrastructure development and regeneration
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• ‘Creating Sustainable Places Together’ guidance.</li> <li>• Public sector integrates adaptation planning and risk management approaches, influencing regeneration and development.</li> <li>• All regeneration, infrastructure and property development sponsored by the Welsh Assembly Government incorporates climate change adaptation as part of its approach to sustainable development.</li> <li>• Build adaptation into planning for a Wales Strategic Infrastructure Plan which builds on the Wales Spatial Plan.</li> </ul>
<b>Timescale</b>	Guidance 2010 Others ongoing
<b>Relevant stakeholders</b>	Welsh Assembly Government, developers and their advisors
<b>Who will deliver</b>	Welsh Assembly Government

<b>Action 11</b> Mainstreaming adaptation	Publish and implement strategies addressing flood and coastal erosion risk management
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• National Strategy for Flood and Coastal Erosion Risk Management.</li> <li>• Local Flood Risk Management Strategies.</li> </ul>
<b>Timescale</b>	National Strategy published 2010 Local Strategies published 2011
<b>Relevant stakeholders</b>	Flood Risk Management Authorities
<b>Who will deliver</b>	Welsh Assembly Government, Lead Local Flood Authorities (local authorities)

<b>Action 12</b> Mainstreaming adaptation	Support Wales Spatial Plan area groups to consider the impacts of climate change on their area
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Projects under current delivery frameworks are informed on adaptation.</li> <li>• Training events help Wales Spatial Plan Area Groups understand the impacts that climate change is likely to have in their area.</li> <li>• Area Groups aware of new developments in this field.</li> <li>• Next review of Area Strategies and future reviews of the Wales Spatial Plan informed on adaptation.</li> <li>• Increased awareness of the impacts of climate change and greater implementation of adaptation measures.</li> </ul>
<b>Timescale</b>	2010 - 2012
<b>Relevant stakeholders</b>	Wales Spatial Plan Area Groups
<b>Who will deliver</b>	Welsh Assembly Government with support from UK Climate Impacts Programme

<b>Action 13</b> Mainstreaming adaptation	Improve resilience of water infrastructure to the effects of climate change
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Improved leakage performance.</li> <li>• Water Resource Management Plans and Drought Plans take account of climate change impacts.</li> <li>• UK National Standards on the Design of Sustainable Urban Drainage Systems (SUDS) published: <ul style="list-style-type: none"> <li>- more sustainable approach to drainage for new developments</li> <li>- surface water better managed leading to reduced flood risk in new developments</li> <li>- reduced impact of surface runoff on water quality</li> <li>- improved amenity and biodiversity in new developments.</li> </ul> </li> </ul>
<b>Timescale</b>	Performance ongoing Plans by end 2010 SUDS standards 2010 - 2011
<b>Relevant stakeholders</b>	Ofwat, Environment Agency Wales, Welsh Assembly Government, construction industry, property developers, local authorities, water companies and consultants
<b>Who will deliver</b>	Dŵr Cymru, Dee Valley Water, Severn Trent Water, Defra, Welsh Assembly Government

<b>Action 14</b> Mainstreaming adaptation	Identify opportunities to support adaptation in the built environment
<b>Expected outcome</b>	<ul style="list-style-type: none"> <li>• Develop for consultation the first Welsh Building Regulations (Parts F and L) that address ventilation and energy performance.</li> </ul>
<b>Timescale</b>	By end 2012
<b>Relevant stakeholders</b>	Construction industry and professional bodies, homeowners, registered social landlords
<b>Who will deliver</b>	Welsh Assembly Government

<b>Action 15</b> Mainstreaming adaptation	Review the resilience of the transport infrastructure to the effects of climate change and develop a programme to address risks
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Review of motorway and trunk road infrastructure resilience.</li> <li>• Greater understanding of the vulnerability of Wales's road network to the impacts of climate change.</li> <li>• Climate change adaptation strategy for transport - a vision of how our transport networks need to change in order to adapt to the consequences of climate change.</li> </ul>
<b>Timescale</b>	By 2011
<b>Relevant stakeholders</b>	Transport sector
<b>Who will deliver</b>	Welsh Assembly Government

<b>Action 16</b> Mainstreaming adaptation	Review Shoreline Management Plans
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Sustainable risk management policies for all sections of Welsh coastline identified.</li> <li>• Improved strategic planning for coastal risk management.</li> </ul>
<b>Timescale</b>	By March 2011
<b>Relevant stakeholders</b>	Coastal communities
<b>Who will deliver</b>	Coastal Groups (maritime local authorities, Countryside Council for Wales, Environment Agency and other bodies with a significant coastal interest/ownership)

<b>Action 17</b> Evidence base	Explore the consequences of climate change for the historic environment
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Scoping report to assess existing data.</li> <li>• Gaps in our understanding identified.</li> <li>• Action plan to address these gaps.</li> <li>• Access to information on climate change impacts on the historic environment.</li> <li>• Improved understanding of consequences of climate change for the historic environment.</li> <li>• Priorities for adaptation action in the historic environment identified.</li> </ul>
<b>Timescale</b>	<p>Presentation of scoping report to Historic Environment Group February 2011</p> <p>Development of draft strategy and priorities for action by end 2011</p>
<b>Relevant stakeholders</b>	Cadw, National Trust, Royal Commission on the Ancient and Historical Monuments of Wales, Countryside Council for Wales
<b>Who will deliver</b>	Historic Environment Group (Climate Change Sub-group)

## Communities

<b>Action 18</b> Mainstreaming adaptation	Build adaptation into local authority operational processes
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Local authorities assess risks and opportunities arising from climate change.</li> <li>• Greater resilience and capacity within local authorities.</li> <li>• Adaptation model for local authorities based on the outcomes of the 'Changing Climate / Changing Places' project.</li> </ul>
<b>Timescale</b>	Ongoing
<b>Relevant stakeholders</b>	Local authorities, Welsh Assembly Government
<b>Who will deliver</b>	Welsh Assembly Government, Wales Local Government Association, partners within the 'Changing Climate / Changing Places' project, local authorities

<b>Action 19a</b> Communication and engagement	Inform community and third sector organisations of the impacts and consequences of climate change
<b>Expected outcome</b>	<ul style="list-style-type: none"> <li>Community and third sector groups feel more informed and more able to drive community-led action on adaptation.</li> </ul>
<b>Timescale</b>	2010 - 2012
<b>Relevant stakeholders</b>	Wales Council for Voluntary Action, Community Councillors, Cynnal Cymru, Energy Saving Trust, Carbon Trust, Environment Wales, Communities First Partnerships, Welsh Social Enterprise Coalition, Wales Co-operative Centre, faith groups, town and community councils
<b>Who will deliver</b>	Welsh Assembly Government, Cynnal Cymru (from 2011) via the Community Climate Change Networks and other stakeholder events

<b>Action 19b</b> Evidence base Communication and engagement	Support and enable community and third sector projects that help their communities adapt to climate change
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>Community projects have case studies they can learn from.</li> <li>Communities have opportunities to share experiences and learn from others.</li> </ul>
<b>Timescale</b>	2010 - 2012
<b>Relevant stakeholders</b>	Wales Council for Voluntary Action, Community Councillors, Cynnal Cymru, Energy Saving Trust, Carbon Trust, Environment Wales, Communities First Partnerships, Welsh Social Enterprise Coalition, Wales Co-operative Centre, faith groups, town and community councils
<b>Who will deliver</b>	Welsh Assembly Government

<b>Action 19c</b> Evidence base Communication and engagement	Support equalities and human rights organisations to identify and understand the social justice implications of climate change adaptation
<b>Expected outcome</b>	<ul style="list-style-type: none"> <li>At least two third sector organisations improve their understanding of how climate change affects their work and develop an approach to addressing the issues that others can learn from.</li> </ul>
<b>Timescale</b>	2010 - 2011
<b>Relevant stakeholders</b>	Wales Council for Voluntary Action, Human Rights and Equalities Coalition
<b>Who will deliver</b>	Welsh Assembly Government

<b>Action 20</b> Communication and engagement	Raise awareness of flood risk
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>Identify at-risk communities - understand their demographics and identify the appropriate means to deliver the message.</li> <li>Implement a framework to co-ordinate action.</li> <li>Commission pilot projects.</li> <li>Develop a collection of awareness-raising initiatives for stakeholders to use.</li> </ul>
<b>Timescale</b>	Consultation addressing a 'Raising Awareness Action Plan' summer 2010 Action Plan to be reviewed regularly
<b>Relevant stakeholders</b>	Communities at risk of flooding
<b>Who will deliver</b>	Welsh Assembly Government, Welsh Local Government Association, National Public Health Service for Wales, Environment Agency Wales

<b>Action 21</b>	Progress Climate Change Partnership with Mbale, Uganda and manage the delivery of agreed outcomes
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Integrated Territorial Climate Plan developed in Mbale, with international funds raised to deliver the plan.</li> <li>• 1 million trees planted in Mbale.</li> <li>• Improved Welsh understanding of the current impact of climate change in the developing world.</li> <li>• Welsh practitioners gain experience of climate change adaptation techniques.</li> </ul>
<b>Timescale</b>	2010 - 2014
<b>Relevant stakeholders</b>	Welsh Assembly Government, Mbale, Manafwa and Bududa Districts, UK Department for International Development, Welsh Territorial Approach to Climate Change Steering Group, UN Development Programme, Environment Agency network of regional governments for Sustainable Development (nrg4SD) civil society in Mbale
<b>Who will deliver</b>	Welsh Assembly Government, Mbale Districts, UN Development Programme, Welsh and Ugandan civil society

## Health

<b>Action 22</b> Mainstreaming adaptation Communication and engagement	Implement and mainstream the Heatwave Plan for Wales 2009: 'A Framework for Preparedness and Response'
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Alert health, social care, other care agencies and members of the public to the dangers of excessive heat.</li> <li>• Guide and support co-ordinated collaborative action at local, regional and national levels in response to extreme heat and heatwave conditions.</li> </ul>
<b>Timescale</b>	Ongoing
<b>Relevant stakeholders</b>	Welsh Assembly Government, local authorities, health service, emergency services, wider public sector individuals, health and social care professionals
<b>Who will deliver</b>	Welsh Assembly Government, Welsh Local Government Association, National Public Health Service for Wales

<b>Action 23</b> Mainstreaming adaptation Communication and engagement	Implement Climate Change Adaptation Action Plan for Health
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Increased awareness of climate change impacts.</li> <li>• Continued development of appropriate health adaptation actions.</li> <li>• All aspects of health service planning and delivery consider climate change impacts.</li> </ul>
<b>Timescale</b>	Ongoing
<b>Relevant stakeholders</b>	Welsh Assembly Government, Climate Change and Health Working Group representative organisations, local authorities, health service, emergency services, wider public sector
<b>Who will deliver</b>	Welsh Assembly Government, Public Health Wales, Environment Agency and other public sector bodies

## Business and tourism

<b>Action 24</b> Communication and engagement	Provide adaptation advice to businesses
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>• Provision of specific programmes that enable companies across Wales to access advice and support on sustainable and cost-effective business practices.</li> <li>• Training for business support advisers.</li> <li>• More adaptation information on business support websites.</li> <li>• Businesses aware of opportunities and threats brought by climate change and know where to go for further advice.</li> </ul>
<b>Timescale</b>	2010 - 2012
<b>Relevant stakeholders</b>	Business sector, including social enterprises
<b>Who will deliver</b>	Welsh Assembly Government