



CPMR REGIONS ACT ON CLIMATE CHANGE

A concrete and strategic know-how



**MEMBER REGIONS
OF THE CONFERENCE
OF PERIPHERAL MARITIME
REGIONS (CPMR)**



Document edited by Région Bretagne, in partnership with the Conference of Peripheral Maritime Regions (CPMR) on the basis of a survey conducted among its member Regions

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EDITORIAL

Dear reader

The first signs of impact that can be associated to climate change are already observed on the ground. Coastal areas and islands most of all, being at the first line, are the most vulnerable to intense climate phenomena or disruptions of long-lasting equilibriums. This publication is the first of its kind and compiles information from maritime regions all over the periphery of Europe, who are witnessing such disruptions.

At the very heart of a global response to climate change, lies the need to reduce greenhouse gas emissions and adapt to a new climate reality. As the climate negotiations in Paris demonstrate, the Conference of Peripheral Maritime Regions (CPMR) feels strongly that there won't be an ambitious global climate policy without the strong commitment of subnational levels. Being closer to citizens and all stakeholders of the civil society and more flexible than national governments, the prospect of regions to deliver solutions within their areas of competence is significant. Regions' initiatives can and will represent an important contribution to the fight against climate change, and is a key driver for the effective adaptation of territories.

As the following pages will show Regions of the CPMR implement a wide array of policies in the fields of renewable energies, smart technologies, transports, financial innovation, social creativity as well as carbon emissions accounting and assessment. All subjects which will determine the success of the Paris agreement in the long run.

The CPMR will continue being present in the global dialogue on climate and advocate solidarity also towards fellow regions of the southern hemisphere. The CPMR promotes a clear territorial dimension in climate policies, which would undoubtedly enable more effective tailor-made solutions and ultimately facilitate the implementation on the ground of the post-2020 global climate agreement.

Climate change constitutes the most important challenge for sustainable human development in the 21st century. The mobilisation of all levels of governance towards this global challenge is a fundamental necessity to any solution. This publication is the initial contribution of how Regions can deliver on grounds of sustainability and long-lasting solutions. Enjoy reading!



Vasco CORDEIRO

President of the CPMR,
President of the Azores Government



CLIMATE CHANGE IS NO LONGER A MERE HYPOTHESIS FOR CPMR REGIONS

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Every member region of the CPMR has a front row seat when it comes to observing the initial effects of climate change in its territory. Although the link between climate change and the rise in the frequency and intensity of certain natural events has not always been scientifically proven, the following reports are priceless in terms of the knowledge they provide and decisive in terms of the regions' ability to cope with global warming.

THE EFFECTS OBSERVED PROVE THAT ECOSYSTEMS ARE CHANGING

Coastal erosion, which is becoming more marked because of the rise in sea levels and the increased frequency of storms, constitutes a threat to the environment and housing in certain regions such as Southern Holland (Netherlands), Pärnu (Estonia) and the Peloponnese (Greece). In the Skåne region (Sweden), coastal erosion poses a threat to almost 23,000 homes in the medium term and meanwhile Tuscany (Italy) has, over the past decade, lost 147,000m² of beaches.

Major weather events are occurring with greater frequency and are more intense. This has been reported by regions such as Aberdeen (United Kingdom) and Skåne, where the number and strength of storms are increasing. Provence-Alpes-Côte d'Azur (France) has regularly been the victim of coastal flooding over the past

few years. Västra Götaland (Sweden), which is in the same situation, is concerned about the rising sea level.

On land, the risks of forest fires have significantly increased as a result of long periods of drought. Central Macedonia (Greece), the Peloponnese, Northern Portugal (Portugal), Shkodër (Albania) and Västra Götaland have all observed greater risks and all of them have introduced higher levels of surveillance.

There has been a noticeable change in the distribution of rainfall. Catalonia, the Valencia region (Spain) or some archipelagos of French Polynesia (France) have had less rain and this has a knock-on effect on crop growth, the characteristics of ecosystems and the replenishment of aquifers. Wales (United Kingdom) and the Nord-Pas de Calais region in France have noted greater frequency and intensity of rainfall, with stormwater drains occasionally unable to cope.



The gradual rise in temperatures has direct environmental, social and economic consequences. In French Polynesia, it has become more difficult to grow pearls, in particular in the lagoons of Polynesian closed atolls. The flora and fauna in Southern Holland are gradually changing. In Hiiumaa (Estonia), global warming is delaying the formation of sea ice, reducing the availability of the ice roads that connect the island to the mainland.

CHANGES IN SPECIES DISTRIBUTION ARE CREATING NEW CHALLENGES

Because of changes in environmental conditions, certain species are moving northwards to find the environment they require and extend their territory. Tiger mosquitoes, for example, have appeared in Poitou-Charentes (France) and the movement of fish, jellyfish and other living marine animals has been observed by the regions of Alentejo (Portugal), Gozo (Malta), Hordaland (Norway), the Basque Country (Spain), Nord-Pas de Calais (France) and Central Greece.

At the same time, new invasive species and harmful organisms have appeared over the last few years. New parasites and pathogens have been reported in Brittany (France) and Cornwall (United Kingdom). Increasing numbers of cyanobacteria have been observed in waters in the Hiiumaa region, a concern because excessive proliferation of these bacteria can be dangerous for humans and fatal for animals.

The ecosystem of Lake Shkodër, the largest fresh water lake in the Balkans, is now under threat from invasive species. And last but not least, Provence-Alpes-Côte d'Azur is facing a challenge from the appearance of toxic fish which are negatively impacting on the biotope by feeding on its algae.

To adapt to the consequences of climate change, local measures have been introduced by regions in the CPMR.



CPMR REGIONS HAVE INTRODUCED ADAPTIVE STRATEGIES

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Global approaches have been introduced over the past decade or more, as well as specific systems aimed at managing flood risks and securing access to fresh water.

ADAPTING TO CLIMATE CHANGE IS OFTEN THE SUBJECT OF A GLOBAL STRATEGY

General adaptive strategies have been developed. The Valencia region has produced a strategy that includes 100 measures to tackle climate change, with actions specifically targeting adaptation issues. All French regions have introduced a regional climate, air and energy scheme (SRCAE) to implement, at local level, objectives that have been defined nationally. Crete (Greece) and the Azores (Portugal) have included sections in their Operational Programme and regional strategies dealing specifically with adaptation to climate change and, with this in mind, have drafted regional plans.

CPMR Regions have also included adaptation measures in their public policies through studies with wide-ranging spatial and temporal components. In 2009, the Poitou-Charentes Region published a prospective study on potential impacts on its territory. Aquitaine (France), for its part, has published a reference work

entitled, *Prévoir pour agir : Les impacts du changement climatique en Aquitaine* (Planning for Action: the Impact of Climate Change in Aquitaine) and it is continuing to implement a broad-spectrum approach, defining indicators to measure the extent of the effects of the changing climate.

TAKING ACCOUNT OF AN INCREASING FLOOD RISK

As far as the management of flood risks is concerned, regions such as Aberdeen or Shkodër have introduced or updated strategies that comply with the European Floods Directive (Directive No. 2007/60/CE). Others, such as Cornwall or Tuscany with a contingency plan of 190 million Euros for the improvement of its coastlines, have developed investment programmes for the introduction of effective tools to combat the threats.

Risk prevention plans are already in place in most CPMR regions. Hordaland, Central Macedonia, the Azores and Réunion (France) have drafted plans to

deal with rivers bursting their banks. The Basque Country has drafted a provisional hydrographic timetable to prepare for floods after periods of drought. Finally, the plan drawn up by the region of Pärnu includes a guide to the measures required for flooding or rivers in spate and recommendations for building work.

To gain greater understanding of these weather events and find more efficient ways of combating their occurrence, many members of the network have taken a forward-looking view. Crete and the Peloponnese are studying their wetlands, which are extremely useful for their ability to absorb and partly retain rainfall, while French Polynesia has begun modelling marine flooding caused by cyclones.

Systems have been introduced to combat flooding, in Skåne and Southern Holland, for example. They involve sand carting to beaches to slow erosion and prevent coastal flooding.

SECURING ACCESS TO FRESH WATER IS A FUNDAMENTAL ISSUE

As regards security of access to fresh water, regions at risk are preparing for potential extreme droughts. The Alentejo region is working to ensure the compliance of the legal framework on

water resource management and planning. The Peloponnese is building infrastructures, tanks and retention basins for stormwater.

Towns in Catalonia are being encouraged to share local water resources to ensure fair distribution in case of need. In the same vein, Provence-Alpes-Côte d'Azur has introduced "Guidelines for the Reasoned, Shared Use of Water Resources" (*Schéma d'Orientations pour une Utilisation Raisonnée et Solidaire de la Ressource en Eau*, SOURCE) to counter any spatial disparities made more noticeable by a gradual drop in available resources across the territory as a whole.

Low rainfall, or rainfall concentrated in only part of the year, has created recurrent difficulties for certain regions. Faced with a negative balance of fresh water, Gozo is renovating and building infrastructures to harvest and store rainwater while increasing public awareness of the need for reasoned usage. On the island of Réunion, a drought committee of experts is assisting the Prefect to ensure that, if the need arises, effective measures can be introduced to limit the use of water.

In addition to policies designed to improve their ability to cope with climate change, CPMR regions are making efforts in every sector to mitigate the effects of human activities on the climate.



CPMR REGIONS ARE RESOLUTELY COMMITTED TO ENERGY TRANSITION

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The diversity of the regions in the CPMR results in a very wide range of initiatives being brought together within a single organisation. The wide array of experiences is representative of diversity within Europe as a whole and has one objective – a reduction in greenhouse gas emissions and the design of new practices that make extensive use of technological, social, territorial and financial innovation.

INNOVATION IS THE CORNER STONE OF THE THIRD INDUSTRIAL REVOLUTION

Many regions have joined with civil society to draft a global strategy for economic and social change in their industrial fabric. Authorities in Spain (Basque Country, Catalonia, Valencia), the UK (Wales, Cornwall) and France (Aquitaine, Brittany, Poitou-Charentes, Provence-Alpes-Côte d'Azur) have decided to do this on a territorial level. For its part, the Nord-Pas de Calais region has decided to launch change through a master plan inspired by Jeremy Rifkin, author of the book, *The Third Industrial Revolution*.

Innovation plays a key role in any such change. In Brittany's regional strategy for economic development, innovation and internationalisation (SRDEII), ecological transition is central to the region's future. The RIS3CAT research and innovation strategy in Catalonia is based

on sectors of business deemed to have the greatest potential. Cornwall and Wales have both designed ambitious policies for energy transition based on innovation. Poitou-Charentes is combining technological and territorial innovation by testing solar energy assessment tools that enable each community to know its potential solar power production.

A negative carbon footprint is the aim of regions such as Hiiumaa, which hopes to reduce its emissions by 102% compared to the figures for 2005. Certain regions are focusing their attention on an increase in the use of renewable energies, sometimes going far beyond the target figures set by the European Union. One such is Northern Denmark (Denmark) with 43% of its energy provided by wind power, taking the total produced by renewable energy sources to 66%. A number of regions are even aiming at totally abandoning the use of fossil fuels – Västra Götaland is expected to achieve this by 2030.

THE SEARCH FOR NEW SOURCES OF ENERGY IS STIMULATING CREATIVITY IN TERRITORIES

Whether on the mainland or islands, CPMR regions are an ideal testing ground for the energy sources of the future. Bretagne and Provence-Alpes-Côte d'Azur regions, among others, combine production and supply resources for renewable energies in a smart grid, giving greater autonomy to isolated areas. An initiative of the Tuscany region led to the creation of a technological cluster of more than 300 companies dealing with energy efficiency, renewable energy and green economy.

ENERGY TRANSITION ENCOURAGES SOCIAL INNOVATION

CPMR Member Regions enjoy a direct relationship with civil society and they have realised that energy transition is impossible without the approval of their citizens. Thus Mecklembourg-Pomerania (Germany), for example, systematically involves local authorities and local people in the building of wind farms so that its citizens become co-operators.

The same type of approach is being implemented by the regions of North and South Denmark, which take full advantage of the obligation imposed on operators to offer 20% of wind farm shares to people living within a 4.5 km radius of the site.

CPMR regions play host to most of the technological innovations and projects for sea-based energy production. Brittany is using marine current turbines to capture energy from the sea, tidal power is due to be captured in Wales by means of a manmade lagoon, La Reunion and Polynesia are using sea-water air conditioning (SWAC), the Basque Country and Peloponnese are harnessing wave power, R&D centre in Mecklembourg-Pomerania... The maritime characteristics of CPMR regions provide a unique basis for experimentation and industrial development.

The use of gas in place of fossil fuels is also being explored by CPMR members. For example, Aberdeen and Mecklembourg-Pomerania are considering hydrogen technology for their public transport vehicles. Aquitaine and North Denmark are promoting biogas, produced by anaerobic digestion. Other Regions, such as Tuscany, are exploring the development of geothermal resources to create heat loops.

Wales has set an extremely ambitious target – a 40% reduction in its emissions by 2020 by means of low carbon technologies, the development of renewable energies and the creation of a carbon sink by planting 100,000 hectares of forest.

SMART TECHNOLOGIES ARE RATIONALISING ENERGY USAGE

The actions being taken by regions are not limited to energy production; a reduction in usage is an essential additional component. The region of South Denmark has invested 80 million euros in a smart grid that enables 14 towns to save 16,000 tonnes of carbon every year.

Catalonia is supporting the installation of a million smart meters in Barcelona to create a new, more economic electricity supply model with a more rational organisation. Cornwall has set up the “Smart Cornwall business development team” to grow local business initiatives and develop a domestic market capable of using locally-produced technologies. Aberdeen is promoting the “Accelerate Aberdeen” project which combines digital technologies and electricity supply. The Island of Réunion is setting up a smart grid to manage energy production and supply from some one hundred photovoltaic panels.

CPMR regions have also become involved in economic smart building policies that can be applied to the renovation of existing housing. Nord-pas de Calais, for example, has decided to renovate a total of 100,000 homes by 2020. The regions of Hiiumaa and Poitou-Charentes are researching positive energy housing. In Brittany, the concept is being applied to agricultural infrastructures.

PERSONAL AND PUBLIC TRANSPORT IS ON THE THRESHOLD OF A MAJOR CHANGE

The reduction of emissions generated by transport is also among the actions being prioritised by our regions. In Hordaland at the beginning of 2015, 30% of cars sold were electric, bringing the current market share of electrically-powered vehicles to 4% of the total. Catalonia also aims to extend its fleet of electric vehicles, with 76,000 sales per year thanks to the availability of more than 90,000 charging points.

In some cases, the transport sector gives priority to alternative sources of energy. By the end of 2015, all public vehicles in the Skåne region will be powered by biogas; all its trains are already powered by electricity produced by renewable energy.

THE CIRCULAR ECONOMY REDUCES RAW MATERIAL WASTE

The CPMR's regions make extensive use of the principles of the circular economy. The Basque Country has set up an ecodesign institute which integrates the potential future recycling of products in the original design phase.



The same principle was used by the Nord-pas de Calais region in 2004 when it launched its “Création Développement Eco-Business” association and a partnership with the Ellen MacArthur Foundation. The eco-business association is spearheading industrial ecology, specialising in eco-production, industrial ecology and eco-design.

ENERGY TRANSITION REQUIRES NEW FINANCIAL TOOLS

CPMR regions have had recourse to a number of innovative financial tools. Aberdeen has introduced European financial engineering to support its energy transition plans. Poitou-Charentes has funded its solar energy project with a 400 million euro loan from the European Investment Bank.

Cornwall's Low Carbon Society and Brittany's Eilañ project have seen an investment fund being used as leverage to stimulate private investment and assist with renewable energy projects. The regions of Skåne and Aquitaine have created a regional carbon credit market.

MONITORING THE REDUCTION IN CARBON FOOTPRINTS IS ALREADY PLANNED FOR THE POST COP21 PERIOD

Carbon footprints are being recorded to calibrate progress, in systems introduced by CPMR regions. Because they have such in-depth knowledge of their own territories, the regions are the ideal testing grounds in which to measure emissions and determine methods for the collation and checking of the data supplied to them (MRV approach). They are also key players in intended nationally determined contributions (INDC).

Both these subjects will be central in the follow-up to the Paris conference and the CPMR regions fully intend to become part of this approach.



THE CPMR, AN EXPERT NETWORK IN THE TERRITORIALISATION OF PUBLIC POLICIES



IT IS NOT TIME FOR BUSINESS AS USUAL

With a new set of climate targets for 2030 Europe has the vision to continue leading the fight against climate change. However, the fight will be won or lost on the ground, as President Juncker put it in his first State of the Union speech. The challenge of addressing climate change is global yet an effective response and long lasting results require a decentralised implementation. Regions, among others, have a key role to play in the delivery of the EU climate targets.

THE CPMR REGIONS ARE ON THE FRONT LINE

The peripheral and maritime regions of Europe are very vulnerable. Spread within the sea basins of the Baltic Sea, the North Sea, the Atlantic, the Mediterranean and the Black Sea, and island and outermost regions even more, they already experience the first signs of climate change : stronger droughts and floods, longer and stronger heat waves, acceleration of coastal erosion,

appearance of pests, increasing scarcity of traditional species...

In the years to come we will be at the first line of defence against increasingly intense phenomena. Climate change will enhance those disruptions and accelerate their secondary effects leading to aggravated contrast between traditionally dry and wet areas.

REGIONS ARE AN ESSENTIAL LINK FOR PUBLIC POLICIES

Our competences in areas directly influencing the levels of greenhouse gas emissions or addressing impacts of climate change are significant. We are closer to citizens and we are more flexible compared to National Governments. A clear territorial dimension, as well as complementary multi-level governance can undoubtedly enable the successful formulation of effective tailor-made climate policies. Our initiatives, at regional level can represent an important contribution to greenhouse gas emissions' reduction for climate change mitigation, as well as to actions on the ground for adaptation to a new climate reality.

OUR POLICIES INCLUDE ALL ASPECTS OF CLIMATE PROTECTION

CPMR regions from the Arctic Circle to the Mediterranean, from the Atlantic to the Black Sea represent a unique data bank for figures, facts and policies to tackle climate change in Europe. Through our experiences in physical, social and economic impacts of a warming climate as well as the intimate knowledge of our own territory we gather a first-hand inventory of the early signs of climate change.

The severe risks that we face on our economies and also on social cohesion require a bottom-up development of policies, concrete plans and actions. Having assumed this role and responsibility we have already taken action to adapt to extreme phenomena, based on our experiences and competences. Our adaptation policies represent a wide array of territorial actions enshrined in global action plans or aiming at specific aspects of climate disruptions.

We have also been engaged in the energy transition and can display extremely wide scope of action in social innovation, new sources of renewable energy, smart grids and building technologies optimizing energy use, low emission for individual and collective transports, circular economy reducing waste. To this end, we have

encouraged research on relevant key topics and we also had to invent new financial tools to use European funds, grants and loans at our best, as well as mobilizing local investors.

Finally through their own carbon footprint disclosure, our regions anticipate one of the main aspects of the COP21 outcome.

TOGETHER WE DELIVER

Our network, the Conference of Peripheral Maritime Regions (CPMR), the oldest and most efficient network of regional authorities, reflects our creativity and spirit of cooperation. Since 1973, within this collaboration platform, together we have addressed our common challenges and together we achieve our common goals. Throughout these years, the CPMR has worked very closely with the European Parliament and the European Commission and has gained valuable competence in the territorial dimension of EU policies as well as in the implementation of those policies at regional level. It is these characteristics that can make CPMR a privileged interlocutor of the European institutions in the context of the implementation of the post-2020 global climate agreement.

The mobilisation of all levels of governance towards this global challenge is a fundamental necessity to any solution.



DRAWING ON THE WEALTH OF REGIONAL EXPERIENCE

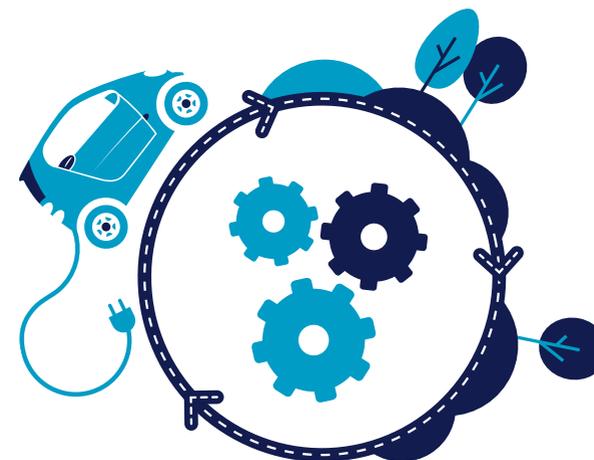
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In this context, we, the CPMR Regions, have assumed our role and responsibility through a series of political commitments. We have committed to:

- * Increase framework cooperation within sea basins and identify, collect and share relevant good and bad practices and case-studies
- * Promote peer-review for the potential for scaling up and replication within and between sea basins, prioritizing key areas where threats are faced, as for instance floods, water management etc.
- * Further promote the use of inventories and monitoring methods of our greenhouse gas emissions, as well as transparent reporting procedures.

- * Mobilise funds, build capacities and strength institutional support to develop and implement adaptation and mitigation plans and strategies in favour of:
 - reducing greenhouse gas emissions,
 - developing new, more sustainable energy solutions,
 - facilitating whenever possible marine energy production technologies,
 - setting the example of an industrial model shift by boosting a low carbon and circular economy,
 - adapting to climate change in continuation of the Mexico Pact (2010).

- * Support and contribute to the creation of effective multilevel governance models to enhance the implementation of policies related to climate change mitigation, as for instance stated in the Ljubljana Declaration aiming to enhance energy efficiency in buildings in the Mediterranean.



- * Further encourage and enable the implementation of concrete projects on the ground across our territories on climate change mitigation, with emphasis on renewable energy, energy efficiency and transport, including maritime transport, as well as on adaptation to climate change.
- * Get further involved in innovative climate initiatives, such as Climate-Knowledge and Innovation Communities (Climate-KIC).

In addition, in the framework of the Bologna Charter, Mediterranean Regions have developed a Joint Action Plan to protect the Mediterranean coasts and enhance their resilience to climate change.

The CPMR will continue working closely with its member-regions to facilitate the implementation of these commitments. With a forward-looking approach, we will be aiming at attracting investments in our territories and we will also be exploring the available opportunities to benefit from European funds that support research and innovation.

We are also ready to cooperate with the European Parliament and the European Commission to study and enhance the territorial dimension of EU climate action, in particular in those areas where regions have competences.

The change of paradigm towards a more climate-friendly economy can be an opportunity for a more collaborative Europe, the invention of new forms of development and active citizenship encouraging the creation of wealth and jobs and the boost of innovation and competitiveness.