



# ORIENTGATE REPORT

## **Report on the state of the art in term of policies and plans**

**Work Package 7**

**Act. 7.1 State of art on mitigation and adaptation plans and identification of cross sectoral links.**

*Deliverable n. 1*

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## 1. Introduction

Climate change is one of the main concerns for the European Union as demonstrated by its international engagement in leading global efforts to reduce greenhouse gases emissions. Nowadays, EU is driving the transition towards a low carbon economy and very strictly targets were set for the EU as a whole and for all the Member States. In particular, in the “Energy roadmap 2050” the EU is committed to reducing greenhouse gas emissions to 80-95% below 1990 levels by 2050 going beyond the 20% reduction established in the so-called 20-20-20 strategy for 2020.

This ambitious objective can be reached through a large-scale penetration of renewable sources, energy-efficient building materials, hybrid and electric cars, 'smart grid' equipment, low-carbon power generation and carbon capture and storage technologies.

At the same time, EU recognizes the urgency to make regions and cities more climate resilient adapting them to climate change, throughout the implementation of suitable adaptation strategies. In particular, in April 2013 the European Commission adopted the Strategy on Adaptation to Climate Change, providing a comprehensive guidelines on the process of developing, implementing and reviewing adaptation strategies, identifying barriers to the uptake of suitable strategies at national level<sup>1</sup>.

As it is underlined in many strategic documents, mitigation and adaptation are two complementary aspects, that must be coupled in addressing climate change. The reduction of GHG emissions could not stop the effects of the climate change that are already occurring, but it is also necessary to implement strategies for adapting society to future climate variation.

As concern mitigation, almost all the EU countries are engaged in cutting their GHG emissions, the most of them with specific targets, others, a minor part, are however defining sustainable development low emissions strategies.

On the other hand, only several EU countries have already implemented an adaptation plan identifying measures and interventions to cut GHG emissions and reduce the impacts of climate variations on more vulnerable sectors, trying to foresee and react to the anomalous phenomena. However, the majority of the remaining European countries are already undertaking processes to develop comprehensive adaptation plans and strategies, following the working plan proposed in the “White paper adapting to climate change: Towards a European framework for action”<sup>2</sup>.

A key step for promoting suitable mitigation and adaptation plans is the characterization of the reference planning framework, which includes the critical review of existing policies and plans implemented by the European Union as well as by national and local authorities, in particular of South East European (SEE) countries. Moreover taking into account the multisectorality and multidisciplinary of adaptive strategies, a comprehensive characterization of the reference planning framework involves also the identification and selection of existing links with other sectoral and territorial plans, in the fields of agriculture, forestry, energy, transport, water management, biodiversity.

The critical review of existing policies and plans is essential to define the state of the art, to identify a basic set of adaptation and mitigation measures, and to support the definition of the optimal mix of all these measures for regional planning.

In this report a comprehensive assessment of the state-of-art of mitigation and adaptation plans in the Orientgate country partners is presented, providing a country-by-country overview of the main national and local strategies and actions on climate change.

This report was implemented in the framework of the Work Package 7 “Regional planning cross sectoral study” / Activity 7.1. “State-of-the-art on mitigation and adaptation plans and identification of cross-sectoral links” thanks to a joint effort by several partners representing all the 13 countries involved in the Orientgate project. Along with the “*Report on cross sectoral links*”, developed also by Activity 7.1., this report provides an updated and complete picture of the climate change mitigation and adaptation policy framework in South East Europe.

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## **2. Climate policy of the European Union**

The Intergovernmental Panel on Climate Change (IPCC)<sup>1</sup> made clear in the Fourth Assessment Report, *Climate Change 2007*, the unequivocal evidence that the climate is warming globally. For the first time, with very high confidence, wide ranging impacts related to the changing in current climate were documented for Europe.

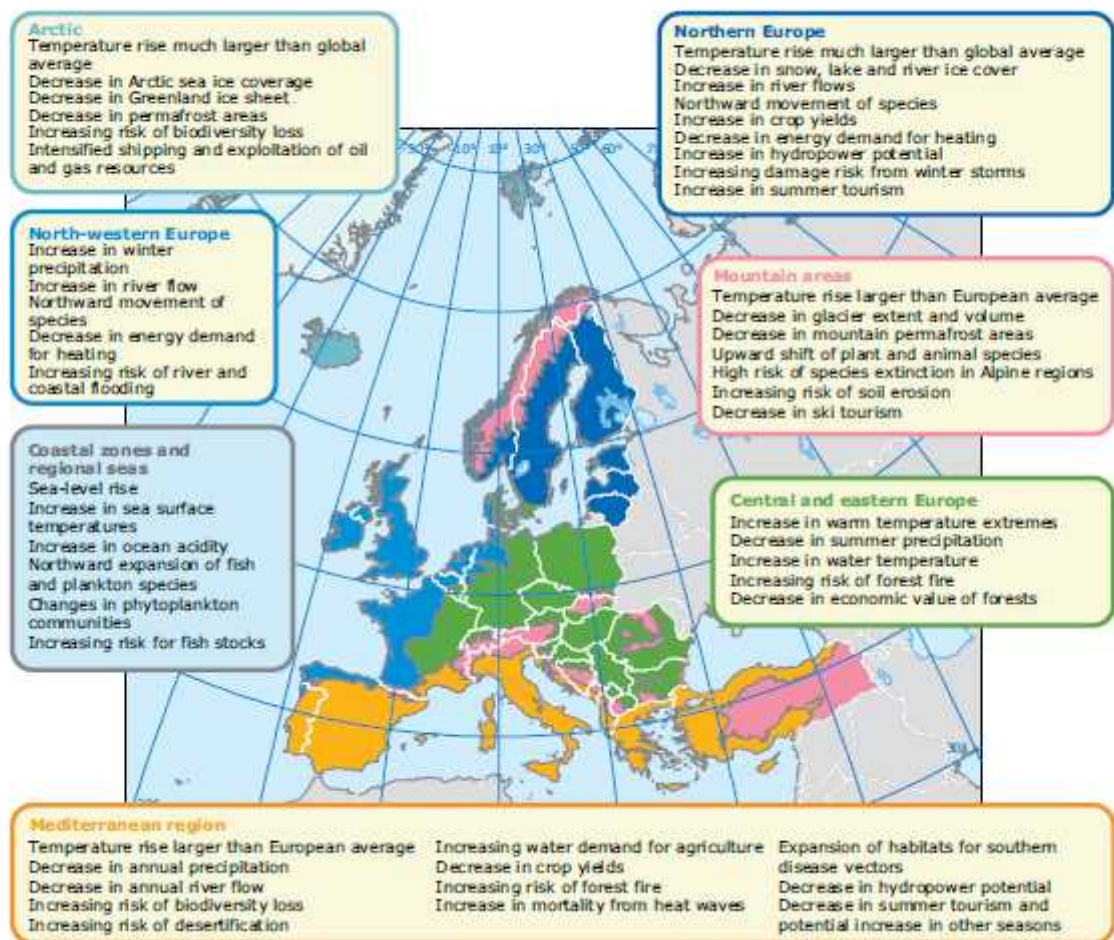
In this report, IPCC foresees for Europe that climate-related hazards will very likely to increase, pointing out that winter floods, coastal flooding, droughts, fire risks, and melting of permafrost are only some of the possible future risks.

The actual impacts of climate change and their severity are expected to vary across regions as it was pointed out by the European Environmental Agency in its report on “Climate Change Impacts and Vulnerability in Europe” (Figure 2.1)<sup>2</sup>. Moreover, regional differences are expected to increase in Europe depending on many factors such as frequency and magnitude of extreme weather events, population density and the value of local economic assets<sup>1</sup>.

In order to avoid the occurrence of very significant impacts in the long-term it is fundamental to avoid delays in the adoption of measures and strategies for tackling mitigation and adaptation to climate change.

The European Union has always been committed to face up climate change by setting a robust policy framework, and playing a leading role in the international scene. In particular, since the early 1990s, when the climate change dossier was moving up the international political agenda, the EU was in the forefront in the international climate negotiations on mitigation held under the UN Framework Convention on Climate Change (UNFCCC), in which, the need for global political, technological and financial action was brought up front.

In 1997, with the signature of the Kyoto Protocol, the 15 EU Member States committed to reduce greenhouse gases (GHG) emissions to 8% in the 2008-2012 period, below the 1990 level. Since then, the European Commission has promoted a comprehensive package of policy measures to reduce GHG emissions, launching in 2000 the first European Climate Change Program (ECCP)<sup>3</sup>, whose aim was the identification of the most environmentally effective and cost-effective policies and measures to cut GHG emissions at European level according to the Kyoto Protocol.



**Figure 1:** Key observed and projected climate change and impacts for the main regions in Europe<sup>2</sup>.

The Second European Climate Change Program (ECCP II)<sup>4</sup> started in 2005, with the aim to review progress and provide guidance on additional measures needed to meet the EU's Kyoto commitments reducing GHG emissions, focusing on carbon capture and storage, CO<sub>2</sub> emissions from light-duty vehicles, and emissions from aviation. Moreover it provides adaptation policies to the effects of climate change.

The European Union has defined the so-called “20-20-20” Strategy, establishing three key targets<sup>5</sup> for 2020: a 20% improvement of energy efficiency, a 20% increase of the share of renewable energy in the EU's energy mix, and a 20% reduction of greenhouse gas emissions (rising to 30% for the major economies that agreed).

These goals were also incorporated into the ‘Europe 2020’<sup>6</sup> Strategy for smart, sustainable and inclusive growth and into its flagship initiative ‘Resource-efficient Europe’<sup>7</sup>.

As outlined by Ahtonen<sup>8</sup>, even the best mitigation efforts will not stop climate change and its impacts, especially because the long time lag between mitigation measures and their effect on the climate. Thus, efforts to reduce greenhouse-gas emissions must be coupled with adaptation strategies to a changing world through the setting up of well focused measures to deal with its impacts.

The European Union, with the Green Paper on Climate Change Adaptation (COM(2007) 354 final) and later with White Paper “Adapting to climate change: Towards a European framework for Action”<sup>9</sup> (COM(2009) 147 final), laid the foundations for the construction of a



Community policy framework on adaptation, identifying the vulnerabilities to the impact of climate change and setting out a number of measures to enhance the EU's resilience.

As a key deliverable of the White Paper, in March 2012, a web-based European Climate Adaptation Platform (Climate-ADAPT)<sup>10</sup>, was launched, providing, and making available to citizens, policy makers and professionals, the latest data on adaptation action in the EU, alongside several useful policy support tools.

The EU Strategy on Adaptation to Climate Change<sup>11</sup> was adopted last April by the Commission. This Strategy will provide a comprehensive guidelines at local, regional, national and EU levels to make policy makers able to adopt comprehensive adaptation strategies for facing climate change.

The EU Strategy on Adaptation to Climate Change focuses on three key objectives:

- Promoting action for all Member States: The Commission will provide funding to help and encourage all Member States to build up comprehensive adaptation strategies (moreover, cities will be also supported in the implementation of adaptation plans by launching a voluntary commitment based on the Covenant of Mayors initiative).
- Supporting a 'Climate-proofing' action at EU level, with the aim to make more resilient Europe's infrastructure and promote the use of insurance against natural and man-made disasters, with a specific focus on the key vulnerable sectors such as agriculture, fisheries and cohesion policy.
- Assuring a better informed decision-making through addressing gaps in knowledge about adaptation and further developing the European climate adaptation platform (ClimateADAPT).

In compliance with this Strategy, 15 EU Member States have adopted by now a national adaptation strategy: Austria, Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, Lithuania, Malta, the Netherlands, Portugal, Spain, Sweden and the UK<sup>10</sup>. In the meanwhile, national adaptation strategies are currently under preparation in other countries. In most cases adaptation is still at an early stage, with relatively few concrete measures; some Member States have developed sector specific plans but only a third carried out a comprehensive vulnerability assessment to support policy. Monitoring and evaluation is proving to be particularly difficult, as indicators and monitoring methodologies have hardly been developed<sup>11</sup>.

In conclusion, planning for adaptation and mitigation is a dynamic process all around Europe. Table 1.1 reports an overview of the state of the art of national adaptation and mitigation strategies and plans in Europe, showing the different stages of preparing, developing and implementing national strategies.

Country	Strategy/Plan	Adaptation	Mitigation
Austria	Austrian Adaptation Strategy	√	
Belgium	Belgian National Climate Change Adaptation Strategy	√	
Bulgaria	Second National Action Plan on Climate Change	√ <sup>i</sup>	√
Czech Republic	National Programme To Abate the Climate Change Impacts in the Czech Republic.	√	√
Denmark	Danish strategy for adaptation to a changing climate	√	
Finland	Finland's National Strategy for Adaptation to Climate Change	√	

<sup>i</sup> The development of a National Adaptaion Strategy is ongoing.

France	National Adaptation Plan (2011-2015)	√	
Germany	Integrated Energy and Climate Program; German Strategy for Adaptation to Climate Change; Adaptation Action Plan of the Germany Adaptation Strategy	√	√
Ireland	National Climate Change Adaptation Framework	√	
Italy	National Adaptation Strategy, National Plan to reduce Greenhouse Gases	√ <sup>ii</sup>	√
Lithuania	National Strategy for the Implementation of the UNFCCC until 2012, Strategy for National Climate Management Policy 2013-2050	√	√
Malta	National Climate Change Adaptation Strategy	√	
Netherlands	National programme for spatial adaptation to climate change	√	
Norway	Plan for Climate Adaptation	√	
Poland	National Adaptation Strategy (SAP)	√ <sup>iii</sup>	
Portugal	National Strategy for Adaptation to Climate Change (ENAAC)	√	
Spain	The Spanish National Climate Change Adaptation Plan - PNACC (in Spanish) Spanish Strategy on Climate Change and Clean Energy	√	√
Sweden	Swedish Government Official Reports (2007). Sweden facing climate change – threats and opportunities. Final report of the Swedish Commission on Climate and Vulnerability.		√
United Kingdom	Climate Change Plan 2010	√	√

**Table 2.1:** National mitigation and adaptation strategies and plans in Europe (data retrieved from the ClimateADAPT database and from [www.climateadaptation.eu](http://www.climateadaptation.eu) 16 May 2013<sup>12</sup>).

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<sup>ii</sup> The development of a National Adaptation Strategy is ongoing.

<sup>iii</sup> The development of a National Adaptation Strategy is ongoing.

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### **3. Climate policies in the ORIENTGATE Countries: normative framework on national and local level**

In the following paragraphs the policy framework of the countries partner of the Orientgate project is described, providing a country-by-country overview of the main climate change policies and strategies undertaken by national and/or local governments.

#### **3.1 Albania**



The Government of Albania joined the UNFCCC on January 1995 and ratified the Kyoto Protocol on 16th of December 2004, acknowledging the significance of the climate change problem and the urgency to undertake effective strategies for its mitigation.

As a non-Annex I Party Albania has no emission reduction targets under the Kyoto Protocol, although it has undertaken some initiatives to cope with climate change.

In particular, the National Climate Change Action Plan – NCCAP defines a set of priority actions with the main aim of reducing the growth rates of greenhouse gas emissions, reducing the vulnerability and adapting to expected climate changes.

According to the First National Communication (2002)<sup>1</sup>, Albania was found to be a relatively low net emitter of greenhouse gases, with 1.97 ton CO<sub>2</sub> emissions per capita (respect to the average European value of 8.40 ton CO<sub>2</sub>/capita) in 1994.

In the framework of the Second National Communication (2009)<sup>2</sup> an update of the GHG inventories was provided for the period 1990 – 2000, together with an analysis of GHG abatement options. In 2000<sup>2</sup> the GHG emissions per capita were 2.47 tons of CO<sub>2</sub> eq per capita, recording a considerable increase respect to 1994 value (although 4–5 times lower than the average values for industrialized countries).

These low values in GHG emissions are due to a low energy consumption in the demand side, where the energy mix is mainly based on electricity<sup>2</sup>. As concern the supply side, more than 90% of electricity is produced by hydro power plants .

In order to mitigate climate change, reducing GHG emissions through a decrease of energy demand and an increase of the energy supply efficiency, a set of prioritized measures/technologies was selected by the Second National Communication. These recommendations aim to contribute also to the achievement of sustainable development objectives and enable Albania to mobilize resources from Kyoto or market based mechanisms<sup>2</sup>.

In particular, an Action Plan related to the Updated of the National Energy Strategy (June 2003), was adopted, identifying several measures producing an abatement effect on GHGs:

1. “Thermal insulation of existing stock of public buildings based on a new code for building new stock
2. Promotion of thermal solar energy use
3. Renewable Energy and Energy Efficiency Promotion Programme (improvement and extension of electricity supply, strengthened grid stability, reduced system losses, energy saving)
4. Encouragement of using efficient bulbs in households, service sector and industry
5. Substitution of fossil fuels like coal, oil coke with Heavy Fuel Oil; Increasing Energy Efficiency of boilers/furnaces in industry & services sector.
6. Increase of power factor in industrial companies
7. Improving energy efficiency of vehicle stock”<sup>2</sup>.

As concerns adaptation<sup>2</sup>, an Adaptation Action Plan for Albania has been drafted in the framework of the multi-country Climate Change Adaptation Framework (SEE/CCFAP-A, 2009-2015)<sup>3</sup>. The Action Plan was implemented taking into account the main national development strategies, such as National Strategy for Development and Integration (NSDI, 2007-2013), National Strategy for Socio-economic Development (NSSED), Albania National MDG Report, etc.

The Adaptation Action Plan foresees several adaptation measures for fighting climate change, in particular:

- Prevent the negative effects – anticipatory actions to reduce the susceptibility of an exposure unit to the impacts of climate

- Avoid or exploit changes in risk
- Research into new methods/ technologies of adaptation
- Educate, inform, and encourage behavioural change- dissemination of knowledge through education and public information.

Moreover, a set of projects was identified in different vulnerability area for adapting to climate change, in particular in Agriculture, Coastal areas, Livestock, Fishery, Forestry and Health.

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## 3.2 Austria



### 3.2.1 National strategies, plans and programmes

#### **Austrian Adaptation Strategy (AAS), 2012**

This strategy was adopted by the Ministerial Council on October 23rd, 2012.

Overall aim:

- to reduce anticipated negative impacts of climate change on Austria's society, economy and nature/ecosystems
- to use positive effects of climate change and promote synergies
- to provide an overall framework in which adaptation should take place - this should ensure coordination and harmonisation of the various climate change adaptation activities

Austria has elaborated this National Adaptation Strategy in the course of a process starting in 2007.

Representatives of public administration and sector policy makers, NPOs and NGOs, the private sector as well as researcher were actively involved in a participatory process accompanying the development of the Austrian Adaptation Strategy (AAS).

AAS encompasses two major documents: the general adaptation framework ("Kontext") and a catalogue of adaptation options for 14 sectors/themes (Action-Programme, NAP): agriculture, forestry, water, tourism, energy – focus electricity, natural hazards, housing and construction, civil protection, health, ecosystems and biodiversity, transport infrastructure, spatial planning, economy and urban green.

Austrian adaptation options have been developed beyond generic recommendations and include specific information for implementation such as responsibilities, existing instruments to be used for mainstreaming adaptation, time frame for implementation, and required resources, etc. Thus, this approach provides measures and information on existing

instruments which can be entry points for adaptation in terms of climate proofing, and highly supports implementation.

The current AAS provides a suitable framework for an on-going process of adapting to climate change impacts, representing a first cornerstone in the Austrian national adaptation process. It needs to be further developed and updated at regular intervals in accordance with actual developments, (policy) requirements and gains in knowledge, in the sense of a “living document”. Regular assessments of the progress of adaptation will be initiated and coordinated by the Ministry of Agriculture, Forestry, Environment and Water Management through these evaluation processes. A first implementation report will be presented by the end of 2014 (further reporting is foreseen in a three-year cycle).

### **National Climate Strategy, 2007**

Within the framework of the Kyoto Protocol, Austria undertook the commitment to reduce the emissions of greenhouse gases during 2008-2012 to 13% in comparison to the level of the year 1990. Therefore a National Climate Strategy was elaborated in 2007, in order to reach this target. In 2012 a comprehensive evaluation was conducted by the Austrian Environment Agency (Umweltbundesamt), revealing that Austria did not get much closer to the Kyoto target in recent years, despite the implementation of several climate protection measures. As a consequence the Strategy had to be adopted and further measures were elaborated together with experts during various working group meetings.

The focus was laid on increase of energy efficiency (thermal renovation of buildings, attractiveness of bicycle-, foot traffic and public transport), and renewable energies (biomass for heating and electricity, solar collectors, long-distance heating, wind power), taking account of regional available resources, and the promotion of the development of new technologies to reduce greenhouse gas emissions on the one hand and to stimulate employment and economic growth on the other hand. To give the climate policy more attention and acceptance, additional activities are proposed - in addition to the adaptation measures - that can be implemented quickly and have a high signal effect.

As it concerns forest management, the **Austrian Forest Programme 2005** has elaborated 7 main thematic areas on the basis of the “pan-European Criteria for Sustainable Forest Management” of the Ministerial Conference on the Protection of Forests in Europe (MCPFE). In particular, the 7 thematic areas are<sup>1</sup>:

1. Contribution of Austrian forests to climate protection
2. Health and vitality of Austrian forests
3. Productivity and economic aspects of Austrian forests
4. Biological diversity in Austrian forests
5. Protective functions of Austrian forests
6. Social and national economy aspects of Austrian forests
7. Austria’s international responsibility for sustainable forest management

Concerning the “climate change issue” (thematic area 1) following measures are proposed:

- Development and implementation of a recognised monitoring system
- Strengthening climate impact research of regional evidence and soil research related to carbon sinks

- Development of adequate adaptation strategies for forest stands (scenario-related basic research, development of technical knowledge, counselling and promotion - with regard to silviculture and forest protection measures in particular)
- Reduction of emissions of climate-related gases in all fields, especially by imposing the state-of-the-art and paying special attention to the implementation of the Austrian climate protection strategy
- Adequate strategies for the best possible substitution of fossil fuels and raw materials for renewable raw materials (biomass in particular<sup>iv</sup>)
- Evaluation of possibilities for accounting carbon storage in wood products: Elaboration of accounting rules in the international context

The **Austrian National Environment Plan, 1995** was the first step to intensify the discussion about sustainable development in Austria and the attempt to integrate environmental issues into all levels of policy. Therefore long-term oriented targets and standards for Austria were defined to initiate an environmentally suitable development and additionally the required structural change. A catalogue for the realization of necessary measures in this context was prepared. Unfortunately a systematic implementation, evaluation as well as updating of its targets and measures have not yet been carried out. Only in some parts an implementation within the framework of the Austrian Strategy for a Sustainable Development (NSTRAT) and of already existing sectoral programmes (e.g. Austrian Climate Strategy) is taking place<sup>2</sup>.

### **Austrian Spatial Development Concept (ÖREK), 2011**

As spatial planning related tasks have to be coordinated between all levels of government (Federal Government, Federal Provinces and municipalities) the Austrian Conference on Spatial Planning (ÖROK) was set up in 1971 as a political body. Its main duty it to prepare the Austrian Spatial Development Concept (ÖREK), which is updated about every ten years, as a joint steering instrument for defining common tasks for spatial planning and development in future. In comparison to previous Concepts the ÖREK 2011 emphasizes the importance of implementation with improved strategic orientation and the cooperation between experts and legal representatives. As the motto of ÖREK 2011 is “Space for all” all relevant actors from the public sector were involved in the preparation phase and furthermore many stakeholders should be addressed.

One of the strands deals with “climate change, adaptation and resource efficiency”. The most important tasks for spatial planning and development are:

- Securing spaces for renewable energy production and energy distribution
- Preservation of free spaces within the HQ100 inundation levels (Flood retaining dams and flood plains) and areas with other natural risks (mud- and rockslides)
- Closer cooperation between zoning and Hazard Zone Plans as well as integration of additional natural hazards and inclusion in applicable laws
- Active land policy and space-saving zoning, sustainable settlement development

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<sup>iv</sup> **Remark:** The removal of biomass rich in nutrients (needle and leave mass, small branches) has an adverse effect especially on sensitive sites (e.g. with shallow, sandy soil) and can result in considerable increment losses. [BMLFUW (2007): The Austrian Forest Programme; S. 40]



- Establishment and long-term securing of the high quality functions of free space (e.g.: spring water protection areas, nature protection and recreational areas) by incorporating in zoning
- Creation of integrated space and energy concepts considering mobility management, energy efficiency criteria in zoning plans (e.g. “energy certificate for settlements”)
- Long-term securing of the supply of raw materials for settlements in zoning plans (definition of suitable areas for the extraction of raw materials in coordination with sensible areas)
- Development and implementation of energy and climate-sensitive integrated transport and mobility systems and availability of space for inter-modal hubs
- Definition and location of network and hub planning especially with respect to infrastructure for electro-mobility

### **Austrian Energy Strategy, 2009**

On behalf of the Federal Government the Minister for Economy and the Minister for Environment prepared this strategy together with the Federal Provinces and the most important stakeholders of science, economy, environment and society for a realignment of the Austrian energy policy. With about 150 experts the targets for 2020 (due to the European energy and climate targets 2008) and the respective measures were elaborated. This report has to be regarded only as a starting signal for a long-term process of a sustainable energy-policy. Therefore the effects of the recommended measures must be evaluated and permanently adopted due to the actual framework conditions (price development, new technologies...).

Due to the European targets Austria is committed by 2020 to increase the percentage of renewable energy suppliers on the gross final energy consumption by 34 % and at the same time to decrease its greenhouse gas emissions in those sectors, which are not subject to the emissions-trade (effort sharing), by at least 16 % (in comparison with the level of 2005). Furthermore the energy efficiency has to be increased by 20 %.

Therefore Austria has developed three strategy pillars:

- Consequent increase of energy efficiency in all important sectors (housing, mobility and companies)
- Expansion of renewable energies (hydropower, wind energy, biomass and photovoltaics; long-distance heating; 10 % percentage of renewable energy in the mobility-sector by biofuel and e-mobility)
- Long-term guarantee of energy supply for the society (adaptation of the network infrastructure to more decentralized production and increased flow rates; hub for grid-bound energy suppliers, expansion of energy storage systems)

### **3.2.2 Local Legislation (of the Federal Province UPPER AUSTRIA)**

#### **Government Programme 2009-2015**

The federal government of Upper Austria has passed a resolution in 2005 to achieve the Kyoto objectives for Upper Austria (-13% of greenhouse gas emission from 1990 to 2010).

On this purpose a “climate package” with a lot of sectoral mitigation measures was fixed. Climate change adaptation activities are not part of the package, but climate policy is defined as trans-sectoral task.

For the first time goals and measures concerning climate change adaptation are addressed in the recent governmental working program 2009 to 2015:

- Development of a comprehensive scenario of the impacts of climate change and the need for action (adaptation concept). In this context new models of risk management should be assessed.
- The implementation of ongoing flood protection program will be continued<sup>3</sup>.

#### **Climate Change Adaptation Strategy for Upper Austria (draft)**

Based on the Austrian Adaptation Strategy (AAS) 2012 also Upper Austria developed a Climate Change Adaptation Strategy in the current legislature period. The draft document was elaborated last March.

Upper Austria studied very carefully the consequences of climate change after the flooding in 2002 and initiated not only a research program and the establishment of a “climate change adaptation” department within the Federal Province, but also the development of an “Austrian Adaptation Strategy” beside the existing “National Climate Strategy”.

Within this Strategy measure packages – mainly in terms of climate adaptation - are developed for all sectors based on results from several studies in the context with climate change.

#### **Traffic Concept, 2008**

The focus of this concept is to strengthen the public transport by enlargement and optimization. The main targets are:

- No expansion of building zones before mobilization of existing building zones
- Definition of criteria for a traffic-minimizing spatial structure
- Promotion of settlement development in areas with good access to public transport by instruments of spatial planning and subsidies for housing

#### **Energy Strategy 2030**

This Strategy aims for a complete coverage of energy demand for housing and electricity by renewable resources (Water power, Wind mills, photovoltaic, solar heating) for the whole Federal Province.

#### **References**

1. BMLFUW (2007): The Austrian Forest Programme
2. BMLFUW (2007): The Austrian Forest Programme; S. 20
3. CLISP (2011): WP 5.3 In-depth evaluation of spatial planning instruments and procedures; Synthesis Report

### **3.3 Bosnia and Herzegovina**



Bosnia and Herzegovina (BiH) has signed the United Nations Framework Convention on Climate Change (UNFCCC) on December 6, 2000, as a non-Annex I member country, and, in 2009 prepared the Initial Communication to UNFCCC<sup>1</sup>.

From this document arise the consciousness of the high vulnerability to climate change of BiH territory, and it is predicted that threats from climate change will be considerable. The high sensitivity to these threats is imputable also to the important economic role of “climate-sensitive” sectors, such as agriculture and forestry (and the role of hydropower in the energy sector to a lesser extent), with significant secondary impacts. Moreover, it has been recognised the very limited adaptive capacity to address climate risks of Bosnia and Herzegovina.

This framework presented in the Initial National Communication makes clear the urgent necessity to tackling the challenge of climate change. This document represents only the beginning of a long process that BiH government have been undertaken towards understanding and addressing impacts of rising temperatures. In order to define policies and measures that will allow to undertake the commitments under the UNFCCC and the Kyoto Protocol, BiH is committed to develop a Climate Change Mitigation Strategy and Action Plan. The Strategy should define the national policy on mitigation of climate change and the relationship with the national economic and development plans, implementing short-term, mid-term and long-term objectives. Moreover, the Strategy should identify policy tools, technical and other measures, organization, key actors, responsibilities, costs, funding options and an implementation timeframe.

As concerns adaptation issues, Bosnia and Herzegovina has not yet developed its own adaptation plan, but it is engaged in the process of study on the vulnerability and adaptation of its territory, preparatory research to the implementation of a structured adaptation plan. BiH with the aim to support sub-regional cooperation in the field of climate change observation, monitoring, and forecasting has endorsed the creation of the multi-country Climate Change Adaptation Framework (SEE/CCFAP-A, 2009-2015)<sup>2</sup>, and it has expressed interest in coordinating sub-regional activities of the Framework countries in the area of adaptation in energy and agriculture.

**References:**

1. Initial National Communication (Inc) of Bosnia and Herzegovina under the United Nations Framework Convention On Climate Change (UNFCCC). 2009. Available at: [http://unfccc.int/essential\\_background/library/items/3599.php?such=i&symbol=%20BIH/COM/1%20E%20#beg](http://unfccc.int/essential_background/library/items/3599.php?such=i&symbol=%20BIH/COM/1%20E%20#beg)
2. South East European Climate Change Framework Action Plan for Adaption – SEE/CCFAP-A. <http://www.global-issues-rtd.info/programmes/2138.html>

### 3.4 Bulgaria



Bulgaria signed the UNFCCC in Rio de Janeiro in June 1992 (ratified in 1995) and, in 2002 Bulgaria ratified the Kyoto Protocol binding to reduce 8% its GHG emissions in the first commitment period (2008-2012) respect to base year (1988) emissions<sup>1</sup>. According to the European Commission annual report on the progress of achieving Kyoto objectives<sup>2</sup> in the EU member states from 2012, Bulgaria has around 50% of total emissions reduction until the year 2008 compared to the base year, which is an over-delivery of 42%. The main factors for this trend are the transition to market economy after the end of communist government in the late 1980s, the restructuring of the industry sector, the policy for liberalization of the energy market, and additionally changes in total population and national GDP.

Given the current GHG emission level and the expected emission trend, the need for Bulgaria to undertake mitigation measures is limited, moreover, it has much lower emissions from the admissible (according to the Kyoto Protocol). However it has potential for additional decrease of GHG emissions.

The responsible national body for overall environmental policy in Bulgaria is the Ministry of Environment and Water (MOEW), that deals also with climate change issues. The MOEW has prepared the National Environmental Strategy (2009-2018) defining common guidelines in the environmental policy areas, including climate change.

In particular, the following policy instruments are applied in the mitigation to climate change:

- Legal instruments and regulations comprise of multilateral and bilateral international agreements, the EU legislation in the field of climate change and the national legislation, which relate to the climate change
- Fiscal policy contains instruments to stimulate measures that reduce emissions of greenhouse gases and/or save energy.
- Financing - Energy Efficiency Fund, International Fund “Kozlodui”, Enterprise for management of activities on environment, International Emissions Trading (Green Investment Scheme), EU structural funds.
- Education, research and development and awareness raising and public information

- The Strategy is consistent with the principles of the prevention and reduction of the human health risk, integration of the environmental protection policy in the sectoral policies on the development of the economy and awareness of the citizens on the state of the environment.

The Environmental Protection Act along with the Third National Action Plan on Climate Change (2013-2020)<sup>3</sup> define the current legal climate framework concerning adaptation.

In particular, the Environmental Protection Act defines the Bulgarian national green investment scheme as an instrument intended to be used for the development of projects with adaptation activities.

Whereas, the Third National Action Plan on Climate Change (2013-2020) defines a number of adaptation measures in all emissions-related sectors such as:

- Energy production;
- Households;
- Services;
- Industry;
- Wastes;
- Agriculture;
- Land use and Forestry;
- Transport;
- Education and Science.

GHG emission levels for the period encompassed by the Action Plan are estimated to have potential for reduction of between 7,8% and 18,7% in comparison to the year 2005 levels as a result of all planned measures.

In reference to climate change adaptation in Bulgaria, the creation and adoption process of National Adaptation Strategy (NAS) has started, under the coordination of the Ministry of environment and water. Moreover, the MOEW has prepared a draft of an Act for restriction of climate change which is due to be adopted by the Parliament, thus becoming a significant part of national adaptation framework.

## References

1. Fifth National Communication on Climate Change (Second Submission) to United Nations Framework Convention on Climate Change. Republic of Bulgaria. 2011.
2. Report from the European Commission to the European Parliament and the Council on the progress towards achieving the Kyoto objectives. 2012.
3. Third National Action Plan on Climate Change (2013-2020). 2012.

### 3.5 Croatia



The Republic of Croatia is a country which is currently in the process of accession to the EU. Accession is conditioned by the harmonization, adoption and implementation of the entire *acquis communautaire*, i.e. the body of legislation and rules already implemented in the EU. Croatia has signed the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 and ratified it in 1996 (Official Gazette, International Treaties No. 2/96). As an Annex I country, Croatia signed the Kyoto Protocol in 1999 commits itself to reduce emissions of greenhouse gases by 5%, in 2008-2012 respect to 1990 level. The Kyoto Protocol has been ratified by Croatian Parliament on 27 April 2007 (Official Gazette, International Treaties No. 5/07) coming into force on 28 August 2007.

The First National Communication of the Republic of Croatia to the United Nations Framework Convention on Climate Change (UNFCCC) (2001) edited by Ministry of Environmental Protection and Physical Planning of Croatia indicates that Croatia is a country particularly vulnerable to the impact of climate change due to its 5,800 km long coastline with 1244 islands, and its fragile agriculture and forestry with their social and economic significance. There is also the potential influence on hydrology, water resources, mainland and coastal ecosystems. Therefore, Croatia has cause for concern and is motivated to take an active part in international efforts aimed at finding practical solutions to climate change.

In 2008, United Nation Development Programme (UNDP) issued a report, 'A climate for change – climate change and its impact on society and economy in Croatia' which was the first UNDP National Human Development Report concerning climate change and its impact on society and economy. This report stated that damages in some sectors, like agriculture, fisheries, health, hydropower and tourism, which represent 25% of the Croatian economy, employ almost half of the working population and account for 9 billion Euro of the Croatian annual Gross Domestic Product (GDP) are results of climate variability.

Legislation in Croatia related to climate variability and change issue :

- Law on the Performance of the Hydro-meteorological Service in the Socialistic Republic of Croatia (OG No. 14/78)
- Law on the Air Traffic 1998 (e.g., Article 166: Regulations issued by the Minister is based on the opinion of the DHMZ Director)
- Environmental Protection Act (OG No. 110/07)
- The Law on Physical Planning (Zoning) (OG No. 30/94, 68/98, 35/99, 32/02)
- Regulation on Environmental Impact Assessment (OG No. 64/08)
- By-Law on Environmental Information System (OG No. 74/99, 79/99)
- Environmental Protection Emergency Plan (OG No. 82/99, 86/99, 12/01, 14/01)
- Ordinance on Environmental Emission Inventory (OG No. 36/96)
- Law on Ratification of the United Nations Framework Convention on Climate Change (Rio de Janeiro 1992)
- Kyoto Protocol to the Convention on Climate Change (Kyoto 1999)
- Convention on Long-range Trans boundary Air Pollution (Geneva 1979)
- Protocol to the Convention on Long-range Trans boundary Air Pollution on Long Term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (Geneva, 1984)
- Protocol to the 1979 Convention on Long-range Tran boundary Air Pollution on Further Reduction of Sulphur Emissions (Oslo 1994)
- Protocol to the 1979 Convention on Long-range Tran boundary Air Pollution on Persistent Organic Pollutants (Aarhus 1998)
- Stockholm Convention on Persistent Organic Pollutants (Stockholm 2001)
- Law on Ratification of the United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa – Convention to Combat Desertification (Paris 1994)
- Cooperation Agreement with World meteorological Organization (WMO), International Civil Aviation Organization (ICAO), and European Meteorological Satellite Organization (EUMETSAT)
- Cooperation Agreement with European Centre for Medium Range Weather Forecasts (ECMWF), European Meteorological Networks (EUMETNET), and Economic Interest Grouping of the National Meteorological Services of the European Economic Area (ECOMET)
- Council Directive 90/313/EEC of 7 June 1990 on the freedom of access to information on the environment
- Commission Decision 2008/721/EC of 5 August 2008 setting up an advisory structure of Scientific Committees and experts in the field of consumer safety, public health and the environment and repealing Decision 2004/210/EC
- Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe
- Law on Water (OG No. 48/95)
- The Ordinance on Issuance of Water Management Documents (OG No. 28/96)
- By-law on Hazardous Substances in Water (OG No. 78/98)
- Regulation on Limit Values of Indices, Hazardous and Other Substances in Waste Water (OG No. 40/99, 6/01)



### 3.6 Greece



Greece, as part of the Mediterranean Basin, is projected to be among the most vulnerable countries due to the combined effect of high temperature increases and reduced precipitation, in areas already coping with water scarcity. Giannakopoulos *et al.* (2005)<sup>v</sup> state that in the Mediterranean region there was evidence of climate change during the last half of the twentieth century, with winter and summer showing evidence of warming in large. The Ministry of Environment, Energy and Climate Change (MEECC) is the main governmental body entrusted with the development and implementation of environmental policy in Greece<sup>vi</sup>. In particular, MEECC is the competent authority for coordinating respective actions and works towards both mitigation and adaptation to climate change as well as for the enhancement of mechanisms and institutions for environmental governance<sup>vii</sup>.

Climate change mitigation is one of the main targets identified in the Greek strategy for sustainable development launched by MEECC in 2002. The objective of the strategy is the development of a set of principles for the formulation of an action plan in line with international challenges, and in accordance with EU policy directions and adjusted to the specific national circumstances. Policies and measures, as well as all other issues and actions regarding mitigation are discussed within the framework of an inter-ministerial committee, comprising representatives from all competent Ministries. Final approval of policies and measures related to climate change mitigation rests with the Council of Ministers.

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<sup>v</sup> Giannakopoulos C, Bindi M, Moriondo M, LeSager P, Tin T (2005). Climate change impacts in the mediterranean resulting from a 2 °C global temperature rise. Rapport préparé pour le WWF. Observatoire national d'Athènes, Grèce.

<sup>vi</sup> The European Climate Adaptation Platform (CLIMATE-ADAPT) <http://climate-adapt.eea.europa.eu/countries/greece>

<sup>vii</sup> HELLENIC REPUBLIC. Ministry of environment, energy and climate change. 5<sup>th</sup> National Communication to the United Nations Framework Convention on Climate Change. January 2010.

Greece<sup>viii</sup> ratified the Kyoto Protocol in 2002 (Law 3017/2002) and adopted a National Programme (decision of the Council of Ministers DCM5/2003) for achieving its commitment of restricting the increase of GHG emissions to 25% over the time period 2008–2012, compared to base year emissions. By Law 3017/2002 the MEECC is designated as the governmental body responsible for the coordination, within its responsibilities, of all other competent ministries and possibly any other public and / or private entities involved, for:

1. the implementation of the provisions of the Kyoto Protocol and
2. the formulation and monitoring of the National Programme for achieving the national targets set under the Kyoto Protocol.

The process of setting up a *National Adaptation Strategy* is ongoing in Greece and its development is included in the main priorities of MEECC.

In particular, in most of the cases, the adaptation measures that are currently under implementation in Greece are part of a broader network of measures that applies to the specific areas of identified vulnerabilities. However, the MEECC has suggested that, in the context of the National Strategic Reference Framework for the period 2007-2013, the following projects shall be implemented:

- Study of the vulnerability of the Greek coastal areas & proposals of appropriate adaptation policies and measures.
- Study of the impacts of climate change per geographical prefecture.
- Elaboration of a National Strategy for the Adaptation to Climate Change.

Greece has developed and is taking part in the implementation of several ones on multi governance levels:

- o On a *regional level*, Greece, as a member of the Black Sea Economic Cooperation Organization (BSEC), is actively engaged in efforts to promote cooperation and exchange of best practises for the protection of the Black Sea marine and coastal environment. To this end, BSEC Member States have elaborated a general cooperation framework, the BSEC Action Plan for Cooperation in the Field of Environmental Protection, the main directions of which include preservation of the region's environment (pollution prevention and biodiversity conservation), as well as development of green technologies. Moreover, the Mediterranean Action Plan of UNEP, the first-ever plan adopted as a Regional Seas Programme under UNEP's umbrella, involves 21 countries bordering the Mediterranean Sea (as well as the EU), including the five North African Mediterranean Countries. Seven Protocols addressing specific aspects of Mediterranean environmental conservation complete the legal framework of the Barcelona Convention. Through MAP, the Contracting Parties to the Barcelona Convention and its Protocols are joining efforts to meet the challenges of protecting the marine and coastal environment while boosting regional and national plans to achieve sustainable development. Greece is very active within the UNEP/MAP - Barcelona Convention system, especially as UNEP/MAP Coordination Unit is based in Athens since 1981.
- o On a *national level*, the National Action Plan for Combating Desertification has been approved in 2001 (Common Ministerial Decision 996005/31719). The

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<sup>viii</sup>HELLENIC REPUBLIC. Ministry of environment, energy and climate change. 5<sup>th</sup> National Communication to the United Nations Framework Convention on Climate Change. January 2010.

implementation of the plan is co-ordinated by the National Committee to Combat Desertification; the Ministry of Rural Development and Food provides secretarial and technical support to the committee, which brings together relevant ministries, universities, research institutes and NGOs to formulate proposals for combating desertification, coordinate national, regional and local action plans, pursue co-operation with the EU and other international bodies on desertification programmes, promote research and raise public awareness. Deriving from the energy end-use efficiency and energy services directive 2006/32/EC, the National Action Plan for Energy Efficiency has been submitted to the EU. This plan constitutes a valuable supporting policy and tool for the restriction of GHG emissions, which illustrates the policies and measures that need to be implemented in order to fulfil the targets set by the directive, namely reduction of 9% of end-use energy consumption for the period 2008-2016 compared to the average of 2001-2005. The Greek Action plan is comprised of horizontal, inter-sectoral and measures focusing to the residential, tertiary (public and private), non-ETS industry and transport sector.

- On a *local level*, the European Commission commenced an ambitious initiative named “The Covenant of Mayors”, which gives the lead to Europe’s over 4000 pioneering cities to mitigate climate change through the implementation of intelligent local sustainable energy policies that create stable local jobs, increase citizens’ quality of life and address crucial social issues. The Covenant of Mayors constitutes a formal commitment to go beyond the EU objectives in terms of CO<sub>2</sub> reduction, through the implementation of sustainable energy action plans with concrete measures. As concerns Greece, till now 19 Greek cities (Aigaleo, Ios, Kea, Korthi, Lamia, Likovrisi, Lipsi, Milos, Moudros, Nisyros, Oia, Patras, Poseidonia, Ptolemaida, Serres, Skyros, Sykies, Thermi, Trikala) and a supporting network of cities (Network of Aegean Islands for Sustainability, DAFNI) have joined the Covenant.

### **3.6.1 Attica Region**

Attica Region, according to National Law 3852/2010, is responsible for the implementation of strategic plans and for the particularisation of the guidelines of environmental policies at a regional level, as well as for investigating environmental degradation and pollution and for enforcing fines to polluters.

Taking into consideration that almost half of the country’s population lives in Attica Region and a major part of the Greek industrial sector is also in Attica, it is of high importance to collect relevant information about environmental quality and to compile action plans to implement projects and studies for reducing environmental impacts at a local level.

Therefore, it is of primary importance to adapt policies and to employ supporting tools for the restriction of GHG emissions as well as to devise policies in order to limit the impact of human activity’s to the natural environment.

### 3.7 Hungary



The basis of the normative framework for climate change mitigation and adaptation in Hungary is the **National Climate Change Strategy (2008-2025)**, prepared in the framework for the implementation of the UN Framework Convention on Climate Change (UNFCCC), based on the 2007 Climate Change Act. The document determines the major directions of action for the long term climate change policy (both mitigation and adaptation), namely:

- measures to comply with the EU and international requirements on reduction of greenhouse gas emissions (mitigation);
- key adaptation actions;
- raising awareness about climate change.

The first review of the strategy is currently being developed. The objectives of the document shall be implemented by **National Climate Change Programmes**, prepared on a biannual basis (currently for 2013-2014).

The National Climate Change Strategy is also adjusted to the **National Sustainable Development Strategy (2007-2025/2050)** adopted by the Government by Gov. Decree No. 1054/2007 (VII. 9.), which, in a separate chapter about climate change, emphasises the need for mitigation measures and coordination between sectoral policies.

The review of the NSDS was assigned to the National Council for Sustainable Development, who prepared the **National Framework Strategy on Sustainable Development (2012-2024)**, adopted by the government in March 2013. The aim of the Framework Strategy is to define strategic long term objectives, to be applied horizontally in all strategic planning processes. The strategy will be reviewed every four years.

The Third National Environmental Action Programme (2009-2014) also includes a thematic (sub)programme dedicated to the problems and tasks related to climate change. It specifically deals with both mitigation and adaptation issues.

Furthermore, several other national programmes and plans underpin the above strategies, including the **New Széchenyi Plan** (NSRF for 2011-2013) and the **National Reform Programme** under the Europe 2020 Strategy.

Local level actions are supported and promoted by the **Hungarian Alliance of Climate-Friendly Cities** initiated by the Institute of Sociology of the Hungarian Academy of Sciences. Participating local authorities prepare their own local climate change strategies with guidance and tools provided by the Institute and different NGOs. The **Covenant of Mayors** also counts 17 Hungarian signatories who are in the process of developing their local Sustainable Energy Action Plans and introducing the related measures.

### **3.7.1 Veszprém municipality**

The issue of climate change is covered by the municipality's Energy strategy 2010-2025, which aims to decrease GHG emissions by 25% and includes a climate change strategy chapter.

### **3.7.2 Municipality of 13th District of Budapest**

The district has its own Climate Change strategy for 2011-2020, but is also regulated by the Environmental Programme 2011-2016 of the city of Budapest, which contains a separate chapter on climate change mitigation and adaptation actions. In addition, the city of Budapest has also prepared a Sustainable Energy Action Plan for 2009-2020, with actions to support climate change mitigation.

### 3.8 Italy



Since the signing of the United Nations Framework Convention on Climate Change –UNFCCC, in 1992, Italy has demonstrated its sensitivity to environmental issues related to the increase of global temperature, and its engagement in facing climate change by implementing policies and measures to reduce greenhouse gas emissions.

The first “National programme for the containment of carbon dioxide emissions” was approved in 1994 with the aim to stabilize CO<sub>2</sub> emissions by 2000 at 1990 level. Afterwards, in 1997, Italy signed the Kyoto Protocol, committing to reduce its greenhouse gas emissions by 6.5% below the base-year levels (1990) over the first commitment period, 2008-2012<sup>1</sup>. To comply with its obligation Italy set up a national climate change strategy<sup>1</sup>, identifying, in the framework of the Kyoto Protocol Italian ratification Law (L. 120/2002 and CIPE<sup>ix</sup> deliberation 123/2002), policies and measures aimed at:

- increasing the energy efficiency of the national economic system and fostering the use of renewable energy sources,
- increasing carbon dioxide removals deriving from land use, land-use changes and forestry, as established under the Kyoto Protocol,
- implementing the Clean Development and the Joint Implementation mechanisms established under the Kyoto Protocol,
- fostering research and development activities in order to promote hydrogen as a main fuel in energy systems and in the transport sector and to promote the construction of biomass plants, solar thermal power plants, wind and photovoltaic power plants, waste and biogas fuelled power plants.

A number of sectoral and cross-sectoral policies and measures with a direct or indirect effect on the reduction of greenhouse gas emissions have been mainly focused on the mitigation target.

The most relevant cross sectoral initiatives are represented by:

- The European Union Emissions Trading Scheme (EU-ETS) implementation,

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<sup>ix</sup> Inter Ministerial Committee for Economic Planning

- The White Certificates system, aimed at promoting energy efficiency,
- The Green Certificates system, that represents the major policy mechanism through which the Government supports the development of new renewable capacity, introducing the obligation on electricity producers to feed the grid with a minimum share of electricity produced from renewable energy sources,
- Feed-in Tariffs for promoting photovoltaic electricity, differentiated by the nominal power and the type of the installation,
- Incentive schemes to support cogeneration, rewarding both the production of heat and the production of electricity. All cogeneration plants benefit from the White Certificate system while RES cogeneration plants are additionally entitled to receive Green Certificates to reward the green electricity produced.

Being the committing period over, Italy has to respond to its duty by the 30<sup>th</sup> of April 2014, when the GHG inventory for 2012 will be transmitted to the Compliance Committee (Decision 24/CP.7) for the audit<sup>2</sup>. Even though the estimates are optimistic, the Foundation for the Sustainable Development has recently declared that a 7%<sup>3</sup> GHG reduction was reached in the commitment period.

In this framework Italy is drafting a new national strategy for reducing GHG, in order to strength the Kyoto commitments and pave the way towards the new European targets.

In particular the new National Plan to reduce Greenhouse Gases (CIPE proposal 8-3-2013)<sup>4</sup> updating the previous one (L. 120/2002), establishes a new roadmap to fulfil the Kyoto commitments and aims to prepare a pathway towards the decarbonisation economy, in compliance with the “Europe 2020” policy and the “Energy roadmap 2050”. In particular, Italy commits itself to follow the decarbonisation process defined by the European Commission: a 25% GHG reduction by 2020 respect to 1990 levels, 40% by 2030, 60% by 2040, and 80% by 2050<sup>5</sup>.

The identified measures include the establishment of a catalogue of technologies, systems and products for decarbonising the Italian economy, the introduction of a carbon tax (to boost resources for the Kyoto’s Fund), improvement of energy efficiency, distributed generation and the development of smart grids for 'smart cities'. Moreover, the plan promotes eco-buildings and the extension till 2020 of the 55% tax credit for sustaining investments for a low-carbon economy and, finally, the management of forests, representing both a sink for CO<sub>2</sub> and as source of biomass and biofuels.

Urban climate action in Italy has occurred in a policy environment where policies and measures developed by the Central Government have focused mainly on energy strategies, i.e. affecting mitigation<sup>6</sup>. Only recently, more emphasis has been given to adaptation issues trying to overcome the lack of a common national framework for all the adaptation measures that have been implemented so far within current policies on environmental protection, natural hazard prevention, sustainable management of natural resources and health protection through actions of monitoring, surveillance of early impacts and early warning systems. These measures have been mainly aimed at “reducing vulnerability to current climate variability and extreme weather conditions (reactive adaptation), rather than preparing to the potential adverse effects of the projected climate change (proactive adaptation)”<sup>7</sup>. Therefore adaptation measures have been mostly developed in the fields of human health and coastal protection, agriculture, desertification and water resources protection.

In order to guarantee a punctual delivery of the necessary adaptation measures as well as their effectiveness and coherence with respect to different sectors and multi-governance levels, a strategic, comprehensive approach is expected. To this end, in April 2012 the Italian Ministry for the Environment, Land and Sea (IMELS) started the process to adopt the National Adaptation Strategy to Climate Change (NAS), in compliance with the EU White Paper “Adapting to climate change: Towards a European framework for action” (2009). The Italian NAS, whose completion is expected within the end of 2013, is organised in 4 actions, some of them have already been completed:

- Action 1 – Analysis and synthesis of scientific knowledge on climate change, impacts and sectoral adaptation on the national territory,
- Action 2 - Individuation and application of European best practices for the governance and coordination of adapting measures,
- Action 3 –Individuation and involvement of stakeholders,
- Action 4 – Definition of adapting actions and measures for each economic sector

In November 2012, a document drafting the national “Strategies for adapting to climate change, sustainable management and territorial security”<sup>8</sup>, was submitted to CIPE (Interministerial Committee for Economic Planning) by IMELS. According to this resolution, the NAS will be implemented on the basis of several preparatory studies and sectoral strategies (Action 1). In particular, preliminary to the strategies is the “Report on the status of scientific knowledge on impacts, vulnerability and adaptation to climate change” prepared by IMELS that will be updated each 4 years. On the basis of this report, the Hydrogeological Plan (PAI- Piano di Assetto Idrogeologico) will be updated by the end of this year by the Authority of catchment basins (Autorità di bacino dei distretti idrografici).

Moreover, the National Strategy for Biodiversity, elaborated in 2010, which includes among the strategic objectives the adoption of measures for adapting and increasing the resilience of natural and semi-natural ecosystems to climate change” has to be taken into account in the process of NAS definition.

Moreover, the CIPE resolution defines the main priorities of intervention, that have to be taken into account in the elaboration of the NAS, in particular:

- Limitation of urbanization in high vulnerability areas, in particular those individuated in the PAI,
- Land use containment and control,
- Maintenance of watercourse and waste water,
- Recovery of abandoned or degraded land by focusing on traditional and quality crops,
- Cleaning up forests using timber harvest as biomass to produce clean energy,
- Reducing the coasts vulnerability, increasing coastal resilience and protecting infrastructures and coastal environments.

In order to carry out the national adaptation strategy, each year, starting from 2014, an annual plan will be implemented defining interventions for coping with climate change adaptation, making safe national areas, identified by the PAI as high risk areas.

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### **3.8.1 Autonomous Province of Trento**

Climate change became a topic issue of public domain after the publication of the IPCC Fourth Assessment *Report*, "Climate Change 2007", containing the evidence of the global warming and the anthropogenic role while the climatic projections indicates the Alps among the areas of the world where the consequences of climate change will be most strongly.

In 2008 the Province of Trento started a process to study and analyse the evidences on climate change and the results, in order to identify the most vulnerable sectors such as the water resources management, tourism, energy and industry, environment and ecosystems, agriculture. Depending on the different possible future scenarios, several actions were defined concerning both adaptation to climate change and mitigation of greenhouse gas emissions.

#### **The strategy of the Autonomous Province of Trento**

The general strategy adopted by the Province of Trento concerns a complex series of steps which can be summarized in: laws and organization, monitoring and research, mitigation and adaptation measures, information and awareness.

This strategy needs to be harmonized with European Union directives, national guidelines and cooperation initiatives in the Alpine region (Alpine Convention of the Alps, the community of ARGE ALP and the EUREGIO) among neighboring countries which have similar

physical and geographic characteristics and therefore similar issues to face in order to take more incisive actions.

### **Law and organization**

An important first step was the introduction of a "Fund for Climate Change" (Provincial Law: 21 December 2007, n. 23) to finance different activities such as: studies and research, campaigns and environmental education, events, conferences, meetings and training, in the climate change field.

The Province adopted a special law named "The Trentino region for climate protection" (Provincial Law: March 9, 2010, n. 5), which provides the definition of strategies and actions to face climate change adopting appropriate measures for adaptation and mitigation.

Two important organizational tools were introduced: the Trentino Climate Observatory, overseeing the technical and scientific coordination among all the authorities involved in research activities and meteorological monitoring, and the Trentino Panel on Climate Change, a working group creating in the provincial administration to identify the appropriate measures of mitigation and adaptation.

The strategies related to climate change are placed in a broader planning that is expressed in the "Pact for Sustainable Development 2020 and beyond (Pa.S.So.)", recently approved by the provincial government in order to provide directions and commitments of long-term sustainable strategies.

### **Monitoring and research**

There are many networks in Trentino monitoring meteorological and hydrological variables, as well as snow, glaciers and permafrost. There are also different measures of indirect parameters and indices associated with climate change monitoring terrestrial ecosystems (wildlife, forests and vegetation) and water (lakes and rivers) but also socio-economic sectors (hydropower production, water management, tourism, transport).

Data from these monitoring networks are the basis of each study on the climate, climate changes and expected impacts.

### **Mitigation actions**

A new Environmental Energy Plan for the period 2013-2020 is currently in discussion and approval with the aim to improve the policies to reduce energy consumption and increase the use of renewable energy.

The new Plan takes into account considerable possibility of growth in relation of renewable energy in traditional sector such as hydroelectric power and use of biomass in the civil sector, but also in other sectors, such as solar thermal and photovoltaics and heat pumps.

The Plan aims to reduce consumption in the civil sector and in the new building and to carry on decreasing of CO<sub>2</sub> emissions by actions in home-buildings.

### **Adaptation actions**

About the definition of an Adaptation Plan are ongoing studies and researches to better quantify the expected impacts on water cycle, glaciers, rainfall patterns, variation of extreme events and hydrological risks.

The sectors most affected and exposed are: the management of water resources; energy production (hydro, solar, wind); the management of forests, protected areas and ecosystem services; agricultural production; tourism; transport; hydrogeological risk management and

civil protection. All fields that require common and shared strategies with national and European level.

### **Information and awareness**

The possibility to make effective the undertaken actions for facing climate change impacts needs the participation and involvement of citizens because they can recognize the responsibilities of the anthropogenic role and therefore they may put into practice the necessary actions, both individually and collectively.

There are many initiatives in Trentino in this direction: programs and projects for environmental sustainability, meetings and campaign as well as the new web site, [www.climatrentino.it](http://www.climatrentino.it), entirely dedicated to the issues of climate and climate change with data and reports at regional, national and international level.

### **3.8.2 Basilicata region**

By administrative act on May 2013 the Regional Council of Basilicata approved the document entitled "Guidelines of the forestry sector for the decade 2013 to 2022<sup>1</sup>" that describes the development strategy of Basilicata region in the field of forestry, protection of the territory and biodiversity. In particular, the regional forestry strategy for the next decade is based on four broad objectives that coincide with the four priority objectives of the National Strategy on Forestry Sector – PQSF<sup>1</sup> (A, B, C, D) from which are derived the strategic objectives and operational actions related to the needs of the sector in Basilicata.

- A - DEVELOPING A FORESTRY EFFICIENT AND INNOVATIVE
- B - PROTECT THE LAND AND THE ENVIRONMENT
- C - WARRANT THE PERFORMANCE OF PUBLIC INTEREST AND SOCIAL
- D - PROMOTE COORDINATION AND COMMUNICATION

SPECIFIC OBJECTIVE B5 - CONTRIBUTE TO THE MITIGATION OF CLIMATE CHANGE, IMPROVING THE CONTRIBUTION OF THE FOREST CARBON CYCLE AND ENHANCING THE ADJUSTMENTS TO THE EFFECTS

ACTION 1: Use of surfaces suitable for application of articles 3.3 and 3.4 of the Kyoto Protocol on voluntary basis.

The Basilicata Region in order to prevent and reduce the climate change and obtain the harmful effects to human health and the environment should promote interventions of technical prowess to achieve the objectives established by activities under articles 3.3 and 3.4 of the Kyoto Protocol about to the containment of CO<sub>2</sub> as prescribed by the IPCC.

#### **Step 1**

Creating specific implementing regulation on the opportunities for interventions compensation provided for by Articles forest. 3.3 and 3.4 of the Kyoto Protocol on the basis of voluntary agreements.

#### **Step 2**

Provide for afforestation, reforestation, revegetation, revegetation widespread urban areas reliquate or landlocked and periurban areas in a state of decay and / or neglect, on a regional scale, relative to the containment of CO<sub>2</sub> and in the manner prescribed by the IPCC , the interventions themselves should also be made as a priority within the program agreements with local authorities and private entities, through management plans compatible with the existing planning instruments, and through implementing regulations properly prepared.

#### Step 3

Once identified and planned interventions will be possible to carry out the monitoring of carbon deposits agro-forestry and vegetation of Basilicata Region through a special register of carbon. The compensatory measures should be drawn up in accordance with the international standards in the field of carbon sinks under the Kyoto Protocol, for the recognition of credits by the appropriate certifying entities.

#### Step 4

Institution Register of the opportunity of compensation agroforestry

#### Indicators

- Hectares of forest area affected by the actions of clearing forest
- Tons of carbon per hectare stowed.

#### Recipients

Region, delegated agencies, councils, associations, private companies.

As concern energy and environment, the Basilicata region adopted in 2010 the Regional Energy and Environmental Plan<sup>2</sup> that defines its energy and environmental strategy until 2020.

The program is based on four main macro-objectives:

- Reducing fuel consumption and the energy bills;
- Increasing electricity production from renewable sources;
- Increasing thermal energy production from renewable sources;
- Creating an energy district in the Agri Valley.

Within each macro-objective, sub-objectives and measures to achieve them have been identified.

The achievement of those goals will have positive effects also in reducing CO<sub>2</sub> emissions, it estimated a reduction of about 40% below 1990 level by 2020 considering a major exploitation of renewable enegy in electricity production and a strong intervention of energy saving in the public and private economic sectors.

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### 3.8.3 Puglia region

Local government planning needs to take account of factors at a global scale (at the level of the Mediterranean basin as a whole), as well as factors at a regional and local scale, which are more closely linked to specific geomorphological characteristics.

In Puglia, the study “The vulnerability to climate change of Convergence Objective Regions” conducted by Ministry of the Environment Land and Sea<sup>1</sup>, shows that the main vulnerabilities to climate change of the Puglia region are mostly associated with water (drought, desertification, fires, flood, hydrogeological risks) and coastal areas (coastal erosion and sea level rise).

Puglia Region has a multidimensional approach to climate change and works at local level as well as in the Euro-Mediterranean setting. The main areas of study funded through the PO FESR 2007-2013<sup>2</sup> are:

- ✦ Knowledge of the phenomenon through historical data analysis of the main climatic variables;
- ✦ Knowledge of climate change effects on human and natural communities;
- ✦ Strategic adaptation actions (soil conservation, requalification of the water network and other infrastructures, etc).

In the following are listed the main plans, which have specific connection with the report issues, adopted, approved or under revision by Puglia Region.

- River Basin District Management Plan for the Southern Appennino District, adopted in 2009;
- Water Conservation Plan, approved in 2009;
- Regional Transport Plan, approved in 2002, and Implementation Plan 2009-2013;
- Sustainable Energy Action Plan, approved in 2013;
- Regional Plan for the Air Quality, 2008;
- Forest Regional Management Plan: guidelines for the forest management programming 2005-2007
- Rural Development Plan 2007-2013, approved in 2010;
- Waste Management Plan, approved in 2001 and adjourned in 2009;
- Regional Law 23/2006: Regional rules to promote the ecological public purchases and to introduce the environmental aspects in the procedures to purchase goods and services of the public administrations;
- Flood Risk Management Plan for the Southern Appennino former District, in progress;
- Hydrogeological Setting Plans, 2005;
- Regional Conservation Plan for the biodiversity, 2009;
- Regional Coastal Plan, 2011;
- Regional Plan of Surveillance and Response to the health care effects of anomalous heat waves, 2007;
- Regional Plan for the Health Care.

#### **Direct involvement of the Covenant of Mayors**

Puglia is member of this initiative and has these objectives:

- Fund local programmes to fight Climate Changes
- Specific verifiable water targets for 2020: 20% increase in water-saving in all sectors of use; a 20% increase in the number of water courses being renaturalised; a 20% increase in the volume of water reused and/or recycled in farming and industry.

**References:**

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### 3.9 Montenegro



Montenegro<sup>1</sup> ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 2006, becoming a member of the Convention as a Non-Annex Party on 27 January 2007. The Kyoto Protocol was ratified on 27 March 2007 (the Ratification Law was published in the Official Gazette of the Republic Montenegro 17/07), so that Montenegro became a non-Annex I party on 2 September 2007. The Kyoto Protocol for the developing countries, including Montenegro, did not foresee any obligations of reducing GHG emissions by 2012.

Ratifying the UNFCCC and the Kyoto Protocol, Montenegro joined the countries that share concerns and play an active role in international efforts to identify the solutions to the problems of climate change. The Council for Clean Development Mechanism (performing the function of the Designated National Authority) was established on 5 February 2008.

Considering that the EU accession is a national priority, approximation of national legislation to the parts of *acquis communautaire* on the environment and climate change represents a process whereby the national legal framework is strongly and increasingly shaped.

In the framework of the Initial National Communication of Montenegro to UNFCCC the inventory of greenhouse gases and a detailed analysis of the emissions was prepared, considering 1990 as the baseline year. The comparison of the total CO<sub>2</sub> equivalent emissions (including the sinks) per capita (2003 census) - 7.2 t CO<sub>2eq</sub>/capita – in Montenegro respect to developed European countries places Montenegro among the countries with low emissions.

The potential for reducing GHG emissions was assessed in the Communication. In particular, for each sector separately were identified relevant measures, interventions, projects and practices that are likely to change in the key sectors during the period 2010-2025: energy, industrial processes, agriculture, land use change, forestry and waste.

The lack of sectoral development plans addressing the problems of climate change, relevant data, as well as other relevant national studies made difficult to assess the GHG emissions. This is particularly pronounced in the sectors of agriculture and forestry, which caused the inability to quantify the measures for reducing GHG emissions in those sectors.

Although the entire territory of Montenegro, in the last twenty years was directly or indirectly affected by strong climatic anomalies mainly relative to water resources, no mechanisms determining self-adaptation have been identified. Nowadays, there are no

national strategies or adaptation measures and estimates of the expected mechanisms of self-adaptation<sup>1</sup>.

## References

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### 3.10 Romania



This map is based on the map published on the AIT Transnational Programme website.

In Romania<sup>1</sup>, the central competencies within the field of climate change adaptation are assigned to the Ministry of Environment and Climate Change through the Directorate for Climate Change and Sustainable Development.

The Government policy on climate change is assisted by the National Commission on Climate Change set up as an advisory body in 1996 in order to provide equal and consistent implementation of the UNFCCC and the Kyoto Protocol throughout the country. The National Commission on Climate Change comprises representatives from line ministries and one NGO with competencies in climate change. Some of its tasks are to:

- periodically review the progress of Romania's Climate Change Strategy,
- consider the opportunity for new or updated policies and measures under the National Action Plan on Climate Change,
- identify financial resources for actions and targets on climate change, and
- recommend project developments under the Kyoto Protocol.

In 1992 Romania signed the United Nations Framework Convention on Climate Change (UNFCCC), ratified by Law no. 24/1994, pledging to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent anthropogenic interference with the climate system. Romania also signed the Kyoto Protocol in 1999 being the first Part located on Annex I of the UNFCCC which ratified it by the Law no. 3/2001. Commitment value for mitigation of greenhouse gases emissions assumed by Romania for the period 2008 - 2012 was 8%, considering the level of emissions in 1989 as a benchmark.

Since 2002, Romania submit annually to UNFCCC Secretariat, the national inventory of emissions of greenhouse gases, elaborated according to IPCC methodology, using common reporting format for all countries (CRF Reporter).

In the framework of the flexible and voluntary mechanisms implemented in the Kyoto Protocol for international cooperation (Joint Implementation (JI), Clean Development Mechanism (CDM) and Marketing), Romania has been involved in investment projects of "Joint Implementation". In particular, Romania is working with states to achieve technology transfer, increased energy efficiency of objectives where the investments have been made and improve of environment. Thus, Romania signed Memorandums of Understanding with

Switzerland, Netherlands, Norway, Denmark, Austria, Sweden and France, Italy, Finland, World Bank, in the frame of Prototype Carbon Fund, the legal basis for these projects.

In Romania, the Directive 2003/87/EC establishing a scheme for greenhouse gases emissions trading, has been implemented since 2007 (EU accession). This is a tool created to support member states to promote reducing emissions of greenhouse gases in an economically efficient way in order to fulfill the commitments under the Kyoto Protocol. Operation scheme is based on limiting - trading the greenhouse gases emissions certificates allocated to operators holding a plant in which the activities are covered by the Directive, to the extent that they comply with the limits for CO<sub>2</sub> emissions set out in the National Allocation Plan (NAP).

In 2007 following the European approach on adaptation, a Working Group on adaptation to climate change was formally established, gathering representatives from all key sectors: ministries, research institutes, NGOs (Ministerial Order No. 82/2007 on establishing the nominal composition of the WG). In 2010-2011 (during the preparation of the component on adaptation to climate change from future National Strategy on Climate Change 2013-2020), this working group was expanded by recruiting new institutions and professionals with responsibilities in this area in order to effectively contribute to national efforts on climate change policy.

The first National Climate Change Strategy, drawn up in 2005 and approved by the Governmental Decision (no 645/2005) was related to the 2005-2007 period. In this Strategy, climate change adaptation issues were highlighted separately in the chapter "Impact, Vulnerability and Climate Change Adaptation", which briefly detailed the effects of climate change adaptation on the following sectors: agriculture, forestry, water management, and human settlements.

Moreover, in 2008, in response to the EU Green Paper "Adapting to climate change in Europe - options for EU action", the Ministry of Environment and Forests developed the Guide on the adaptation to the climate change effects approved by Ministerial Order (no 1170/2008). This guide provides recommendations to reduce the risk of adverse effects of climate change in 12 key sectors as follows: Agriculture, Biodiversity, Water resources, Forests, Infrastructure, Construction and Urban Planning, Transport, Tourism, Energy, Industry, Health, Recreational Activities, Insurance.

From 2010 onwards the Annual Reports drawn up by the National Environmental Protection Agency include separate chapters for climate change and its impact on human and natural systems and adaptation related issues.

Currently, Romania is finalizing the National Climate Change Strategy with time horizon on medium and long term (2013-2020) in which adaptation will be an important part of the document. The strategy addresses two main components: the reduction in the concentration of greenhouse gases (Mitigation) and the adaptation to climate change (Adaptation). At national level, once the Adaptation component was launched, the interministerial working group developed a large consultative process with central and local stakeholders in order to draw up an efficient adaptation component and to reduce the adverse inevitable effects of climate change and to meet the EU objective on adaptation. On the Adaptation component were identified 13 sectors vulnerable to climate change: Food, Agriculture and Fisheries, Tourism, Public Health, Construction and Infrastructure, Transportation, Water Resources, Forestry, Energy, Biodiversity, Insurance, Recreation, Education. In this context, the integration of the adaptation in the sectorial strategies will help to have a comprehensive approach and select appropriate measures for the direct and

indirect effects of climate change. In order to develop a realistic adaptation strategy we have to adjust the existing sectorial strategies on climate change basis.

In the period 2013-2015, the Ministry of Environment and Climate Change (MECC) will work together with the experts from World Bank to achieve the National Objectives and EU Requirements in the Field of Climate Change. The list of top six priority sectors refers to agriculture, water resources, forests, biodiversity, energy, transport and the main objectives of the funding application for the Climate Change RAS (Reimbursable Advisory Service) will include the most important climate change effects necessary to be managed by each sector. As such, the members of the working group approved by the MECC will provide the most important response measures, including crosscutting measures, for each of these priority sectors.

In the frame of The Clearinghouse Mechanism (CLIMATE-ADAPT: European Climate Adaptation Platform), each Member State has an individual section. Romanian page can be found at the following link: <http://climate-adapt.eea.europa.eu/countries/romania> .

#### **At local level:**

According to the provision of the National Strategy on Climate Change - Adaptation Component, the strategy has to be assumed and continuously improved at the local government level, through relevant, specific measures for the geo-political conditions, economical context and local public needs. At the same time, local authorities will develop action plans on climate change.

The municipality of Sfantu Gheorghe, the capital city of Covasna County in collaboration with the Environmental Protection Agency of Covasna initiated the elaboration of the "Adaptation to climate change strategy for Sfantu Gheorghe City" in the frame of the EU Cities Adapt project. The project is carried out for DG CLIMATE Action. More information about the project can be found on the webpage: <http://eucities-adapt.eu/cms/>.

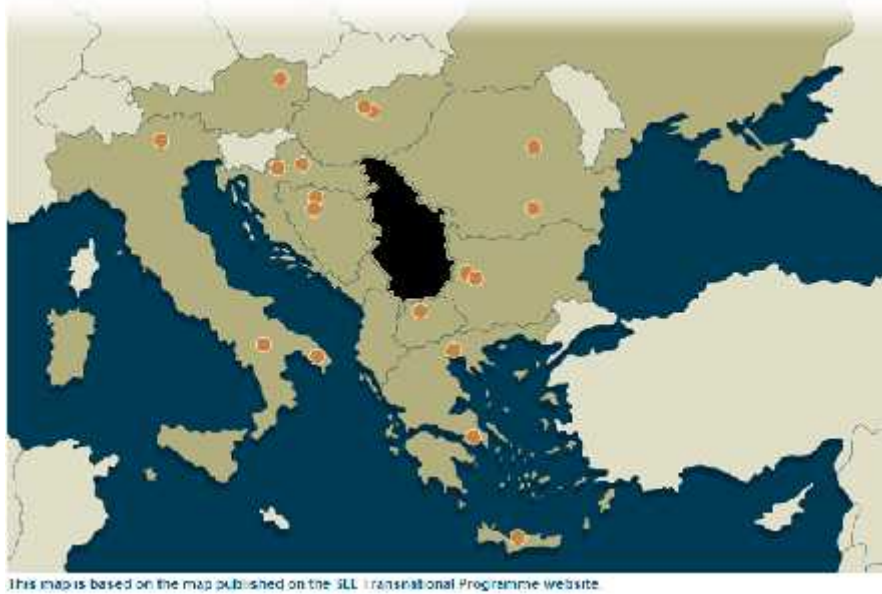
The Romanian Municipalities Association initiated a consultative process through "The Romanian Municipalities Association Commitment for Climate Change Effects Prevention", which has so far been signed by 35 out of 109 municipalities. One aspect of this commitment is related to the assessment of climate change risk and implications for public services and local communities and their capacity to adapt to climate change.

On 30<sup>th</sup> July 2009, the Romanian Municipalities Association signed an agreement in order to become a partner organization in implementing the Covenant of Mayors in Romania. Currently 30 of the municipalities- part of the Romanian Municipalities Association have so far signed this Convention, together with another 1200 local authorities.

#### **References**

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

### 3.11 Serbia



Since the ratification and entry into force of the UN Framework Climate Change Convention (2001), considerable efforts have been made in establishing legislation and an institutional and policy framework with the goal of fulfilling the requirements of the Convention. The major part of the initiatives and specific activities were launched only by institutions in charge of environmental issues. Therefore, neither real progress was made nor significant positive results achieved in this period. In this context, it is worth mentioning that the first set of laws in the field of environmental protection, directly related to combating climate change, was adopted in 2004.

The climate change problem has only been recognized in the past few years as a multi-sectoral problem that needs to be included in sector strategies and national development strategies in general.

This was confirmed by the ratification and enforcement of the Kyoto Protocol in 2008. The institutional and legislative framework for the implementation of the Clean Development Mechanism (CDM) was established directly after entry into force of the Kyoto Protocol. In 2010, the Government adopted the National Strategy of Inclusion of the Republic of Serbia in the Clean Development Mechanism in the Sectors of Agriculture, Forestry and Waste Management. With the view of dissipating information about and promotion of CDM projects, a website of DNA (designated national authority) was established and a number of trainings and workshops were organized for a wide range of stakeholders.

Nevertheless, due to the lack of awareness and knowledge, the Republic of Serbia does not have any registered CDM projects yet.

Considerable progress in the context of combating climate change was brought about by the beginning of the process of EU accession and the harmonization of national legislation with that of the EU. This is due to the fact that main principles of the relevant EU legislation are actually based on the principle of combating climate change. In response to the goals and preconditions of European partnership, but also recognizing the necessity of sustainable

development in the process of economic recovery, over the last couple of years, climate change issues have been included to a great extent in sectoral and development strategies.

A certain number of newly adopted, strategic documents, such as the Sustainable Development Strategy (adopted in 2008) and the National Environmental Protection Programme (2010), treat the climate change problem as being very important.

The Sustainable Development Strategy sees climate change as a top environmental risk factor. One of main goals in the environment sector is to enable existing institutions to actively implement climate protection policies and to meet the obligations of international agreements (UNFCCC, Kyoto Protocol, etc.), as well as to produce an Action Plan for the adaptation of economic sectors to climate change. A number of priority actions contributing to climate change mitigation and adaptation have also been defined in other sectors.

In the National Environmental Protection Programme, priority was given to the activities of climate change mitigation. Simultaneously, the importance and the need to conduct activities of mitigation to modified climate conditions were also outlined.

Sectoral strategic documents, such as the Strategy of Energy Development by 2015, the Strategy of Forestry Development and the Strategy of Scientific and Technological Development, recognize the importance of conducting activities of mitigation and adaptation in the context of the economic development of these sectors.

Increasing energy efficiency and the use of renewable energy resources by 2015 are two from five main priorities in the Serbian Energy Sector Strategy Development.

The Forestry Development Strategy includes the UNFCCC among the most important international obligations within the sector. The need for a constant increase in the forest capacity level is emphasized as an objective to more efficient climate change mitigation.

In the Serbian Strategy for Scientific and Technological Development, environment protection and climate change is one of the seven priority areas to receive funding in the period 2011–2015.

The National Strategy for Biodiversity and the Action Plan affirm the importance of developing a national strategy and mechanisms in order to understand, plan and minimise possible effects of climate change on biodiversity.

Several laws in some sectors (energy, waste, forestry) include measures for climate change mitigation.

In spite of considerable advancement and improvement, the level of environmental investment is still low, especially bearing in mind the state budget.

In the last couple of years, both the public and private sector have recognized the importance of the problem of environmental protection, especially the issue of climate change. Nevertheless, the level of investment from these two sectors is still unsatisfactory.

The major part of the activities hitherto implemented in the area of combating climate change, including the production of the INC, was enabled by fund raising and technical assistance through bilateral cooperation, mainly with EU countries and Japan, UN funds, especially GEF.

A number of trainings and workshops were conducted within the framework of this cooperation, intended for representatives of governmental and scientific institutions, local communities, the commercial sector and the media.

Nevertheless, the level of integration of climate change into sectoral and general development strategies, the level of knowledge, institutional and individual capacities, and the status of available technologies are still far from below that necessary for an effective and fast response to this problem.

For these reasons, strengthening cooperation at both bilateral and multilateral levels, as well as continuing cooperation with GEF in drafting the Second National Communication among the other, is fundamental for the effective national implementation of the Convention.

### **References**

1. The Initial National Communication of the Republic of Serbia under the United Nations Framework Convention on Climate Change UNFCCC.

### **3.12 The Former Yugoslav Republic of Macedonia**



The Former Yugoslav Republic of Macedonia ratified the UN Framework Convention on Climate Change (UNFCCC) on 4 December 1997, and the Kyoto Protocol in July 2004 as a party not included in Annex I. All the activities related to ratification of the Convention and Protocol including activities on raising public awareness are coordinated by the Ministry of Environment and Physical Planning – MOEPP<sup>1</sup>.

In order to present the Macedonian situation in the Second National Communication, in compliance with UNFCCC adherence, a national greenhouse gas (GHG) inventory was prepared for the years 1999-2002 (with 2000 as the base year), covering the following sectors: energy, industrial processes, agriculture, land-use change and forestry, waste, and, for the first time, solvents and other product use.

In the light of EU accession, the more sophisticated GHG inventory will contribute towards providing a background for the establishment of a national registry system, which will be a country requirement.

However, a set of institutional and legislative measures needs to be undertaken in order to further develop the national capacity for archiving and updating the GHG inventory.

At the strategic level, the National Strategy for Sustainable Development (NSSD) and the Second National Environmental Action Plan (NEAP) represent the environmental policy framework.

The National Strategy for Sustainable Development (NSSD) is directed to the fulfillment of the obligations made by the Former Yugoslav Republic of Macedonia internationally and to the EU but its primary purpose is to provide an effective framework for sustainable development that, via reviews of existing policies and sector strategies, offers practical guidelines for service delivery in the public and private sectors and serves to encourage incremental domestic and external investments.

The strategy identifies several key driving priorities for making the Former Yugoslav Republic of Macedonia sustainable: EU membership, policy, and legal framework (as the backbone of any strategy development and implementation), administrative and enforcement capacity for environmental improvement, structural changes in energy mixing and pricing, comprehensive strategic work and plans in rural development. The Former Yugoslav

Republic of Macedonia identifies climate change along with energy as a key challenge in line with the European strategy for sustainable development.

The more important strategic document for the environment in the Former Yugoslav Republic of Macedonia is represented by the Second National Environmental Action Plan (NEAP 2). It defines the environmental problems and the policy in the respective area through establishing measures, directions, and activities for its promotion over the next six years; identifies the instruments and mechanisms for its implementation, financing in the environment and the role of the international community on this issue, as well as the monitoring and updating of NEAP 2 itself.

The mitigation analysis was finalized with the National Action Plan for Climate Change Mitigation which assess the climate change mitigation potential of the country following the projected developmental lines of the national economy. In particular, it incorporates measures/practices/projects/interventions in each of the sectors that contribute to reduction of GHG emissions, in particular electricity, heating, industry, transport, waste and agriculture, which will be undertaken during the period 2008-2025.

The mitigation study carried out in the Action Plan is only indicative concerning the country's mitigation potential, and should be permanently revised taking into account all the relevant occurrences in the national economy, however, the analysis was constrained by the lack of sectoral developmental plans, relevant data (historical and present), as well as other relevant national studies.

For developing countries, such as Macedonia, which are not contributing significantly to global greenhouse gas emissions, adaptation is a necessity and a priority. However, the country will need international assistance in order to improve its capacity to adapt to climate change, and to cope with severe impacts.

For the period 2008-2011 an Intersectoral Adaptation Action Plan was developed, involving four major areas: institutional and legal measures; identification, assessment, and mitigation of climate change negative impact; monitoring; strengthening capacities at institutional, systemic, and individual levels.

Also, some specific projects were proposed for financing: three from the water resources sector, one from agriculture, and two from biodiversity. Further efforts should be employed in order to set national criteria and to make prioritization among and within the vulnerable sectors. The most attractive projects would be those coming from the highest priority sectors and also from the intersection of two or more vulnerable sectors (synergetic approach). The linkages with climate change mitigation should also be considered, as well as possibilities for realization of the adaptation projects at the regional level.

## References

1. Second national communication on climate change. December 2008.  
[http://unfccc.int/essential\\_background/library/items/3599.php?rec=j&preref=6570#beg](http://unfccc.int/essential_background/library/items/3599.php?rec=j&preref=6570#beg)



### 3.13 Ukraine



Ukraine has ratified the United Nations Framework Convention on Climate Change in 1996, and, and later, in 2004, the Kyoto Protocol assuming the obligation to comply with these international agreements. Before signing this international agreements, Ukraine had not been adopted no legal act in the field of climate change. For several years, Ukraine made the first steps on the legal settlement of the issue of climate change, in particular as concerns reduction of anthropogenic greenhouse gas emissions by developing draft laws "On the regulation and management of emissions and removals of greenhouse gases", "On the environmental market of Ukraine", "On regulation of energy saving", "The greenhouse gases".

The National Action Plan on climate change mitigation has designed however it has not approved, although it was envisaged that the plan with the definition of funding sources as well as recommendations for appropriate action plan for local authorities can be developed by the December 2010.

In 2010, Ukraine has begun active efforts to solve at the national level one of the strategic issues that defined the UN Framework Convention, namely the problem of adaptation to climate change. The consequences of climate change have already been observed or are expected to affect all sectors of the economy and the livelihoods of the society as a whole, and therefore the problem goes beyond environmental and is, in fact, the socio-economic challenges.

Decrees of the President of Ukraine dated 10 December 2010 "On the decision of the National Security and Defense Council of Ukraine of 17 November 2010" and "On the challenges and threats to the national security of Ukraine in 2011" charged the State Environmental Investment Agency of Ukraine with the developing and approving the National Adaptation Plan to climate change. During the 2012 The Agency together with the regional representation of Friedrich Ebert Foundation in Ukraine and Belarus organized a series of regional workshops to developing recommendations for local authorities on regional action plans on adaptation to climate change. According to the workshops will be prepared and approved by relevant resolutions, which would support the National Plan of Ukraine adaptation to climate change.

In March 2013, the delegations of Ukraine, Moldova and Romania signed a joint statement on "Adaptation of the Danube Delta to climate change." The purpose of this statement is to strengthen cooperation in the Danube Delta in response to the actual and potential effects of climate change.

#### 4. Overview of climate change plans in SEE countries and conclusions

Climate change is occurring globally and in Europe. Climate warming is by now unequivocal: the “Fourth Assessment Report: Climate Change 2007”<sup>1</sup> by IPCC demonstrates the evidence of the temperature growth: increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level, pointing out the anthropogenic role as drivers of climate change.

Current global actions to mitigate climate change are insufficient to constrain the temperature increase to 2 °C, but, even if the 2 °C limit is kept, it foresees that considerable impacts on ecosystems and human health will occur<sup>2</sup>. Therefore adaptation and mitigation of climate change are both needed.

This report was aimed at analysing the state of the art on climate change adaptation and mitigation in the SEE countries. Per each country the reports provides a critical review of existing policies, actions and plans, in order to identify a basic set of measures and support the definition of the optimal mix of all these measures for regional planning.

An overview of the climate change actions and plans in terms of both mitigation and adaptation for all the Countries involved in the OrientGate is resumed in Table 4.1.

<b>ORIENTGATE Country partners</b>	<b>Mitigation</b>	<b>Adaptation</b>
<b>Albania</b>	National Climate Change Action Plan	Action Plan for Adaptation (2009-2015)
<b>Austria</b>	National Climate Strategy	Austrian Adaptation Strategy
<b>Bosnia and Herzegovina</b>	The develop of a Climate Change Mitigation Strategy and Action Plan is foreseen.	No adaptation plan, but, it is engaging in the preparatory research of study of vulnerabilities and adaptation of its territory.
<b>Bulgaria</b>	Environmental Protection Act  Third National Action Plan on Climate Change (2013-2020)	the creation and adoption process of National Adaptation Strategy (NAS) has started
<b>Croatia</b>	The National Environmental Protection Strategy and the National Environmental Action Plan	NO
<b>Greece</b>	National Action Plan regarding Climate Change	National Adaptation Strategy preparation is ongoing
<b>Hungary</b>	National Climate Change Strategy	National Climate Change Strategy
<b>Italy</b>	National Plan to reduce Greenhouse Gases (CIPE proposal 8-3-2013)	National Strategy on Adaptation is ongoing
<b>Montenegro</b>	Assessment of the potential for reducing GHG emissions. Initial National Communication on Climate Change to the UNFCCC 2010	NO
<b>Romania</b>	National Strategy regarding the Climate Changes (2013-2020) under approval	National Strategy regarding the Climate Changes (2013-2020) under approval
<b>Serbia</b>	National Environmental Protection Programme (2010)	NO
<b>The Former Yugoslav Republic of</b>	National Action Plan for Climate Change Mitigation	Intersectoral Adaptation Action Plan (2008-2011)

<b>Macedonia</b>		
<b>Ukraine</b>	National Action Plan on climate change mitigation (not approved)	National Adaptation Plan to climate change. In progress

**Table 4.1:** National mitigation and adaptation strategies and plans in the countries of OrientGate’s partners.

The above table shows that almost all countries have undertaken measures and initiatives to mitigate climate change, mainly finalised to reduce their greenhouse gases emissions, committing themselves with more or less stringent targets in the framework of the Kyoto Protocol obligation, or in compliance with the EU 2020 target.

As concern adaptation, it is worthy to underline that although only two countries, Albania and Austria, can rely on comprehensive plans, most of the other SEE countries have recently started to develop their own adaptation strategies.

Furthermore, for these countries in which the adaptation plan has not been finalised yet, several specific adaptation actions have already been undertaken either at national and local scale, and are recognizable in sectoral and territorial plans, such as agriculture, forestry, energy, transport, water management, biodiversity, aimed to face up biodiversity problems, health, hydraulic and hydrogeological risk, such as heat waves, floods, drought, etc.

This analysis points out that there is a growing interest of policy makers in almost all the SEE countries on climate change issues.

If on the one hand there are mitigation measures and actions which are now well-established, on the other only in recent years adaptation has become a priority worldwide in environmental policies.

## References

1. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Core Writing Team, Pachauri, R.K. and Reisinger, A. (Eds.). IPCC, Geneva, Switzerland (2007). Available at: [http://www.ipcc.ch/publications\\_and\\_data/ar4/syr/en/contents.html](http://www.ipcc.ch/publications_and_data/ar4/syr/en/contents.html)
2. EEA Report No 12/2012 “Climate Change Impacts and Vulnerability in Europe” <http://www.eea.europa.eu/publications/climate-impacts-and-vulnerability-2012>