

Climate Change

Legal reforms for a better adaptation to climate change in the EU

Legal Analysis

Justice and Environment 2013

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Association Justice and Environment (J&E) is a European network of environmental law organisations that strives to protect the environment and nature by improving environmental legislation and enhancing the enforcement thereof. J&E has been working on climate change related issues for five years tackling and analysing the matter from different legal perspectives.¹

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¹ <http://www.justiceandenvironment.org/publications>

Introduction - EU Strategy on Adaptation to Climate Change

In 2013 the main focus of J&E's climate change related researches turned to the questions of Energy Transition - including the promotion of renewable energy sources² and the EU regulation on smart grids³ - and to the legal efforts of the EU relevant to the adaptation to climate change. As the European Union plays an important role in climate change policy development, J&E started to deepen its knowledge base in the field of the EU legislations and policies that aim for a better and more efficient adaptation to the impacts of climate change.

Adaptation to climate change is a crosscutting issue affecting number of the key EU policies including: cohesion policy, common agricultural policy, policies related to forests, waters, and disaster risk management and, environmental, water, fisheries and maritime policies.

In 2009, the European Commission presented a White Paper on "Adapting to climate change: Towards a European framework for action" (COM(2009) 147 final). In accordance with the White Paper, in order to reduce the European Union's vulnerability and to enhance resilience to the impacts of climate change, the preparation of the comprehensive EU Adaptation Strategy took place from 2009 to 2012 and the public consultation procedure of the document was also carried out.

The EU Adaptation Strategy Package⁴ consists of almost fourteen documents of which the EC's COM(2013) 216 final outlines the main objectives and sets the measures of the EU Strategy on adaptation to climate change (COM(2013) 216 final - hereinafter referred as "Strategy").

The Strategy set three objectives and provides also measures in order to achieve those. The objectives of the EU's adaptation efforts are

1. **promoting Member States' action** by
 - encouraging all Member States to adopt comprehensive adaptation strategies,
 - providing funding from Life+ in order to support capacity building and step up adaptation action;
 - introducing adaptation in the Covenant of Mayors Framework;
2. **having better informed decision-making** by
 - bridging the knowledge gaps,
 - developing further the platform of Climate-ADAPT;
3. **promoting adaptation in key vulnerable sectors** by
 - facilitating the climate-proofing of the Common Agricultural Policy (CAP), the Cohesion Policy and the Common Fisheries Policy,
 - ensuring more resilient infrastructure,
 - promoting insurance and other financial products for resilient investment and business decisions.

²

<http://www.justiceandenvironment.org/files/file/2013/Energy%20transition%20status%20report.pdf>

³

<http://www.justiceandenvironment.org/files/file/2013/CC%20Legal%20Analysis%202013.pdf>

⁴ http://ec.europa.eu/clima/policies/adaptation/what/documentation_en.htm

In the implementation of coordinated and integrated efforts for adaptation on national and EU level, legal measures play an essential role. Climate impacts and adaptation challenges differ from sector to sector and this paper does not address to give an overarching picture but it is aimed at exemplifying and highlighting ongoing adaptation processes and main current legislative steps taken in the sectors of agriculture, forestry, plant health, infrastructure, disaster risk prevention and management, and environmental protection.

Adaptation in key vulnerable sectors

Adaptation has already been mainstreamed in few sectoral legislations and policies. Regarding inland water, biodiversity, migration and mobility, measures relevant to climate adaptation have been also included in policy instruments.

The **Blueprint to Safeguard Europe's Water Resources** (COM(2012)673 final) is outlining actions that focus on better implementation of current water legislation, integration of water policy objectives into other policies in order to deal with old and emerging challenges, including water pollution, water abstraction for agriculture and energy production, land use and the impacts of climate change.

The main objective of **COM(2011)244 final on „Our life insurance, our natural capital: an EU biodiversity strategy to 2020”** is at reversing biodiversity loss and speeding up the EU's transition towards a resource efficient and green economy.

Under its thematic priorities, **COM(2011) 743 final on „The Global Approach to Migration and Mobility”** addresses that environmentally induced migration, also by means of adaptation to the adverse effects of climate change, should be considered part of the Global Approach.

1. Adaptation in agriculture and forestry

1.1. Reform of the Common Agricultural Policy (CAP) after 2013

The common agriculture policy of the EU (CAP) will be significantly affected by climate change since agriculture - crop plants, livestock breeding, securing food supply etc. - are directly dependent on climatic conditions.

The current legislative framework of CAP comprises direct payments⁵, market instruments⁶, rural development⁷ and financing⁸. For the period after 2013 the EU Commission envisages the accelerating of the process of integration of environmental requirements in the CAP⁹.

⁵ Council Regulation (EC) No 73/2009

⁶ Council Regulation (EC) No 1234/2007

⁷ Council Regulation (EC) No 1698/2005

⁸ Council Regulation (EC) No 1290/2005

⁹ COM(2011) 625 final/2 - 2011/0280 (COD) Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy

The objectives of the CAP are viable food production, sustainable management of natural resources and climate action; and balanced territorial development. In order to meet these goals, the current reform proposals are based on the Communication on the CAP towards 2020. The CAP after 2013 will be aimed to be the policy of strategic importance for food security, the environment and territorial balance.

The existing legal proposals for the reform of the CAP are focused on the interest of better adaptation to climate change. The reform introduces a strong greening component into the CAP by linking the financial support of the farmers with the requirements of cross compliance and of environmental and climate benefits.

The main element of the proposal (COM/2011/0625 final - 2011/0280 (COD))¹⁰ is that 30 % of direct payments will be tied to greening by

- the retention of soil carbon and grassland habitats associated with permanent pasture,
- the delivery of water and habitat protection by the establishment of ecological focus areas and
- the improvement of the resilience of soil and ecosystems through crop diversification.

According to the current wording of the Article 29 of the proposed Regulation¹¹, farmers entitled to a payment under the basic payment scheme or the single area payment scheme shall observe on all their eligible hectares the agricultural practices beneficial for the climate and the environment referred to in paragraph 1a or the equivalent practices referred to in paragraph 1b).

As paragraph 1a) regulates, the agricultural practices beneficial for the climate and the environment shall be:

- crop diversification;
- maintaining existing permanent grassland and
- having ecological focus area on the agricultural area.

According to paragraph 1b), the equivalent practices shall be those which include similar practices that yield an equivalent or higher level of benefit for the climate and the environment compared to one or several of the practices referred to in paragraph 1a).

It is also to mention that the reform of the CAP would also focus on the introduction of the Water Framework Directives within the remit of cross compliance when all Member States will have fully implemented them in particular with clear obligations for farmers.

¹⁰ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0625:FIN:EN:PDF>

¹¹ Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy/COM/2011/0625 final - 2011/0280 (COD)
[/http://www.europarl.europa.eu/sides/getDoc.do?type=REPORT&reference=A7-2013-0362&language=EN](http://www.europarl.europa.eu/sides/getDoc.do?type=REPORT&reference=A7-2013-0362&language=EN)

Due to the proposal, by implementing the stricter financial conditions, the farmers will be driven towards applying more environmental friendly solutions. The new regulation will result in the modification of the Member States' agricultural regulations in order to ensure the correct application of the adjustment of direct payments.

1.2. Changes in the EU policy on forestry

Forests can be seriously affected by natural factors such as extreme weather conditions, attacks from parasites and diseases but also by climate change, fires and air pollution. Forests also mitigate the impact of extreme weather events by moderating temperatures, and reducing wind speed and water run-off.

Regulation (EC) 2152/2003 on concerning monitoring of forests and environmental interactions in the Community (Forest Focus) established a scheme for forests under the name "**Forest Focus**".

The scheme of the "Forest Focus" has covered protection against atmospheric pollution, prevention of fires and their causes and effects, biodiversity, climate change, carbon sequestration, soils and protective functions of forests, and continuous evaluation of monitoring activities.

The measures provided by the scheme are the promotion of harmonised collection, handling and assessment of data; improvement of data evaluation at Community level and data quality, development of forest monitoring activities; enhancement of the understanding of forests; studying of forest fires and development of indicators and methodologies for risk assessment.

Under this scheme, networks of observation points and plots (system for monitoring the effects of air pollution) are to be maintained in order to produce periodic inventories and carry out continuous monitoring of forest ecosystems.

The Member States are obliged to draw up national programmes on two-year-basis and submit it to the Commission. The national programmes have to include an ex-ante evaluation, and also mid-term and ex-post evaluations shall be elaborated and submitted.

Although „Forest Focus" run from 1 January 2003 to 31 December 2006 and LIFE+ become the new financial instrument for the environment, the Regulation governs the measures adopted under this scheme. Member States are to forward to the Commission annual data collected under Forest Focus accompanied by a report. They are to make this data available to the public and Member States are to send regular reports on the condition of their forest ecosystems to the Commission.

A strategy for the forest sector has been necessary as there weren't any common EU forest policy or guiding framework for forest-related issues.

On 20 September 2013 the Commission adopted a new EU Forest Strategy in order to maintain and enhance the forests' resilience and adaptive capacity, including through fire prevention and other adaptive solutions.

The new Forest Strategy points out that forest management can mitigate climate change if forests' role as sinks in the carbon cycle is maintained or enhanced and by providing bio-materials that can act as temporary carbon stores or as 'carbon substitutes', replacing carbon-intensive materials and fuels.¹²

According to the strategic orientations of the new Forest Strategy Member States should demonstrate:

- how they intend to increase their forests' mitigation potential through increased removals and reduced emissions, including by cascading use of wood, taking into account that the new LIFE+ subprogram for Climate action and Rural Development funding can promote and support new or existing forest management practices that limit emissions or increase net biological productivity (i.e. CO₂ removal). They should do this by mid-2014 and in the context of their information on LULUCF actions;
- how they enhance their forests' adaptive capacities and resilience, building on the actions proposed in the EU Strategy on Adaptation to Climate Change and the Green Paper on Forest Protection and information, such as bridging knowledge gaps and mainstreaming adaptation action in forest policies.¹³

The New Forest Strategy highlights that forests are not only important for rural development, but also for the environment - especially for biodiversity; for forest-based industries; bioenergy; and in the fight against climate change.

The document envisages the establishment of a Forest Information System to be set up and for Europe-wide harmonised information on forests to be collected.

The New Forest Strategy represents a holistic strategic vision on forest issues, and aims to ensure that linked EU policies are fully taken into account in national forest policies and to strengthen the capacity of forests and the forest-based sector to respond to developments in various policy areas.

The progress in implementing the New Forest Strategy will be assessed in 2018.

1.3. Reform of plant health regime

In addition to climatic change new problems in plant health arise in agriculture. The basic structure of the legislation on plant health has been established in 1977. A comprehensive evaluation of the regime was carried out in 2009-2010, of which results showed that the objectives of the regime have been partially met. Although the risks have increased, the regime cannot address these effectively.¹⁴

¹² COM(2013) 659 final A new EU Forest Strategy: for forests and the forest-based sector. http://ec.europa.eu/agriculture/forest/strategy/communication_en.pdf

¹³ http://ec.europa.eu/agriculture/forest/strategy/communication_en.pdf

¹⁴ http://ec.europa.eu/smart-regulation/impact/planned_ia/docs/2013_sanco_002_eu_plant_health_law_en.pdf

The plant health regime shall to support sustainable production through prevention of introduction and spread of new pests and diseases; to ensure food security; to protect forests, the landscape and public and private green; and to ensure agricultural competitiveness.

In order to solve the problems arising from globalisation appropriately, to mitigate the plant health impacts of climate change and to address more the natural environment, the Commission elaborated the **Roadmap on „New plant health law”**.¹⁵

The Roadmap relates to the Union's common agricultural policy (CAP), climate change policy, environment policy (including the policy for invasive alien species and biodiversity protection), customs policy, trade policy, internal market policy, and research policy.

2. Adaptation in infrastructure

The Commission's staff working document on **“Adapting infrastructure to climate change” (SWD(2013) 137 final)** stated that improving the climate resilience of existing and future infrastructure from the impact of climate change is predominantly a Member State responsibility. The EU nevertheless has an important role in providing several instruments which can help improving a project's adaptive response and resilience.

Most infrastructure sectors are strongly regulated, which means that policies governing these sectors play an important role and might need to be revised in the light of current and future climate changes. One of the most important type of instrument used to regulate infrastructure sectors are standards at EU level, which often include references to weather/climate related pressures. Furthermore, revised guidelines for the Environmental Impact Assessment and the Strategic Environment Assessment as well as the Floods directive contribute to climate resilient investment. Additionally, guidelines for climate-proofing infrastructure projects can support this process.¹⁶

2.1. Energy infrastructure

In terms of energy legislation, climate relevant provisions and considerations are most significant in respect of energy efficiency, alternative energy sources, decarbonization of energy production, smart grids in electricity distribution, etc. Climate change however will have impacts also on the energy sector - mostly on its infrastructure – which sector also has to enhance its preparedness to the adverse impacts caused by the changing climatic factors.

¹⁵ http://ec.europa.eu/smart-regulation/impact/planned_ia/docs/2013_sanco_002_eu_plant_health_law_en.pdf

¹⁶ Adapting infrastructure to climate change. Accompanying the document „An EU Strategy on adaptation to climate change”.
http://ec.europa.eu/clima/policies/adaptation/what/docs/swd_2013_137_en.pdf

The transmission and distribution grids are increasingly challenged by new seasonal and regional demand patterns as well as direct physical effects of extreme weather events (e.g. storms or floods). At the same time, they are also subject to new balancing requirements arising from the integration of significant volumes of electricity produced from renewable sources (typically sparsely distributed). Despite this dual challenge, a high degree of reliability needs to be ensured. Due to their comparatively lower physical robustness, older regional distribution networks are particularly vulnerable to extreme weather events (e.g. flashovers in rural areas).

The generation of electrical energy is affected by efficiency decreases due to climate change (e.g. decreasing availability of cooling water for electricity generators). However, in some parts of Europe, increased precipitation or more wind may also lead to new opportunities for hydropower or wind energy generation. Overall, floods are identified as a particular threat to electricity generators and related physical assets.

Additionally, extreme weather periods such as heat waves, cold spells, and droughts will lead to increasingly significant demand peaks, potentially causing demand-driven overstress of energy infrastructure. Scientific evidence suggests that regional and seasonal demand shifts are the most important, climate-induced change to the energy system. The transmission and distribution grids are increasingly challenged by new seasonal and regional demand patterns as well as direct physical effects of extreme weather events (e.g. storms or floods).¹⁷

The European Commission delivered the proposal on establishing the **Connecting Europe Facility**¹⁸ (CEF) in 2011 and the Council has adopted the Regulation thereon on the 5th of December 2013.¹⁹ Par (5) of that Regulation contains that the Commission committed itself to mainstreaming climate change into Union spending programmes and to directing at least 20 % of the Union budget to climate-related objectives because it is important to ensure that climate change mitigation and adaptation, as well as risk prevention and management, are promoted in the preparation, design and implementation of projects of common interest.

Infrastructure investments covered by this Regulation should help to promote the transition to a low-carbon and climate- and disaster-resilient economy and society, taking into account the specificities of regions with natural and demographic disadvantages, in particular the outermost and island regions. In the transport and energy sectors in particular, the CEF should contribute to the Union's mid-term and long-term objectives in terms of decarbonisation.

¹⁷ Adapting infrastructure to climate change. Accompanying the document „An EU Strategy on adaptation to climate change”.

http://ec.europa.eu/clima/policies/adaptation/what/docs/swd_2013_137_en.pdf

¹⁸ COM(2011) 665 - 2011/0302 (COD)

¹⁹

http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/trans/139932.pdf

In the list of pre-identified priorities and areas of intervention, under the horizontal priority of innovative management, mapping and services, the Regulation requires the analysis of the environmental impact, taking climate change adaptation and mitigation needs, and disaster resilience into account.

The **Regulation (EU) No 347/2013 on guidelines for trans-European energy infrastructure** and repealing Decision No 1364/2006/EC and amending Regulations (EC) No 713/2009, (EC) No 714/2009 and (EC) No 715/2009 aims to facilitate the timely development and interoperability of trans-European energy networks (TEN-E).

This Regulation identifies the trans-European energy infrastructure priorities which need to be implemented by 2020 in order to meet the Union's energy and climate policy objectives. These priorities cover different geographic regions or thematic areas in the field of electricity transmission and storage, gas transmission, storage and liquefied or compressed natural gas infrastructure, smart grids, electricity highways, carbon dioxide transport and oil infrastructure.

The Regulation sets rules to identify projects of common interest necessary to implement those priorities, and lays down measures in the field of the granting of permits, public involvement and regulation to speed up and/or facilitate the implementation of those projects, including criteria for the eligibility of such projects for Union financial assistance.

In order to be designated as a project of common interest and to be included into the regional lists, a project has to meet certain general criteria (Art 4 par 1). It needs to be necessary for one or more of the priority infrastructure corridors or areas, the potential total benefits must exceed the costs, including in the longer term and the project needs to have significant cross-border effects.

These projects falling within specific energy infrastructure categories have to contribute to further specific criteria set out in Art 4 par 2.

The Annex IV to the Regulation contains the rules and indicators concerning criteria for projects of common interest.

Regarding the projects concerning electricity falling under the categories set out in Annex II.1(a) to (d), the criteria listed in Article 4 shall be evaluated by taking into account inter alia the expected changes in climate-related extreme weather events and their impact on infrastructure resilience.

Concerning **oil transport projects** falling under the categories set out in Annex II.3 the criteria listed in Article 4 shall be evaluated so that efficient and sustainable use of resources shall be measured by assessing the extent to which the project makes use of already existing infrastructure and contributes to minimising environmental and climate change burden and risks.

The methodology for a harmonised energy system-wide cost-benefit analysis for projects of common interest shall satisfy the following principles laid down in Annex V of the Regulation.

For **electricity transmission and storage**, the cost-benefit analysis shall at least take into account greenhouse gas emissions and transmission losses over the technical lifecycle of the project and system resilience, including disaster and climate resilience, and system security, notably for European critical infrastructures.

For **gas related projects**, the cost-benefit analysis shall at least take into account the results of market testing the impacts on the indicators defined in Annex IV and disaster and climate resilience, and system security, notably for European critical infrastructures and congestion in the gas network.

2.2. Transportation

The potential impacts of climate change on transportation and other built infrastructure are sufficiently well defined in the scientific literature in order to have climate change into the long-term planning process for transportation systems incorporated. The consequences of climate change are both negative and positive for transport infrastructure such as for rail, road, shipping and aviation, but will differ from region to region.²⁰

Decision 661/2010/EC on Union guidelines for the development of the trans-European transport network aims for the smooth functioning of the internal market and the strengthening of economic and social cohesion – by means of attaining a number of specific objectives and incorporates number of provisions related to climate adaptation of the infrastructures.

The Proposal for a Regulation on Union guidelines for the development of the trans-European transport network²¹ pointed out that in order to achieve a high-quality and efficient transport infrastructure across all modes the guidelines should contain provisions regarding the security and safety of passengers and freight movements, the impact of climate change and of potential natural and man-made disasters on infrastructure and accessibility for all transport users.

The trans-European transport network (TEN-T) aims to contribute to two major European Union (EU) objectives: the smooth functioning of the internal market and the strengthening of economic and social cohesion. In order to achieve these, the proposed Regulation sets out number of specific objectives, such as

- sustainable mobility of persons and goods across the EU;
- high-quality infrastructure;
- effective coverage of the whole territory of the EU, by linking island, landlocked and peripheral regions to the central regions as well as interlinking the major conurbations and regions of the EU;
- interoperability and intermodality within and between different modes of transport;
- optimal use of existing capacities;
- economic viability of the network;
- connection of the network to the member countries of the European Free Trade Association (EFTA), the countries of Central and Eastern Europe, and the Mediterranean countries.

²⁰ http://ec.europa.eu/clima/policies/adaptation/what/docs/swd_2013_137_en.pdf

²¹ COM/2011/0650 final/2 - 2011/0294 (COD)

The priority projects are projects of common European interest which

- are intended to eliminate a bottleneck or complete a missing link on a major route of the trans-European network;
- are on such a scale that long-term planning at European level contributes significant added value;
- present potential socio-economic benefits;
- significantly improve the mobility of goods and persons between EU countries;
- contribute to enhancing the territorial cohesion of the EU by integrating the networks of the new EU countries;
- contribute to the sustainable development of transport.

According to the proposed Regulation, **Member States** - and, as appropriate, regional and local authorities, infrastructure managers, transport operators and other public and private entities – **have to plan, develop and operate the trans-European transport network in a resource efficient way, through – inter alia - the assessment of strategic environmental impact, with the establishment of appropriate plans and programmes and of impacts on climate mitigation and adequate consideration of the vulnerability of transport infrastructure with regard to a changing climate as well as natural and man-made disasters.**

Article 10 of the Regulation lays down priorities where the interest of climate adaptation also appears. The Regulation requires that the EU, the Member States, the infrastructure managers and other project promoters, when developing the comprehensive network, shall give particular consideration to measures that are necessary for improving or maintaining the quality of infrastructure in terms of efficiency, safety, security, climate and where appropriate disaster resilience, environmental performances, social conditions, accessibility for all users, quality of services and continuity of traffic flows.

Article 41 of the proposed Regulation is expressly addressed to the question of climate change proven infrastructure and disaster resilience. It contains that when planning infrastructure, Member States and other project promoters have to give due consideration to the risk assessments and adaptation measures adequately improving the resilience to climate change, in particular in relation to precipitation, floods, storms, high temperature and heat waves, droughts, sea level rise and coastal surges. Where appropriate, due consideration should also be given to the resilience of infrastructure to natural or man-made disasters.

Furthermore, **Article 42 on „Environmental protection” requires that environmental assessment of plans and projects shall be carried out in particular as provided in the related EU legislations²²** in order to avoid or, when not possible, mitigate or compensate for negative impacts on the environment, such as to landscape fragmentation, soil sealing, air and water pollution as well as noise, and to effectively protect biodiversity.

²² Council Directives 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment; 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, Directives of the European Parliament and of the Council: 2000/60/EC of 23 October 2000 establishing a framework for Community action in the field of water policy 2001/42/EC of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment, and 2009/147/EC of 30 November 2009 on the conservation of wild birds

The EIA Directive already requires to take climatic factors into account when assessing the environmental impacts of a given investment, and the current proposal for its modification will extend the environmental aspects to be considered with the climate adaptation (see point 6.).

According to the proposed TEN-T Regulation Member States concerned, in cooperation with the corridor platform, shall jointly draw up and notify to the Commission a corridor development plan for each core network corridor.

The corridor development plan shall include in particular an implementation plan including risk assessment, including the possible impacts of climate change on the infrastructure and where appropriate proposed measures to enhance climate resilience and measures to be taken in order to mitigate greenhouse gas emissions (Article 53).

Based on the corridor development plan provided by Member States concerned, the Commission delivers its opinion and in order to support the implementation of the core network corridors, the Commission may adopt implementing decisions for core network corridors.

The implementing decisions may include the investment planning, the related costs and implementation timeline or define all measures aimed at reducing external costs, in particular greenhouse gas emissions and noise, and aimed at promoting the introduction of new technologies in traffic and capacity management.²³

Planning, design, operation, and maintenance of transportation systems traditionally have been based on the analysis of historical weather data, but the climate is changing in ways not witnessed before. Structural solutions such as elevating new bridges and highways are an obvious approach and may well have relatively modest marginal cost impacts. Retrofitting or reconstructing existing highways and bridges is a different matter. Here the criticality of the assets is of paramount importance.²⁴

2.3. Buildings and construction

Buildings, are the most common type of infrastructure which is also relevant to other infrastructure sectors. National, regional and local bodies have a role in both adapting their physical assets to climate change and in considering climate adaptation in legal planning frameworks and permission granting procedures.

The European level can however have also an important role in stipulating the uptake of climate considerations in planning and construction by ensuring the uptake of climate resilience in EU infrastructure investment policies, and by promoting new construction standards.

²³ COM(2011) 650/2 -Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Union guidelines for the development of the trans-European transport network <http://ec.europa.eu/transport/themes/infrastructure/connecting/doc/revision/legislative-act-ten-t-revision.pdf>

²⁴ Adapting Transportation to the Impacts of Climate Change: State of the Practice 2011. TRANSPORTATION RESEARCH BOARD; <http://www.trb.org/Main/Blurbs/165529.aspx>

At EU level, Eurocodes can be a suitable instrument for addressing climate resilience in different infrastructure sectors. Eurocodes are a set of European Standards (EN) for the structural design of buildings and civil engineering works, produced by the European Committee for Standardisation (CEN) to be used in the European Union.²⁵

3. Integrated coastal management

The increased use of coastal and maritime areas as well as climate change effects, natural hazards, erosion, also put pressure on coastal and marine resources. They require integrated and coherent management to secure sustainable growth and preserve coastal and marine ecosystems.

The EU Regulation No 1255/2011 established a Programme to support the further development of an Integrated Maritime Policy. The Programme - under its operational objectives - lays down that actions for the mitigation of the effects of, and adaptation, to climate change on the marine, coastal and insular environment shall be promoted with a particular emphasis on those areas that are most vulnerable in that respect (Art 3 p. (e)).

In 2013 a proposal for a Directive on a framework for maritime spatial planning has been delivered by the Commission pointing out that maritime spatial planning and integrated coastal management will contribute, inter alia, to achieving aims of the EU Strategy on Adaptation to Climate Change.

The proposed framework is to contribute to:

- securing the energy supply of the Union by promoting the development of marine energy sources, the development of new and renewable forms of energy, the interconnection of energy networks, and energy efficiency;
- promoting the development of maritime transport and providing efficient and cost-effective shipping routes across Europe, including port accessibility and transport safety;
- fostering the sustainable development and growth of the fisheries and aquaculture sector, including employment in fisheries and connected sectors;
- ensuring the preservation, protection and improvement of the environment as well as the prudent and rational use of natural resources, notably in order to achieve good environmental status, halt the loss of biodiversity and degradation of ecosystem services and reduce marine pollution risks;
- ensuring climate resilient coastal and marine areas.

The proposed text of the Directive lays down specific minimum requirements for integrated coastal management strategies. According to its Article 8, the integrated coastal management strategies shall contain at least, an inventory of existing measures applied in coastal zones and an analysis of the need for additional actions in order to achieve the objectives.

²⁵ Adapting infrastructure to climate change. Accompanying the document „An EU Strategy on adaptation to climate change”.

http://ec.europa.eu/clima/policies/adaptation/what/docs/swd_2013_137_en.pdf

The strategies provide for integrated and cross-sectoral policy implementation and consider interactions between terrestrial and maritime activities.

When establishing integrated coastal management strategies, Member States have to take into account, at least, the following activities:

- utilisation of specific natural resources including installations for the extraction of energy and the production of renewable energy;
- development of infrastructure, energy facilities, transport, ports, maritime works and other structures including green infrastructure;
- agriculture and industry;
- fishing and aquaculture;
- conservation, restoration and management of coastal ecosystems, ecosystem services and nature, coastal landscapes and islands;
- mitigation and adaptation to climate change.

In order to achieve the objective of the Member States' active participation in adaptation, the document provides that LIFE funding shall be to support capacity building and step up adaptation action particularly e.g. in trans-boundary coastal management, with emphasis on densely populated deltas and coastal cities.

4. Assessment and management of flood risks

Floods can have major negative impacts on human health, on the environment, cultural heritage and economic activity. Therefore it needs to take into account the potential impact of climate change on the frequency and intensity of floods. In the design of flood defense infrastructure, changing flood intensities and patterns need to be considered.

The European Union's Floods Directive (2007/60/EC) establishes a framework for the assessing and managing flood risks. It aims at reducing adverse consequences for floods and calls for adequate information tools. The Directive requires the establishment of flood hazard maps, flood risk maps and flood risk management plans.

From the end of 2013, flood hazard and risk maps shall be made publically available for the scenarios of floods with low probability, or extreme event scenarios, of floods with a medium probability (likely return period ≥ 100 years) and of floods with a high probability. The flood risk maps shall display the flood extent, the water depths and the water flow. These maps help to identify which already existing infrastructure is under risk or which infrastructure might be at risk if it would be built within an area of potential significant flood risk.

The Directive also asks Member States to develop cross-sectorial flood risk management plans which include measures on prevention, protection and preparedness. They are based on existing land-use policies, planning processes, engineering and non-engineering options and involve both public and private actors. Regular updates of maps and plans (every six years) will enable authorities to base their scenarios on the latest findings of climate change research.²⁶

²⁶ http://ec.europa.eu/clima/policies/adaptation/what/docs/swd_2013_137_en.pdf

5. Adaptation in disaster risk management

The EU Floods Directive requires the development of Flood Risk Management Plans (FRMPs) by 2015, to be fully coordinated with the second cycle of RBMPs also due in 2015.

The FRMP should also be taken into account when developing cross sectoral and multi hazard risk management plans. This should hopefully bring about improved land use and spatial planning, which takes duly into account climate change, disaster resilience and adaptation needs.

As consequence of that the climate changes, natural disasters will likely become more intense and more frequent - the proportion of EU territory and population affected by drought has increased from 6% to 13% since 1990.

In addition to natural disasters and epidemics, manmade disasters such as oil spills and radioactive contamination threaten the environment and human health. Therefore, the EU is improving its ability to deal with disasters and a new proposal to strengthen disaster prevention capacities and increase cooperation with developing countries has been elaborated.²⁷

The proposed new strategy is mainly addressed to cross-border disasters that require a joint response by EU member countries. It would include better access to early warning systems, more efficient spending of EU funds and an EU-wide inventory of existing information and best practices.

The objective of the communication is to identify measures which could be included in a Community strategy for the prevention of natural and man-made disasters, building upon and linking existing measures. Prevention is understood as where possible preventing disasters from happening, and where they are unavoidable taking steps to minimise their impacts.

Member States already have, to varying degrees, policies aimed at the prevention of disasters. Action at the Community level should complement national actions and should focus on areas where a common approach is more effective than separate national approaches. In particular, the EU will seek to reduce the impact of disasters within the EU by:

- the development of knowledge based disaster prevention policies at all levels of government;
- linking the relevant actors and policies throughout the disaster management cycle;
- improving the effectiveness of existing policy instruments with regard to disaster prevention.

A Community approach to disaster prevention should explicitly seek to build on measures that have already been taken at European level – either sector legislation or the possibility of using Community funds for preventions activities.

²⁷ Communication from the Commission to the Council, and the European Parliament on an EU Strategy for supporting disaster risk reduction in developing countries.

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52009DC0084:EN:NOT>

„Particular attention has been given to ensure close coordination between civil protection and humanitarian aid, as well as consistency with actions carried out under other EU policies and instruments, in particular in the fields of justice, liberty and security policy, including consular support and protection of critical infrastructure, environment, in particular flood management and control of major accidental hazards; climate change adaptation; health; marine pollution; external relations and development.”

The communication sets out an overall European approach to the prevention of disasters. It identifies areas for action and outlines specific measures to boost disaster prevention in the short term. The implementation of these measures will take account of actions already undertaken by the Community, thus creating the necessary conditions for bringing the latter together under a consistent and effective Community framework.

6. Adaptation in environmental protection

Climate change will continue to cause damage to the environment, thus the environmental, social and economic resilience of the Union should be promoted so as to deal with climate change throughout the EU's territory in an efficient manner. Climate change adaptation and mitigation responses need to be addressed across many of the sectors of EU legislation.²⁸

Helping to improve the climate resilience of infrastructure, the Environmental Impact Assessment (EIA) and the Strategic Environmental Assessment (SEA) can be appropriate instruments to mainstream adaptation.

In the case of projects which are subject to an environmental impact assessment, Member States shall adopt the necessary measures to ensure that the developer supplies in an appropriate form the information specified in Annex IV to the Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (EIA Directive).

The EIA Directive requires that environmental impact assessments shall identify, describe and assess the direct and indirect effects of a project on the human beings, fauna and flora, soil, water, air, climate, the landscape, material assets and cultural heritage and the interactions between these factors (Article 3).

The Commission's **Proposal for a Directive amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment** (COM(2012) 628 final 2012/0297 (COD)) suggests to amend Annex IV to the Directive containing the required information.

The proposal would extend the aspects to be explained due to the Annex IV. point 4. The proposed text prescribes that the developer shall provide a description of the aspects of the environment likely to be significantly affected by the proposed project, including, in particular, population, human health, fauna, flora, biodiversity and the ecosystem services it

²⁸ COM(2012) 628 final 2012/0297 (COD) Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment

provides, land (land take), soil (organic matter, erosion, compaction, sealing), water (quantity and quality), air, climatic factors, climate change (greenhouse gas emissions, including from land use, land use change and forestry, mitigation potential, **impacts relevant to adaptation, if the project takes into account risks associated with climate change**), material assets, cultural heritage, including architectural and archaeological ones, landscape; such a description should include the inter-relationship between the above factors, as well as the exposure, vulnerability and resilience of the above factors to natural and manmade disaster risks.

The Strategic Environment Assessment (SEA) is also an effective tool for climate change adaptation, especially by introducing climate change considerations into development and planning processes. The SEA provides a framework for assessing and managing a broad range of environmental risks which may contribute to the integration (or “mainstreaming”) of climate change considerations into plans and programmes that fall into the scope of the SEA Directive.

The integration of climate change into strategic planning through the application of SEA should lead to better informed, evidence-based PPs that are more sustainable in the context of a changing climate, and more capable of delivering progress on human development.

The Commission has stated that the inclusion of climate change adaptation considerations in plans and programmes through SEA is not yet fully developed. This is partly linked to the fact that the notion of climate change adaptation in planning processes is relatively recent. Moreover, the primary focus of

SEAs so far has been to evaluate the impact of a plan and programme on the environment rather than the impact of environmental change on a plan and programme. However, additional guidance for integrating climate change and biodiversity in SEA is under way, also providing a clearer picture of how to target climate change adaptation in the context of the Strategic Environmental Assessment (SEA) Directive.²⁹

Closing remarks

The above-explained legal reforms and strategic proposals cover the key vulnerable sectors referred by the Strategy. Within rural development and agriculture, the objectives of the sustainable management of natural resources and climate action are prioritised through the restoration, preservation and enhancement of ecosystems as well as the promotion of resource efficiency, low carbon and climate resilient agriculture.

By the reform of the CAP, farmers will be driven to reinforce the ability of land and natural ecosystems in order to contribute to address major EU biodiversity and climate change adaptation objectives.

²⁹ Adapting infrastructure to climate change. Accompanying the document „An EU Strategy on adaptation to climate change”.
http://ec.europa.eu/clima/policies/adaptation/what/docs/swd_2013_137_en.pdf

As the Strategy mentioned the moves to mainstream climate change adaptation into EU policies will be pursued in priority fields such as energy and transport. Climate change has consequences for the energy sector sustainability and resilience.

Impacts of climate change, such as an increased frequency of extreme weather events or changing water and air temperatures have effects on energy transmission, distribution, generation and demand. Future investments under the TEN-E policy, in particular through the Connecting Europe Facility (2014-2020)³⁷, are expected to contribute to enhancing the system's resilience and to tackling part of the investment needs for the adaptation of electricity grids.

The transport sector's economic and social functions and is highly depend on the environmental situation. The proposal for the new TEN-T Guidelines includes climate resilience, in particular under Article 41; during infrastructure planning due consideration shall be given to risk assessments and adaptation measures adequately improving the resilience to climate change.

As floods may have major negative impacts, the European Union's Floods Directive (2007/60/EC) establishes a framework. The flood risk maps can serve as a valuable tool for identifying current and future flood risks and thus support investment decisions and spatial planning.

With its policies and within its competences, the EU contributes to adapting to climate change in the most vulnerable sectors. In the EU legislation and policies there have been already number of provisions incorporated that serve the better adaptation to the impacts of climate change. These provisions and measures create the base for the EU and its Member States to implement effective and common efforts.

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