

ECMWF Climate Change Service Workshop, 17-18 February 2014

Sectoral information: Policy needs and Climate-Adapt

André Jol, Head of group vulnerability and adaptation (EEA)



Key issues to consider for CC impacts, vulnerability, risk assessments

What, who is **affected** and how (**multi-sectoral**):

- People
- Infrastructure
- Ecosystems

Geographical **scales**:

- Administrative and governance: EU, trans/cross-national, national, sub-national, city
- Environmental assessment: river catchment, bio-geographical region, sea basin

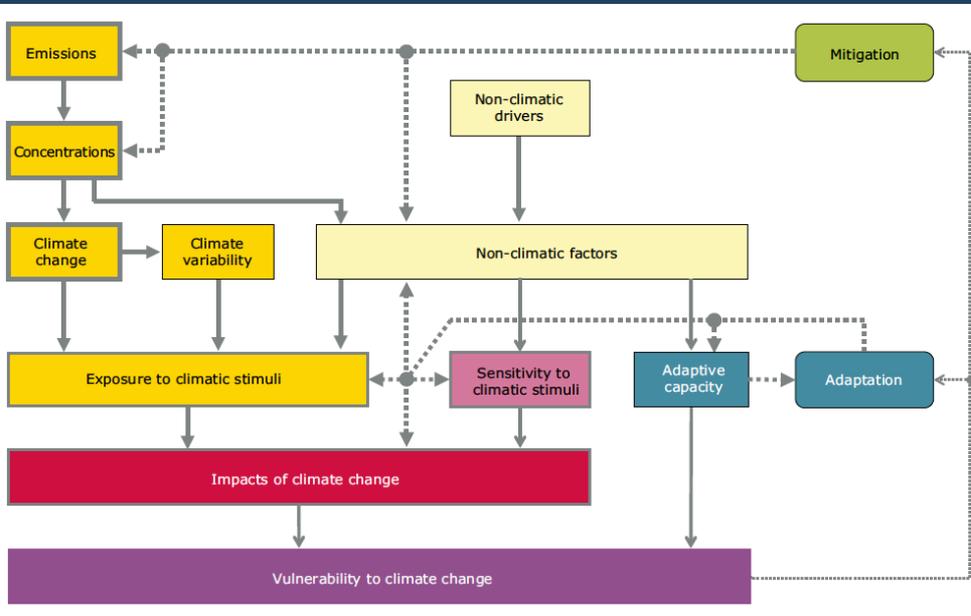
Impact, risk and vulnerability **methods** (combine and integrate):

- Climate data (satellite, in-situ **observations, re-analyses**)
- **Climate scenarios** (model output)
- **Socio-economic**, including demographic, data/scenarios

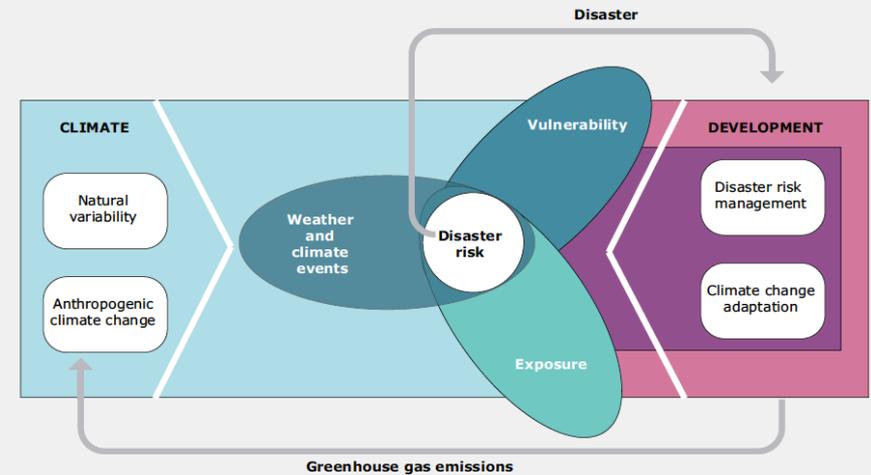
Dealing with **uncertainties**



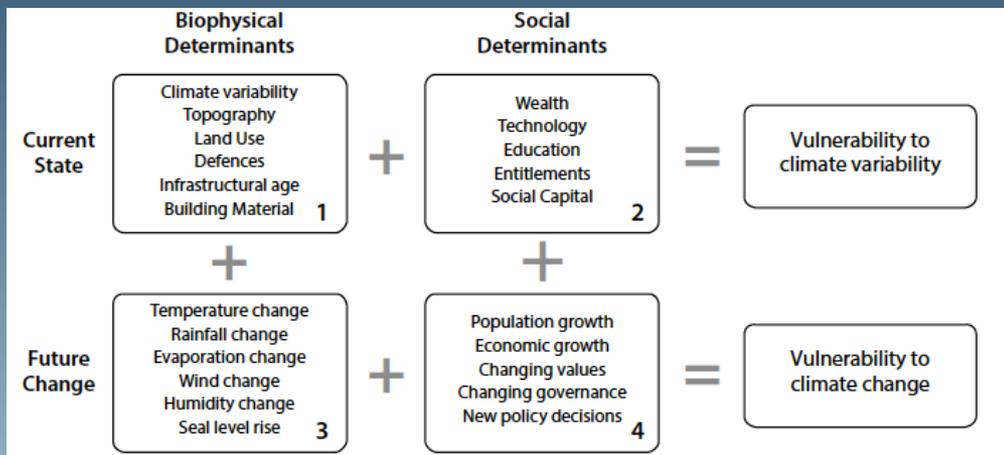
Climate change impacts, vulnerabilities and risks



Source: IPCC, fourth assessment report (2007)



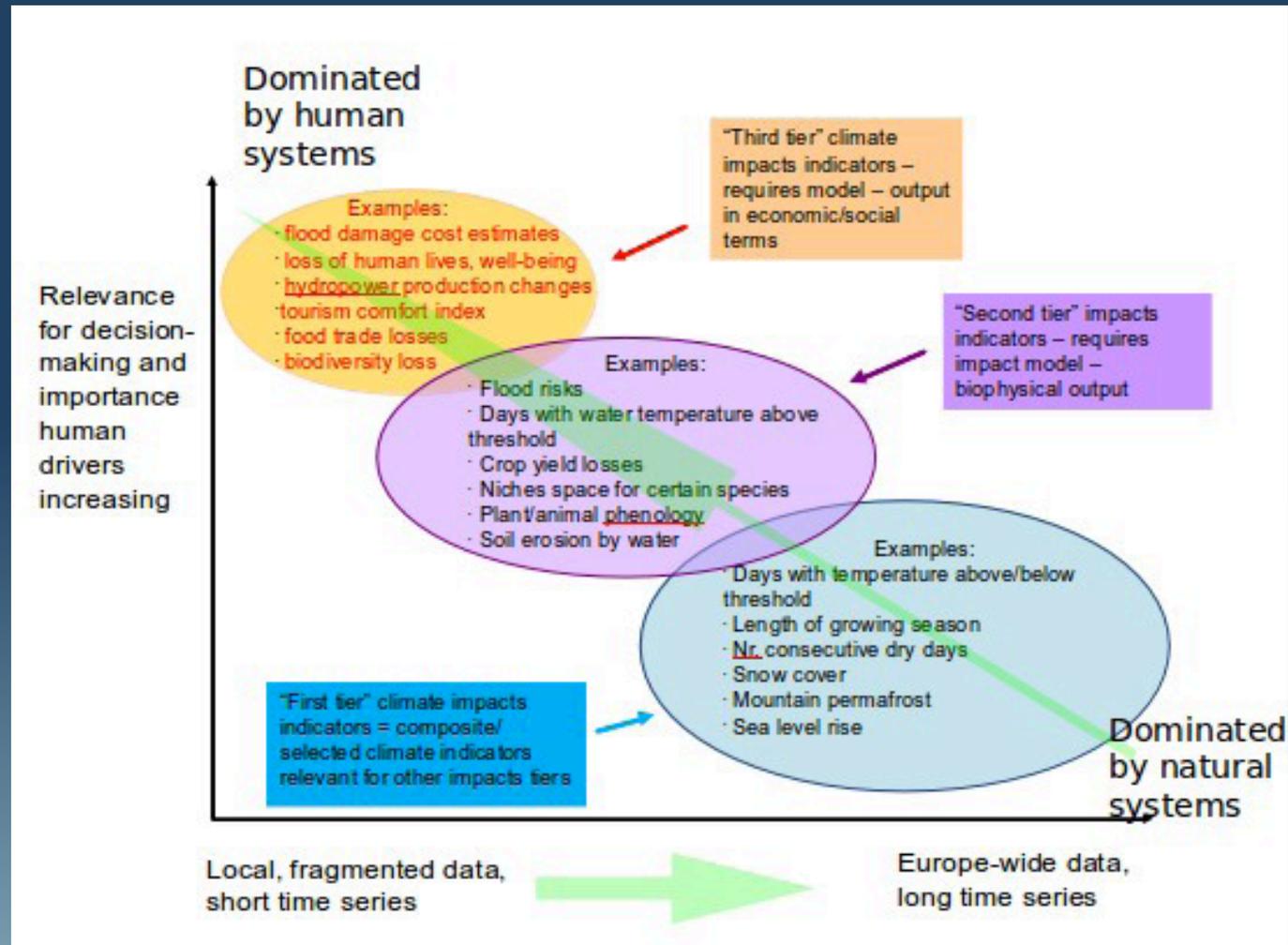
Source: IPCC, Special Report Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX)



Source: UNEP/Global Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA), Guidance on Assessing Vulnerability, Impacts and Adaptation to Climate Change (2013)



Typology of climate change impact/risk/vulnerability indicators



Climate change, impacts and vulnerability in Europe (EEA indicator based report, Nov 2012)

Indicators:

*Changes in the **climate system***

- Climate variables
- Cryosphere (glaciers, snow and ice)

*Climate impacts on **environmental systems***

- Marine environment and biodiversity
- Coastal zones
- Inland waters (quantity and quality, biodiversity)
- Terrestrial ecosystems and biodiversity
- Soil

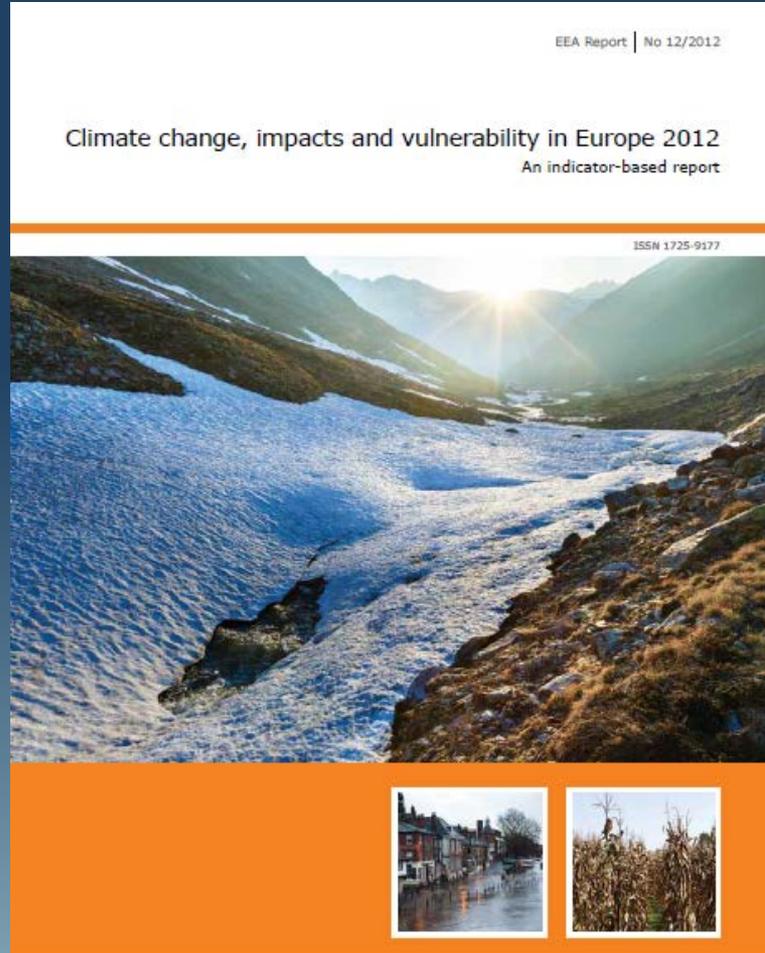
*Climate impacts on **socio-economic systems and health***

- Agriculture
- Forestry/forests
- Energy
- Transport, fisheries (no indicators)
- Human health

Vulnerability indices

Preparation: European Topic Centres, WHO, ECDC, JRC (about 90 experts), data from research projects and international databases

Next steps: Selected indicators on the EEA web site, to be updated after publication of IPCC WGI/II reports in 2013/2014



Example: Flooding in UK

- **Exceptional winter storms** and serious coastal damage and widespread, persistent flooding in **UK (winter 2014)**
- **No definitive answer** yet on the possible **contribution of climate change**
- Recent studies suggest an **increase in the intensity of Atlantic storms taking a more southerly track**
- Increasing evidence that **extreme daily rainfall rates are becoming more intense**; rate of increase is consistent with what is expected from a warming world
- **More research** is needed



Committee on Climate Change > Blog > Current spending plans may mean an extra £3 billion in future flood damages

Published: January 21, 2014
By: The Committee on Climate Change
Tagged:

Current spending plans may mean an extra £3 billion in future flood damages

The widespread flooding in recent months has resurfaced tense exchanges in Parliament about current funding levels for flood risk management. Is more being spent than ever before or has it been cut? Either way, is enough being done?

The Adaptation Sub-Committee's role is to provide independent evidence-based advice to the UK Government and Parliament about preparing for future climate change. Increasing flood risk is the **greatest threat to the UK from a warmer world (pdf)**.

There are many ways to cut the funding cake, budgets are adjusted frequently and outturn expenditure levels are usually different again. A new **ASC policy note** brings together and makes transparent the picture of flood spending in England.

This shows that more is being spent over the current four year period than the previous four years but there are some important caveats. The Government's figures are in cash terms, rely on external contributions being secured, and assume unringfenced money provided to local authorities is being spent on flood alleviation. Local authorities are also being asked to contribute to the cost of flood relief. Local authorities are also being asked to contribute to the cost of flood relief. Local authorities are also being asked to contribute to the cost of flood relief.

Committee on Climate Change > Blog > More money for flood defence (repairs)

Published: February 13, 2014
By: The Committee on Climate Change
Tagged:

More money for flood defence (repairs)

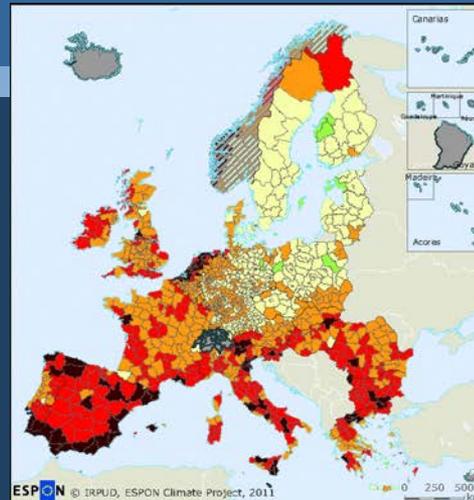
Last week the Government committed an extra £130 million to help with the flooding. From existing budgets 42 new schemes were given the green light to start construction in 2014/15. A further 13 schemes previously announced will also be starting. The Prime Minister has pledged that **"money is no object in this relief effort"** and yesterday the Government announced a package of **grants and other financial support** to help households and businesses recover after the flooding. So will we now be spending enough to avoid flood risk from increasing further?

The new money will bring at least some comfort to those communities around the country who have seen exceptional weather this winter. It will primarily be spent on repairing and reinstating defences that have been damaged in the recent storms. It will help us recover existing levels of protection, back to where we were a few months ago. It is expected to be a temporary funding boost, coming from Defra's contingency reserves rather than as a permanent addition to the floods budget.

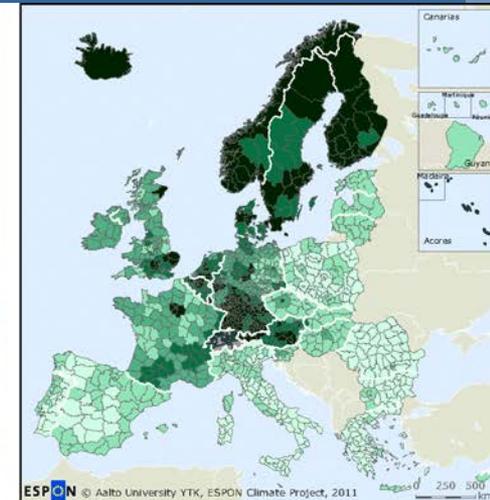
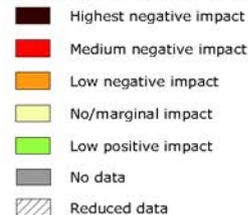
So the additional funding won't materially address the rising long-term flood risk given the latest assessment of the **investment need**. As we have previously stated, by 2015 we are on course to spend **half a billion pounds less** on flood and coastal defence over this Parliament than the amount needed to avoid more homes becoming at significant risk over time. This remains the case.

Example: Aggregated vulnerability

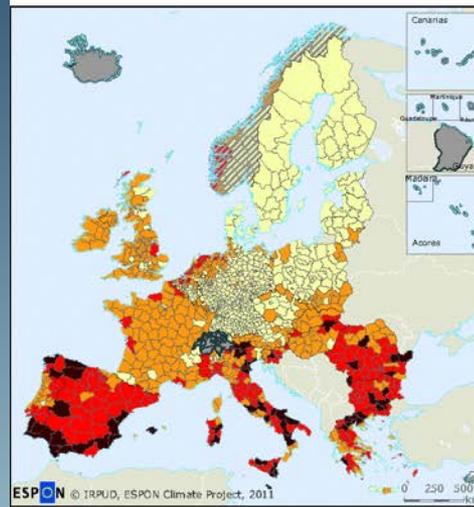
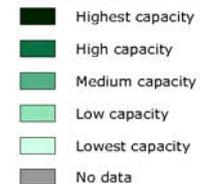
- Economic, technical, and institutional *capacity to adapt* to climate change *differs across Europe*.
- When impacts of climate change affect regions with low adaptive capacity, the **consequences** can be severe.
- **Territorial cohesion** may be **negatively affected** by deepening existing socio-economic imbalances.



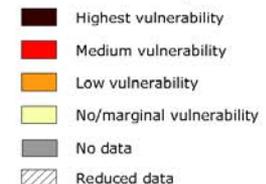
Aggregate potential impact of climate change



Overall capacity to adapt to climate change



Potential vulnerability to climate change



IPCC AR5, WGII, Chapter 23 - Europe

Working Group II
Impacts, Adaptation, and Vulnerability



IPCC web sites

Home IPCC
WG II Home
Organization and TSU
Assessment Reports
Fifth Assessment Report (AR5)
Special Reports
Special Report on Extreme Events
Meetings
Publications

FIFTH ASSESSMENT REPORT (AR5)

Climate Change 2014: Impacts, Adaptation, and Vulnerability

The IPCC has started the Fifth Assessment cycle, which will include the Fifth Assessment Report (AR5), **Special Reports**, **Expert Meetings**, and **Workshops** agreed by the Plenary. The **outline** of the Working Group II contribution to the IPCC Fifth Assessment Report (AR5) was approved at the 9th Session of Working Group II and accepted by the **31st Session of the IPCC meeting** in Bali, Indonesia, 26-29 October 2009. According to the timetable agreed by the IPCC, the Working Group II contribution to the AR5, "**Climate Change 2014: Impacts, Adaptation, and Vulnerability**", will be released in March 2014.

FINAL DRAFT

IPCC WGII AR5 Chapter 23

Do Not Cite, Quote, or Distribute Prior to Public Release on 31 March 2014

Chapter 23. Europe

Coordinating Lead Authors

Sari Kovats (UK), Riccardo Valentini (Italy)

Lead Authors

Laurens M. Bouwer (Netherlands), Elena Georgopoulou (Greece), Daniela Jacob (Germany), Eric Martin (France), Mark Rounsevell (UK), Jean-Francois Soussana (France)

Contributing Authors

Martin Beniston (Switzerland), Maria Vincenza Chiriaco (Italy), Philippe Cury (France), Michael Davies (UK), Paula Harrison (UK), Olaf Jonkeren (Italy), Mark Koetse (Netherlands), Markus Lindner (Finland), Andreas Matzarakis (Germany), Reinhard Mechler (Germany), Annette Menzel (Germany), Marc Metzger (UK), Luca Montanarella (Italy), Antonio Navarra (Italy), Juliane Peterson (Germany), Martin Price (UK), Boris Revich (Russian Federation), Piet Rietveld (Netherlands), Cristina Sabbioni (Italy), Yannis Sarafidis (Greece), Philipp Schmidt-Thomé (Finland), Vegard Skirbekk (Austria), Donatella Spano (Italy), Jan E. Vermaat (Netherlands), Paul Watkiss (UK), Meriwether Wilson (UK), Thomasz Zyllicz (Poland)

Review Editors

Lucka Kajfez Bogataj (Slovenia), Roman Corobov (Moldova), Ramón Vallejo (Spain)



Availability of national CCIV assessments

Country	Date	Name	Comment
Austria	2010	Klimaänderungsszenarien und Vulnerabilität	Qualitative; part of the NAS
Switzerland	2007	Climate Change and Switzerland 2050: Expected Impacts on Environment, Society and Economy	Mostly qualitative; uncertainty is discussed qualitatively
Germany	2005	Climate Change in Germany. Vulnerability and Adaptation of climate sensitive Sectors	Quantitative; uncertainty resulting from different emissions scenarios and climate models is shown
	2008	Deutsche Anpassungsstrategie an den Klimawandel	Qualitative; part of the NAS
Spain	2005	ECCE - A preliminary General Assessment of the Impacts in Spain Due to the Effects of Climate Change	Quantitative; based on a comprehensive review of available studies; uncertainty is addressed differently depending on the underlying study
Finland	2012	Miten väistämättömään ilmastonmuutokseen voidaan varautua (ISTO)	Mostly qualitative
Ireland	2008	CLIMATE CHANGE: Refining the Impacts for Ireland	Quantitative; many uncertainties are presented quantitatively
	2009	A Summary of the State of Knowledge on Climate Change Impacts for Ireland	Qualitative; based on literature review
Netherlands	2012	Effecten van klimaatverandering in Nederland 2012	Quantitative; uncertainties covered by 4 KNMI'06 scenarios
Norway	2010	Adapting to a changing climate: Norway's vulnerability and the need to adapt to the impacts of climate change	Mostly qualitative; uncertainties are mentioned in the text
Poland	2010	Opracowanie wskaźników wrażliwości sektora transportu na zmiany klimatu	Only one sector; semi-qualitative; consideration of uncertainties not known
United Kingdom	2012	The first UK Climate Change Risk Assessment	Comprehensive; quantitative; probabilistic (; legally mandated every 5 years

Source: Forthcoming CIRCLE2 book (2014)



Involving networks of end users

Expert Meetings on 'Adaptation Platforms' (19 June 2013, EEA, Copenhagen and with CIRCLE2 7/8 Nov 2013, Vienna)



First "Open European Day" and "EU Cities Adapt" final conference, 3 June 2013, Bonn

- (Trans-) **national level** Adaptation Platforms contain climate data/indicators, info on policy actions, guidance, experiences from implemented actions, results of adaptation research
- Interest to **share knowledge, lessons learnt, challenges** and explore good practices
- Involving EEA/EIONET **national experts** on climate change adaptation (and others on water, biodiversity, marine etc)
- Working also with **city networks**
- Other key networks, e.g.:
 - **Human health:** WHO Europe, ECDC
 - **Disaster risk** management: ISDR Europe



European Climate Adaptation Platform Climate-ADAPT

- Supports governmental decision-makers developing/implementing **climate change adaptation strategies, policies and actions**
- **Launched 2012** (DG CLIMA, EEA)
- EEA maintains, with Commission, and supported by ETC CCA

CLIMATE-ADAPT
European Climate Adaptation Platform

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Home | Adaptation information | EU sector policies | Countries and other areas | Tools | Links | Search the database

Climate Change Adaptation in Europe

The European Climate Adaptation Platform (CLIMATE-ADAPT) aims to support Europe in adapting to climate change. It is an initiative of the European Commission and helps users to access and share information on:

- Expected climate change in Europe
- Current and future vulnerability of regions and sectors
- National and transnational adaptation strategies
- Adaptation case studies and potential adaptation options
- Tools that support adaptation planning

» [Read more](#)

Find case studies on adaptation in Europe

Share your information

News

- » Apr 2013 EU adaptation strategy launched - advancing adaptation action
- » Apr 2013 EU adaptation strategy: stakeholder event, 29 April
- » Feb 2013 LIFE+ 2013 call for proposals

Events

- » 17-19 April 2013, 7th European Conference on Sustainable Cities & Towns, Geneva, Switzerland
- » 29 April 2013, Launch event for EU strategy on adaptation to climate change, Brussels, Belgium
- » 31 May - 2 June 2013, Resilient Cities 2013, Bonn Germany

EU sector policies

- Agriculture & Forestry
» [Read more](#)
- Water management
» [Read more](#)
- » [View all sectors](#)

EU information systems

- WISE** Water
WATER INFORMATION SYSTEM FOR EUROPE
- Biodiversity**
BIODIVERSITY INFORMATION SYSTEM FOR EUROPE

<http://climate-adapt.eea.europa.eu>



Information on/for countries adaptation strategies



CLIMATE-ADAPT

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Choose a country

France

Legal framework | Assessments | Priority sectors | Local actions | Summary | Contact

Responsibility for climate change adaptation is split between national, regional and local levels.

- The creation of a National Observatory for the Effects of Global Warming ([ONERC](#)) in 2001, tasked specifically with adaptation to climate change, followed by the adoption of the [National Adaptation Strategy in 2006](#), marked the beginning of French government activity in the adaptation field;
- Programme law 2009-967 of 3 August 2009, relating to the implementation of the Grenelle Environment Forum, makes provision in Article 42 for "the preparation of a National Adaptation Plan for a variety of areas of activity by 2011". The first [National Adaptation Plan](#) was published on 20 July 2011 and aims to present concrete measures designed to prepare for and exploit new climatic conditions in France. The Plan covers a five-year period (2011-2015). 20 key fields are identified for action. More than 90 % of actions have started and some like [Drias les futur du climat](#) are completed.
- Regional adaptation guidelines are defined in Regional Climate, Air and Energy Schemes (SRCAE) and local adaptation actions are designed within Territorial Climate-Energy Plans ([PCET](#)), under the provisions of Law 2010-788 of 12 July 2010.

Some French overseas communities have a specific competency regarding environmental policy (e.g. French Polynesia, New Caledonia). Thus adaptation policy falls under their local decision making process. French Polynesia is currently developing its strategic climate plan with specific provisions for adaptation issues.

In November 2009, France submitted its [fifth national communication](#) to the UNFCCC, with a significant part dedicated to adaptation issues and policies.



Information on/for cities

The screenshot shows the 'European Climate Adaptation Platform' website. The header includes the 'CLIMATE-ADAPT' logo and navigation links like 'Sign In', 'Glossary', 'Contact', 'Sitemap', 'Legal notice', and 'About'. A search bar is present. The main navigation menu includes 'Home', 'Adaptation information', 'EU sector policies', 'Countries, regions and cities', 'Tools', 'Links', and 'Search the database'. The 'Cities and towns' section is highlighted. Below the header, there is a section titled 'Cities and towns' with a description: 'Cities and towns grew as centres of trade and commerce on rivers, coasts and at road or rail junctions. They are highly artificial ecosystems, created by humans to provide places to do business and communicate and to offer suitable and safe living conditions. In Europe, around 75% of the population lives in urban areas and this is projected to increase to about 80% by 2020. Climate change has the potential to influence almost all components of the urban environment and raises new, complex challenges for the quality of urban life, [health](#) and urban biodiversity.' A 'Read more' link is provided. To the right, 'Search results' are listed: Publications and reports (40), Information portals (8), Guidance (12), Tools (4), Indicators (4), Research and knowledge projects (53), Adaptation options (25), and Case studies (6). On the left, there are sections for 'Indicators' (Urban adaptation to climate change in Europe – indicators and maps, EUROSTAT Urban audit, Extreme temperatures and health), 'Publications & reports' (Policy instruments for adaptation to climate change in big European cities and metropolitan areas, Urban adaptation to climate change in Europe - Challenges and opportunities for cities together with supportive national and European policies, Urban Regions: Vulnerabilities, Vulnerability Assessments by Indicators and Adaptation Options for Climate Change Impacts - a Scoping Study, IPCC WG2, 2007, chapter 7: Industry, settlement and society, Climate-Friendly Cities: A Handbook on the Tracks and Possibilities of European Cities in Relation to Climate Change), and 'Information Portals' (Adaptation strategies for European Cities).

The banner for the 'Resilient Cities 2013' conference features a photograph of a city street with many trees and people. The text on the banner reads: 'Resilient Cities 2013', 'European cities adapt to climate change - cities learning from cities', and 'Key messages from the first Open European Day at the Resilient Cities Conference, Bonn, 3 June 2013'.

- First "Open European Day" and "EU Cities Adapt" final conference, 3 June 2013, Bonn
- **Second city conference planned for 2 June 2014, Bonn**
- **DG CLIMA funded projects on CC adaptation in cities** (EU Cities Adapt project finalised in 2013, and second to be launched in March 2014)

This block contains the title 'Appendix 2: Survey Adaptation Strategies for European Cities: Final Report' and a photograph of a city skyline with a river. The European Commission logo is at the top. Below the photograph, the text reads: 'Appendix 2: Survey Adaptation Strategies for European Cities: Final Report'. At the bottom, a small text line states: 'This is part of the Final Report of the project "Adaptation Strategies for European Cities" which has been compiled by Ricardo-AEA for the European Commission Directorate General Climate Action'.



CC impacts/vulnerability/risk indicators in the Copernicus climate change service

- Which **climate change observations and scenarios** will be selected and at which **geographical scales**?
- Will **complex indicators** be included and what is the **selection** process?
- How to integrate **socio-economic** including demographic data/scenarios?
- How to achieve **consistency** in use of **climate change scenarios** in assessments **across countries and cities**?
- How will '**scientific users**' (e.g. biophysical, economic and social modelling) and '**end users**' be involved?
- **Which main 'end-users'** will be addressed and **how**?
 - Countries, cities
 - Sectors : Biodiversity (terrestrial), Marine environment, Coastal, Water management (floods, droughts, quality), Agriculture, Forestry, Infrastructure (energy, transport), Human health, Businesses
- What **links** are planned with **climate adaptation web based information platforms** (national and EU-wide, Climate-ADAPT)?



Thank you for your attention

<http://www.eea.europa.eu/themes/climate>
<http://climate-adapt.eea.europa.eu>

