

CLIMATE PROOF AREAS
TIME TO ADAPT



One toolkit for successful climate proofing	5
1. Regional effects of climate change	7
2. New and improved adaptation methods	9
3. Gain support for your plans!	15
4. Your own Climate Proof Area	17
Join us!	18



The world is facing a challenging task: preparing for climate change. The job is massive, but along the way exciting new opportunities will be created. Let's adapt!

Five knowledge-driven countries are taking action to anticipate the local effects of climate change and develop regional adaptation strategies. Scientists and civil servants from Belgium, England, Germany, Sweden and the Netherlands unite in one project: Climate Proof Areas. Their goal? Creating safer, more natural and more prosperous land use options for future development.

Soon, Climate Proof Areas will help you to adapt your region for a better future.





► **One toolkit for successful climate proofing**

Thirteen partners from five different countries joined forces to develop new and innovative methods and help render threatened areas 'climate proof'. By 2012 we will present a toolkit of ideas for successful climate adaptation, built on the results of our own research and cooperations with various stakeholders. Soon you will learn...

... the effects of climate change on the North-Sea Region
... which innovative measures have proven their worth
... how you can gain political support for your own plan
... how to build your own climate proof area

Thanks to your efforts, the adaptation process continues!





► 1. Regional effects of climate change

Low lying areas are looking for effective ways to ensure a climate proof future. In this project several North Sea Region areas joined forces to collect **state of the art data to reveal the true impact of the climate** change on their region:

- *an increase in average and extreme temperature*
- *more abundant rainfall*
- *heavier and more frequent storms*
- *periods of drought*
- *sea level rise*
- *coastal and inland flooding*
- *salt intrusion*
- ...

Once we know more about the effects of climate change, we can work towards a safe, biodiverse and prosperous future.





► 2. New and improved adaptation methods

The province of Zeeland is looking for effective ways to ensure a climate proof future. In this project they found many partners!

Since facts and figures only take us so far, the results of existing research will be tested on the ground. Ten project sites have been chosen to prove our point. They will soon begin their adaptation process. Each area is unique and remarkable, full of wonderful fauna & flora and economic opportunities.

1. Sand nourishment (Galgeplaat)

A sand nourishment of 500 m diameter and approximately 150.000 m³ of sand was carried out and will be monitored to test the effects on the geomorphological processes and ecological quality. Sand nourishment is seen as a promising way to cope with erosion and sea level rise.

2. Hanging Beaches (Schelphoek, Oosterschelde)

By inserting hard surfaces below the sand, a cascade of platforms will form a 'stairway' like transition between water and seawall. This will help retain sand on the 'steps' of the cascade and provide popular bird grounds and possible shellfish beds.

3. Shellfish Reefs (De Val en Slikken van Viane, Oosterschelde)

Another CPA idea is to protect an intertidal flat by creating a reef in front of it. Besides providing delicious shellfish, this reef would reduce the direct wave attack on the beach and thus prevent erosion.

4. Schouwen-Duiveland

Schouwen-Duiveland will investigate the effects of climate change on the island and possible climate adaptation measures. By 2012 all interested parties will build a guide book for a climate proof future.



the Netherlands



5

6



Germany

5. Wesermarsch rural

To solve challenges concerning possible flooding, salinisation of fresh water and drainage systems for the hinterland, a feasibility study will provide insight on these matters.

6. Wesermarsch urban (Brake)

An integrated adaptation strategy will help the city of Brake prepare for climate change, focusing on the challenges concerning increased flood risk.



**United
Kingdom**

7. Great Fen

By reconnecting two smaller National Nature Reserves, flood risk problems in the wider area are solved, together with issues regarding carbon loss.

8. Titchwell

By working closely with the community, the public and stakeholders will gain awareness about the necessity of climate change adaptation measures as the managed realignment in this scheme.

9. Wicken Fen

By eco-hydrological rewetting, this important lowland wetland will become a vital green lung and recreational area and heighten quality of life near Cambridge.





10. Arvika

Arvika suffered severe flood damage in the past. Researchers will down-scale regional climate scenarios to predict the future local climate in Arvika. Consequences for the city's infrastructure and capacity to deliver basic services will be identified. A realistic adaptation plan will provide solutions for a safe and prosperous future.



Sweden

Time to adapt!





▶ 3. Gain support for your plans!

Based on our scientific data and practical project results, we will gain knowledge and know-how of climate proof solutions that we can offer you.

Change is inevitable but we should take advantage of the possibilities it can offer to make improvements in different areas:

- *safety*
- *nature*
- *agriculture*
- *tourism*
- *urban development*
- *living*
- *overall sustainability*

But we can't do it alone.

Scientists and civil servants need new ways of collaborating with each other, private parties, other countries, etc. The climate knows no borders. Neither should we!

By drawing up **policy recommendations**, we hope to inspire decision makers and **set the adaptation process in motion. The time is now!**



Time to adapt!





► **4. Your own Climate Proof Area**

We will learn a lot in the coming years. 2012 will be a progressive year. That's when we collect all proof and transform our new insights to **an actual toolkit.**

Practical reports, tools, policy recommendations and guidelines can offer just what you need to help render your own region, country or continent climate proof.

Talk to you soon!

▶ **Join us!**

▶ *County Administrative Board Värmland*
Länsstyrelsen,
SE 651 86 Karlstad, Sweden
www.lansstyrelsen.se/varmland

▶ *Municipality of Arvika*
20 Teknisk Försörjning,
SE-67181 Arvika, Sweden
www.arvika.se

▶ *Deltares, Unit Subsurface and Groundwater*
Po Box 177
2600 MH Delft, the Netherlands
www.deltares.nl

▶ *Municipality of Schouwen-Duiveland*
PO Box 5555,
4300 JA Zierikzee, the Netherlands
www.schouwen-duiveland.nl

▶ *The National Trust*
Lode Lane, Wicken
CB7 5XP Cambridgeshire, United Kingdom
www.nationaltrust.org.uk

▶ *Oldenburg University*
PO Box 2503,
D 26111 Oldenburg, Germany
www.coast.uni-oldenburg.de

▶ *Province of Zeeland*
Postbus 6001,
4330 LA Middelburg, the Netherlands
www.zeeland.nl

CLIMATE PROOF AREAS

CPA

Posbus 165
4330 AD Middelburg
the Netherlands
T +31 118 63 11 24
info@climateproofareas.com
www.climateproofareas.com

► *Rijkswaterstaat*

Postbus 5014,
4330 KA Middelburg, the Netherlands
www.rijkswaterstaat.nl

► *Wildlife Trust NCPB*

The Manor House, broadstreet,
CB23 6DH Great Cambourne,
Cambridge, United Kingdom
www.wildlifebcnp.org

► *RSPB*

The Lodge, Sandy,
SG19 2DL Bedfordshire, United Kingdom
www.rspb.org.uk

► *Copy, lay-out and pictures*

shutterstock
www.jusbox.be
Provincie Zeeland

► *SMHI*

Research department of governmental authority,
Nya Varvet 31,
SE 42671 Göteborg, Sweden
www.smhi.se

► *Swedish Geotechnical Institute*

Hugo Grauers gata 5 B,
SE-412 96 Göteborg, Sweden
www.swedgeo.se

► *Ghent University*

Civil Engineering - AMRP
Vrijdagsmarkt 10/301
9000 Gent, Belgium
www.ugent.be



Investing in the future by working together for
a sustainable and competitive region



European Union



The European Regional Development Fund