STRATEGIC AGENDA on

ADAPTATION TO CLIMATE CHANGE

in the

CARPATHIAN REGION

CARPIVIA
CARPATHIAN INTEGRATED ASSESSMENT OF VULNERABILITY TO CLIMATE CHANGE AND ECOSYSTEM-BASED ADAPTATION MEASURES

CARPATHIAN CONVENTION

This FINAL DRAFT version dated 12th September 2012

(First draft prepared by Charlie Avis at the request of the Carpathian Convention Working Group on Adaptation to Climate Change in cooperation with CARPIVIA project)

STRATEGIC AGENDA on ADAPTATION to CLIMATE CHANGE in the CARPATHIAN REGION

1 Opportunities exist to steer the Carpathian region onto a sustainable, climate-proofed path. This document aims to assist governments and other stakeholders in formulating responses to climate change towards this goal. The document offers a draft Strategic Agenda on Adaptation to Climate Change as a basis for consultation[1] with signatories and observers of the Carpathian Convention as well as interested stakeholders.

What this document is:

2 *A Carpathian-wide, strategic policy guidance with suggestions for future policy, programming and institutional directions to move the Carpathian Space towards a climate-proofed future. Generic-level measures are given, together with other opportunities for action, by way of illustration. In particular, the document is a support to assist the Working Group on Adaptation to Climate Change (Climate Change WG), established at COP3 in May 2011, fulfil its tasks including the development of policy proposals in line with the European Commission's White Paper and the Carpathian Convention[2].*

What this document is not:

3 *A detailed analysis of reference conditions or climate change scenarios, nor a climate change adaptation strategy, nor a programme-of-measures, nor a prescriptive list of what is required.*

This document is accompanied by:

4 *Annex:* Matrix of Policy Opportunities for Climate Change Adaptation Measures in the Carpathians, *listing possible adaptation measures, policy linkages, actors involved, and forthcoming funding opportunities with timelines of decision-making.*

Background: Climate Change in the Carpathians[3], and What does Adaptation Mean?

5 According to the IPCC's 4th Assessment Report (2007) the great majority of organisms and ecosystems are likely to have difficulty in adapting to climate change, with central Europe likely to be one of the hardest hit regions[4]. Regional climate change projections suggest more irregular rainfall and a warmer climate in the Carpathian basin. Studies of temperature change over the Carpathian Basin, summarised by CARPIVIA, largely agree increases in temperature. The Carpathian mountains will experience an increase between 3.0 ºC in the north-western part to 4.5ºC in the south during this century.

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Comment [SN1]: Reference to scenario (Saskia)

6 Model studies largely agree in projecting a small increase of winter precipitation and a significant decrease of summer precipitation. Although the mean annual values of precipitation will remain almost constant, decreases in summer precipitation are projected of above -20% and increases in winter precipitation in most areas of between +5 to +20% this century.

7 These changes will have profound consequences on the environment, on the economy, and on human health and wellbeing. These consequences will be summarised in the next section.

[1] The consultations are to result in a Strategic Agenda offered by the members of the Working Group on Adaptation to Climate Change to the Carpathian Convention for approval by the Carpathian Convention Implementation Committee before the Fourth Meeting of the Conference of the Parties to the Carpathian Convention (COP 4) to be held in Czech Republic in 2014.

[2] The scope and mandate of the WG on Adaptation to Climate Change, according to the Terms of Reference, includes recommendations on policy proposals, follow-up projects including on adaptation measures, and a discussion on the cost, benefits and feasibility of adaptation measures, in particular on adaptive water management and ecosystem-based measures.

[3] Climate data taken from: DLO Alterra, 2011, Interim Report Task 2 CARPIVIA Project [Tender DG ENV.D.1/SER/2010/0048]: Preliminary Assessment vulnerability & potential adaptation measures, 82pp., Wageningen, Netherlands. Available online at http://www.carpivia.eu/about-CARPIVIA/downloads

[4] IPCC, 2007, 4th Assessment Report, Chapter 12 – Europe, p.563.

Climate Change Adaptation

8 The European Commission White Paper "Adapting to climate change; Towards a European framework for action" (COM/2009/147) calls for a more strategic approach to climate change adaptation across different sectors and levels of governance. This document, together with the Water Framework Directive, the Directive on Floods, and the EU Water Scarcity and Droughts Strategy, form the core of EU policy on climate change and stress the importance of[5]:

- Building resilience against the added risk of climate change by acting on existing anthropogenic risk,
- Using a cyclic management approach to include increasing knowledge over time on climate change impacts, and incorporating this into a comprehensive information system for use in decision-making for adaptive management,
- Using the opportunity of implementation of existing initiatives to:
  - restore natural ecosystem function within catchments, in particular the ability of catchments to retain and slowly release water and to degrade pollutants,
  - reduce fragmentation and improve connectivity of habitats to allow species movements,
  - balance ecology and economic developments,
- Mainstreaming of climate concerns into other policy areas, programmes, processes and funding supports.

9 These elements constitute climate change adaptation, and their implementation rests upon certain fundamental principles against which possible measures should be formulated and judged, namely:

- Investing in the future, not the past
- Working with nature, not against it
- Inclusivity of stakeholders and increasing public awareness
- Building capacity for adaptive management
- Focussing on „no-regrets" and „win-win" measures and solutions
- Change management practices and infrastructure that add to long-term vulnerability.

10 Adaptation to climate variability and change is both a technical and a social process of assessing and responding to present and future impacts, planning to reduce the risk of adverse outcomes, and increasing adaptive capacity and resilience in responding to multiple stresses (EU WFD p.29). Thus the development of appropriate institutional architecture for adapting to climate change is a very necessary task, and one which other European mountain regions, such as the Alps, have started already[6].

Uncertainty

11 There remains – and will always remain – elements of uncertainty. In practical terms, decisions related to climate change, its impacts and adaptation options cannot be made on simple, single values but need to encompass the range of possible future climate projections. Thus, decision makers will have to handle a bandwidth of values or different scenarios and accept and be explicit about uncertainty. No matter how complex and multi-variable the context, doing nothing is no longer an option. This therefore demands an emphasis on risk management and on measures that build adaptive capacity and flexibility.

Diversity

12 Climate change adaptation is by its nature location-specific, and mountain ecoregions such as the Carpathians contain such great diversity in geography, micro-climate, habitats and species, and culture that inevitably many or most adaptation measures will be developed for a unique location. There is still a role, however, for over-arching, transnational, and cross-cutting measures and approaches, since these are necessary to flag, create, and communicate opportunities, funding, best practices, and systematised information flows to ground and community levels.

Part of a Transition to a Climate-proofed Green Economy

13 Countries in the Carpathian region recognise that the global transition to a greener, low-carbon future, has already begun. The European Commission "urges each Member State to develop national low carbon roadmaps, if not already done", and is ready to assist countries to develop such a strategic overview climate/energy roadmap or vision, has some tools available, and will be using the opportunity of the review and planning for the Multi-Annual Financial Framework 2014 - 2020 to see from where funding supports, for example

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[5] EU Guidance Document Number 24 – River Basin Management in a Changing Climate, technical report – 2009 – 040, Common Implementation Strategy for the Water Framework Directive (2000/60/EC), p.16, Brussels, Belgium.

[6] For example, see progress and results of the CLISP project: Climate Change Adaptation by Spatial Planning in the Alpine Space, available at www.clisp.eu and the CLIMALPTOUR project: Climate Change and its Impact on Tourism in the Alpine Space at www.climalptour.eu

from Cohesion Funds and the Common Agricultural Policy (CAP) can be tapped for financing the longer-term transition.[7] Climate change adaptation should be a fundamental part of this transition, increasingly reflected in National Climate Change Adaptation Plans and National Communications to the UNFCCC process.

14 Countries in the Carpathian region can therefore grasp these opportunities and collectively map out a path towards a climate-proofed future which draws upon, and conserves, the unique natural and cultural values of the Carpathian region, using this as precious capital for a prosperous future in a changing climate.

New Partnerships

15 To succeed, new partnerships will be required. Of course, the involvement not just of government but also civil society, the research and education institutions, and international organisations will be key. So will the involvement of the private sector. If climate change adaptation is integral to the green economy, and the green economy is mostly about jobs, and most jobs are provided by the private sector, then it follows that the private sector is a vital partner in this process. According to UNFCCC the specific expertise of the private sector, its capacity to innovate and produce new technologies for adaptation, and its financial leverage can form an important part in the multi-sectoral partnership that is required for planning and implementation of adaptation[8].

The Issues: Impacts of Climate Change in the Carpathians

Temperature Change

16 Rising winter and summer temperatures threaten local and national policy objectives related to agriculture, winter tourism, rural development and a host of economic and social issues. There will likely be increases in pest incidence and possible spread of invasive and alien species. Some alien species produce allergenic substances which have implications for human health. Higher temperatures can shorten the snow season and raise the snow-line, but lengthen the growing season for agriculture and increase plant productivity (unless it is limited by water availability, see below).

Precipitation Change

17 More intensive, short-duration precipitation will lead to increased risk of flash floods year round. Increases in winter rainfall are uncertain, but can exacerbate floods, soil erosion, and downstream damages. Drier summers will impact chiefly on agriculture and tourism but might also lead to groundwater depletion and deteriorating water supplies, including the quantity and quality of drinking water available for human consumption and livestock.

Risks to Governmental Policy Objectives

18 National priorities, targets, and goals for development will be impacted by climate change, including governmental objectives on the economy, human health, and the environment. Financially and economically, without adequate and timely adaptation measures, climate change could prove disastrous. The Stern Report estimated that GDP could be reduced by as much as 5% per year, up to 20% by the year 2050[9].

Impacts on Forests

19 Forests will be altered by climate change. Increasing temperatures and higher incidences of drought will lead to shifts in species composition at lower altitudes towards more drought-resistant tree species. More frequent and increased drought stress will increase vulnerability to pest and pathogenic damages, as well as damage from fire. The tree-lines will move upwards, and the northern limit of species will migrate northwards. Some species and communities might collapse as a result of these shifts especially where connectivity and ecological corridors are limited. Particularly vulnerable species include spruce at lower altitudes, beech, maple, oak and lime. Detailed information on expected impacts on forests is contained in the CARPIVIA report[10], and the IPCC 4th Assessment Report.

Comment [SN2]: Additional specific par. on river and flash floods and droughts (Henk and Lesya)

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Comment [SN3]: New version of the paragraph (Saskia)

Deleted: *and Seasonal Changes*

Comment [SN4]: New version of the paragraph (Saskia)

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[7] European Commission, 2011, A Roadmap for moving to a competitive low carbon economy in 2050, COM2011 (112 Final), p.14., Brussels, Belgium.

[8] UNFCCC, 2010, Adaptation Assessment, Planning and Practice: An Overview from the Nairobi Work Programme on Impacts, Vulnerability, and Adaptation to Climate Change, 84pp., Bonn, Germany.

[9] Stern, 2006, The Stern Review: The Economics of Climate Change – from the executive Summary of the Stern Review, available online at http://webarchive.nationalarchives.gov.uk/+/http:/www.hm-treasury.gov.uk/sternreview_index.htm

[10] Interim Report CARPIVIA Project (2011) Preliminary Assessment vulnerability & potential adaptation measures, 82pp. Available online at http://www.carpivia.eu/about-CARPIVIA/downloads

Impacts on Agriculture

20 Due to changing precipitation, temperature, and seasonality agriculture will experience significant pressures. The precise impacts are likely to be highly location specific and in some places and for some crops are likely to be positive. In general a shift during spring planting towards winter crops will be possible. Agriculture may also become feasible at higher altitudes, but the effects of elevated CO2 levels in the atmosphere stimulating plant growth are often thwarted by higher temperatures especially in lower altitudes. In some parts of the Carpathians maize and wheat yields will decline, whilst elsewhere sunflower and soya yields might increase due to higher temperatures and migration of these crops' northern limit. Likewise, winter wheat is expected to increase. Unfortunately, vulnerability to pests is predicted to rise, and increasing productivity losses are also expected as a result of soil erosion, groundwater depletion, and extreme weather events. Detailed information on expected impacts on soils and agriculture is contained in the CARPIVIA report, the European Commission's report on climate change and agriculture[11], the CEU/WWF study[12], and the IPCC 4th Assessment Report.

Impacts on Water

21 Both water quantity and water quality, in addition to seasonality, will be affected. Overall, a decline in total annual run-off is predicted for southern and eastern parts of the Danube basin, while western and northern parts might experience increases. Shrinking snow cover and the related water storage will alter flood regimes and increase risk of flood events, increasing their magnitude, intensity and frequency. This in turn will increase soil erosion, pollutant loads and sedimentation rates downstream. Groundwater recharge is likely to be reduced, whilst more frequent droughts in summertime will reduce low flows and result in water shortages. Water temperature in streams, rivers and lakes will increase. Detailed information on expected impacts on water and water management is contained in the CARPIVIA report, the ICPDR Danube Adaptation Study[13], the CEU/WWF study, and the IPCC 4th Assessment Report.

Impacts on Grasslands

22 Grasslands are very important in the Carpathians and could said to be emblematic of the ecoregion. Temperature increases, more extreme droughts and floods, soil erosion, an upward shifting tree line and increased vulnerability to invasive species are all expected to reduce grassland quality and coverage, leading to habitat fragmentation and loss of species. Whilst for the time being arable agricultural intensification and abandonment of traditional grazing practices are a more immediate threat, the longer-term impacts of climate change are expected to be severe. Detailed information on expected impacts on grasslands is contained in the CARPIVIA report, the CEU/WWF study, and the IPCC 4th Assessment Report.

Impacts on Wetlands

23 High altitude wetlands are crucial for both flood management (acting as sponges and thus levelling off flood peaks in winter and low flows in summer) and for biodiversity. Increased air temperatures will lead to drying out of wetland soils through increased evapotranspiration, compounded by higher incidence of drought. Further wetland loss would reduce habitats for the many dependent plant and animal species, and lead to habitat fragmentation which could threaten migratory birds and amphibians at a regional scale. Detailed information on expected impacts on wetlands is contained in the Carpivia report, the ICPDR Danube Adaptation Study, the CEU/WWF study, and the IPCC 4th Assessment Report.

Impacts on Tourism

24 Tourism will experience both positive and negative pressures from climate change. Shorter and milder winters will impact upon snowfall levels meaning that basic conditions for ski-based and other winter sports tourism are less favourable than currently. On the other hand, rising temperatures in summertime elsewhere, for example the Mediterranean, might drive more tourists to the mountains for relatively more comfortable summer vacations. Summer seasons might become longer, winter seasons shorter. Detailed information on expected impacts on tourism is contained in the CARPIVIA report, the CLIMALPTOUR report (focussing on the Alps), the CEU/WWF study, and the IPCC 4th Assessment Report.

Comment [SN5]: Additional paragraph (Lisa)

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Comment [SN6]: Additional sentence on soil degradation (Mr. Abbasov)

Comment [SN7]: Make it consistent with new additional paragraphs (Lesya)

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Comment [SN8]: Sentence on fish migration (Mr. Abbasov)

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[11] AEA Energy & Environment, 2007, Adaptation to Climate Change in the Agricultural Sector, Report to European Commission Directorate-General on Agriculture and Rural Development, Report no. AGRI-2006-G4-05, by AEA Energy & Environment and Universidad de Politecnica de Madrid, 245pp., Madrid, Spain.

[12] CEU, 2008, Impacts of and Adaptation to Climate Change in the Danube-Carpathian Region, Overview study commissioned by the WWF Danube-Carpathian Programme, September 2008, 56pp., Budapest, Hungary.

[13] ICPDR, 2012, Danube Study – Climate Change Adaptation: Study to provide a common and basin-wide understanding towards the development of a Climate Change adaptation strategy in the Danube River Basin, 174pp., by Ludwig-Maximilians University, Munich, Germany.

Priorities for the Signatories: Policy Responses to create a Path to a Climate-Proofed Carpathian Economy

25 Whilst much practical adaptation is done at the farm, business, or household level, policies and funding frameworks can boost or hinder the capacity for adaptation, and as noted by IPCC (2007) there is an important role for public policy in facilitating adaptation to climate change. This includes reducing vulnerability and increasing adaptive capacity of people and infrastructure, providing information on risks for private and public investments and decision-making, and protecting public goods such as habitats, species and culturally important resources.[14]

26 Mainstreaming of climate change adaptation objectives into policy and funding framework is a first step, in order to prevent precious investment being wasted as a result of changing (climatic) baseline conditions when initiatives come onstream. Key economic sectors such as water, agriculture, transport and health require planning against a range of available climate change scenarios in order to test which plans and measures will continue to make technical and financial sense, and thus to decide upon low-risk and no-regret actions. According to IPCC, there is scope for mainstreaming at both national and international levels. The Carpathian Convention process is seen as potentially an ideal vehicle for providing leadership and coordination for developing a united, comprehensive, regional approach to adaptation activities[15].

27 The Carpathian Convention's emphasis on ecosystem management and recognition of the importance of ecological integrity lends itself naturally to a focus on ecosystem-based adaptive approaches to climate change adaptation in the region. As noted by the European Commission, focusing on the resilience of healthy (aquatic) ecosystems to changing and degrading conditions provide a cost-effective and relatively easy way to achieve adaptation[16]. Transnational cooperation for example in the joint spatial planning, designation, and management of expanded protected areas to act as refuges for habitats and species also focusing on habitat connectivity would therefore make both ecological and economic sense for the countries in the region as well as contribute to climate change adaptation.

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28 The added value of transnational cooperation and joint activities is especially strong in terms of planning for climate change adaptation. So much of the predicted impacts of climate change relate to seasonal and geographical shifts. This is true for species and communities (forests, tree-lines, northern limits) as well as for socio-economic aspects (tourist arrivals, tourism seasons). Many of the possible measures are thus best planned using a geographical scale of the ecoregion, rather than the nation-state. Further, many of the tools and capacities required for climate change adaptation which are currently missing, such as the capacity for designation and mapping of future refuge habitats for wetlands and grasslands, synthesised and comparable climatological data, and firm strategies for adaptation on a sector-by-sector basis, are either only possible at the transnational level, or are equally missing in each country, meaning that joint initiatives with external funding could fill these gaps and build cooperative capacity at the same time.

29 In addition, the priority areas of the Carpathian Convention process, as defined by the current Working Groups and the overall Strategic Action Plan for the Carpathian Area[17], now require climate change considerations to be built into future activities of the Working Groups, workplans and decision-making. This is also true of the EU's Strategy for the Danube Region (EUSDR[18]) which is highly relevant for the Carpathian Space especially in terms of policy synergies and funding priorities and opportunities. Indeed, the Strategy's Action Plan foresees cooperation and project-based activities of the Strategy's implementation as an opportunity to put in place the required elements on which to build a Danube Adaptation Strategy in the nearest possible future[19]. Meanwhile, the Danube River Basin Adaptation Strategy, coordinated by ICPDR, will be finalised by the end of 2012.

[14] IPCC, 2007, 4th Assessment Report, Working Group II, Impacts, Adaptation and Vulnerability Section 17.4.1., IPCC, Geneva, Switzerland and New York, USA.

[15] CEU, 2008, Impacts of and Adaptation to Climate Change in the Danube-Carpathian Region, Overview study commissioned by the WWF Danube-Carpathian Programme, September 2008, p.36., Budapest, Hungary.

[16] EU Guidance Document Number 24 – River Basin Management in a Changing Climate, technical report – 2009 – 040, Common Implementation Strategy for the Water Framework Directive (2000/60/EC), p.40, Brussels, Belgium.

[17] UNEP, undated, Strategic Action Plan for the Carpathian Area, 21pp., agreed at COP3, Bratislava, Slovakia.

[18] See http://www.danube-region.eu/pages/what-is-the-eusdr

[19] European Commission Staff Working Document, 2010, Action Plan: Accompanying document to the Communication from the Commission on the European Union Strategy for the Danube Region, p.40., SEC (2010) 1489, Brussels, Belgium.

A Carpathian Space: Naturally Adapting to Changes in the Heart of Europe

30 Examination of the Alpine experience suggests that a designated pan-Convention policy-, funding-coordination and communication context for climate change adaptation would be very valuable. The uniqueness and diversity of the Carpathians, together with the fact that when seen in isolation in each national context, they are normally a relatively small proportion of any given country, lend themselves to joint actions. Many measures, especially „preventative" and „preparatory" ones relating to information gaps, research, and monitoring together with broad capacity-building and awareness-raising, make sense if carried out a broad ecoregional scale. Policies and funding frameworks which reflect this geography would therefore be very useful.

Improving the Information Base and Monitoring

31 Adaptive management[20] requires a good information base and constant updating and review of data. This is especially true of climate change adaptation, which rests first on thorough analysis of the baseline and time-series data in order to set context for future projections and scenarios. The Carpathians are lacking a systematised, easily comparable set of climatological and climate impact related datasets between countries and this requires urgent attention. A common and accessible information system is therefore necessary.

32 Following on from that, a thorough research and literature analysis on climatalogical datasets, information, articles and scientific knowledge on climate change impacts and adaptation in the Carpathians is required, including – crucially – sources of information published or unpublished in local languages, since most relevant data for the Carpathians is in national languages. With this foundation, a logical monitoring system can be established, with various models and examples available as a guide. More information on information, baselines, and monitoring is provided in the IPCC 4th Assessment Report, and the UNFCCC Nairobi Programme Report.

Coordination with the Danube, Tisza, Dniester processes

33 The EU Water Framework Directive (WFD) requires participatory river basin management planning, and although climate change is not explicitly included in its text, the step-wise and cyclical approach of the river basin management planning process makes it well suited to adaptively manage climate change impacts[21]. All Carpathian countries, whether EU Member States or not[22], are implementing this Directive and relevant, associated approaches including the Directive on Floods and the EU Water Scarcity and Droughts Strategy. The Second Cycle of river basin management planning, for implementation over the period 2015-2021, is required to take into account adaptation requirements. Thus opportunities exist to avoid duplication of adaptation measures between the Carpathian and Danube processes and to integrate Carpathian objectives into the Danube river basin management planning.

34 At the international level, there is strong need for liaison therefore with river basin management planning bodies for the major rivers draining from the Carpathians, namely the Danube, Dniester, Tisza and Vistula. Of these, the Danube river basin is the furthest in its preparations, with action coordinated by the ICPDR, detailed analysis already undertaken[23], and now currently in the process of elaborating a Climate Change Adaptation Strategy.

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Comment [SN9]: Suggestion on Carpathian information system (Liliana)

Comment [CZ10]: It should be the Nairobi Work Programme and the UNFCCC secretariat has already produced several reports, technical papers, etc. Which one is it in this case?

Comment [I11]: Answer to this question will be suggested by Saskia

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[20] EU WFD Guidance p.4: According to the Intergovernmental Panel on Climate Change (IPCC), adaptive capacity may be defined as the ability to cope, adapt or recover from the effects of a hazard (in this case, climate change). Examples of steps that can be taken to build adaptive capacity include: increasing knowledge of potential climate risks for individual river basins; strengthening data collection and knowledge exchange amongst key stakeholders; cross-sectoral integration and partnership working; awareness raising education and training.

[21] EU Guidance Document Number 24 – River Basin Management in a Changing Climate, technical report – 2009 – 040, Common Implementation Strategy for the Water Framework Directive (2000/60/EC), p.2, Brussels, Belgium.

[22] Non EU Member States as far as they are part of the Carpathian Region they implement the Directives in the framework of the (sentence will be further developed)

[23] ICPDR has to date conducted a detailed study on climate change and is now putting together a basin-wide strategy, for more details see http://www.icpdr.org/icpdr-pages/climate_adaptation_study.htm

Cross-Cutting Opportunities

35 There are many cross-cutting opportunities for mainstreaming climate change adaptation efforts into the relevant sectors. These include climate-cross compliance, and strategic environmental assessment. At relatively little or even zero cost, governments can boost adaptation policy, practice, and capacity by instigating such cross-cutting measures. Additional (human) capacity in the form of awareness, skills, and training are required. Recommendations for tentative actions of this type are given below in the section "Actions", and in the accompanying Matrix of Measures (Annex: Matrix of Policy Opportunities for Climate Change Adaptation Measures in the Carpathians, which lists possible adaptation measures, policy linkages, actors involved, and forthcoming funding opportunities with timelines of decision-making).

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36 Climate-Cross Compliance is an area of particular promise for climate change adaptation. For several years now agriculture and rural development funding (payments, subsidies, grants) has been contingent upon compliance with EU environmental standards, meaning that in order to be eligible for a particular support, a farm has to demonstrate it is complying with various EU environmental objectives, laws, standards. The same principle[24] can be applied to climate change adaptation, meaning that all EU and national funding (not just agriculture) can be made contingent upon demonstrated consideration and adaptation to climate change variations. This would very rapidly mainstream adaptation measures into many sectors including agriculture, transport, small and medium sized enterprise development, and public sector procurement.

37 Strategic Environmental Assessment (SEA), either alone or as part of a sustainability appraisal, can help to ensure that plans and programmes take full account of climate change issues. The SEA Directive (2001/42/EC) requires identification and evaluation of planned impacts on a number of environmental issues, including climatic factors; and, where appropriate, to put measures in place to minimise and respond to significant impacts identified. Greater use of, and adherence to, SEA processes would therefore "climate-proof" all sectoral plans and investments.

Opportunity for the EU Funds from 2014-2020:
Steer the Region's Development Towards a Climate-Proofed Carpathian Space

38 The path to a green economy and climate-proofing can be smoothed by participation in EU processes and through accessing EU and national funding sources which are increasingly supportive. The one trillion euro budget for 2014-2020 is currently being discussed, and in order to secure a climate-proofed, low carbon future for Europe, will need to focus on two complementary priorities[25]:

- Making intelligent investments in green economic sectors that will be the lead markets of the future including renewable energies, energy savings, sustainable agriculture, and biodiversity management.
- Smarter spending through phasing out of subsidies that are environmentally harmful and economically ineffective. This would maximize win-win opportunities delivering benefits for the environment, jobs and the economy.

39 These investments need to be focussed also on stimulating climate change adaptation. The Carpathian space can be a leading example of ecosystem-based adaptation measures which are beneficial for both people and the environment, whilst at the same time maximising the resilience of the ecoregion to current and future climatic variations. Linking to existing policies and funding opportunities is therefore vital, as is shaping new funding architecture through joint definition of goals, measures, and coordinated actions. This latter will include the development of a new EU Biodiversity Strategy which halts further habitat loss and restores ecosystem

[24] A working definition of cross-compliance in its more usual use, accessed from the European Commission Agriculture and Rural Development webpages: http://ec.europa.eu/agriculture/envir/cross-compliance/index_en.htm as follows: "Cross-compliance is a mechanism that links direct payments to compliance by farmers with basic standards concerning the environment, food safety, animal and plant health and animal welfare, as well as the requirement of maintaining land in good agricultural and environmental condition. Since 2005, all farmers receiving direct payments are subject to compulsory cross-compliance." (Accessed 18 May 2012).

[25] WWF, 2011, WWF priority demands to the Danish Presidency 1 January – 30 June 2012, WWF Position Paper, 12pp., December 2011, Brussels, Belgium.

services, and is part of the Europe 2020 Strategy[26], together with the EU Roadmap on a Resource Efficient Europe, and the EU Adaptation Strategy, currently under preparation.

40 Recommendations for tentative actions of this type are given below in the section "Actions", and in the accompanying Matrix of Measures (Annex: Matrix of Policy Opportunities for Climate Change Adaptation Measures in the Carpathians, which lists possible adaptation measures, policy linkages, actors involved, and forthcoming funding opportunities with timelines of decision-making).

Comment [CZ12]: This wording sounds a bit confusing. The preparation of the EU Adaptation Strategy is discussed but the document itself doesn´t exist yet. (Accepted)

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Actions

Comment [SN13]: Grouping according to policies, institutions and programmes (Henk)

41 The Carpathian Convention responds to the challenge resulting from climate change by developing this strategic agenda. The following tentative actions are provisionally recommended for prioritised implementation and represent initiatives which would act as a practical and inspiring demonstration of adaptation in this region, and at the same time help build vital capacity for further actions. Likely to attract external funding, they are proposed for the Carpathian Convention to discuss and consider for implementation and to build momentum towards the development of a Carpathian Climate Change Adaptation Strategy.

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[Note: these actions can be made more specific or prioritised by the adaptation working group before the next COP]

Designation of a Carpathian Space
Ensure establishment of distinct recognition of the Carpathian region in order to draw attention to, and bring funding opportunities for, the establishment of a climate change adaptation network, to substantiate and provide expert inputs into the work of the Working Groups.

Capacity Building Programme which Draws on, and Enhances, the Connectivity of the Region
Awareness-raising, training, and information exchange programme on climate change adaptation for local authorities, line ministries, and NGOs in the Carpathian region. Will enhance understanding of climate change in the Carpathians, opportunities for ecosystem-based adaptation, funding opportunities, and transnational planning.

Information management and Awareness Raising
Programme of technical assistance, training, and data management hard- and software for local authorities, line ministries, and NGOs, together with stakeholders from the scientific and research community, on climate change data, scenarios, information management risk assessment and mapping to increase analytical and decision-making capacities for climate change adaptation. This could feature an "IPCC-style" process for pulling together scientists and knowledge in the region.

Climate-Proofing of Investments and Climate-Cross Compliance
Workshop series for line ministries of Agriculture, Economy, Spatial Planning, Environment, Energy and Transport, together with local authorities and NGOs, on mainstreaming climate change adaptation into national and regional policy frameworks, including EU funding possibilities both now and in the new, post-2014, budgetary timescale. Example: definition of policy needs to make agriculture and rural development support contingent upon incorporation of climate change adaptation measures into farm business plans, rural development plans, etc. (from CAP, LEADER, agri-environment, direct payments, subsidies and grants). This action could result in guidelines for climate proofing assessments.

Climate-Proofing of infrastructure
Infrastructure improvement, including the re-evaluation of existing (water) infrastructure in the light of its contribution to vulnerability to climate change (e.g. the contribution of river regulation to high and low river flow levels). Assess and promote the location specific contribution of ecosystem-based approaches to climate-proof sustainable development.

Comment [SN14]: Merge it with previous action and include future planned infrastructure (Saskia)

[26] European Commission, 2011, Communication COM(2011) 21 A resource-efficient Europe – Flagship initiative under the Europe 2020 Strategy, p.6., 17pp., 26.1.2011, Brussels, Belgium. Also available online at http://ec.europa.eu/resource-efficient-Europe/pdf/resource_efficient_europe_en.pdf

Development of Forestry Measures for Climate Change Adaptation

Joint development of specific forestry measures (see accompanying Matrix) by the Carpathian Convention Sustainable Forest Management Working Group (Forest WG), the Carpathian Convention Working Group on Conservation and Sustainable Use of Biological and Landscape Diversity (Biodiversity WG) and the Climate Change WG in a trans-national context, to focus on mapping and designation, identification of refuges, cross-border linkages, and management measures such as thinning, fire management, and invasive species management which enhance ecological integrity and climate change adaptation capacity of managed and natural forest ecosystems. In particular, the preparation of 'what if' plans to be implemented after an extreme event, e.g. preparation of a management strategy to be implemented upon significant forest loss after an extreme weather event or logging. In the vicinity of villages in particular direct activities to reduce the impact of (illegal) logging on landslides, erosion and flash floods

Comment [SN15]: Send to Forest WG for comments (ISCC)

Comment [SN16R15]: Include part related to afforestation (Rafal)

Making Biodiversity Management More Dynamic

Joint development of specific conservation and protected areas measures (see Matrix) by the Carpathian Convention Conservation and Sustainable Use of Biological and Landscape Diversity Working Group (Biodiversity WG), the Forest WG, and the Climate Change WG in a trans-national context, to focus on mapping and designation, identification of refuges for wetlands and grasslands, adaptive management best practices, cross-border linkages, and ecological integrity for climate change adaptation. Consider the directing (all) activities to near-nature areas and natural retention areas. Recognising the growing importance of non-native species in ecosystem management.

Comment [SN17]: Send to Biodiversity WG (ISCC)

Comment [SN18]: Include additional action on valuation of ecosystem services and modify previous and subsequent actions accordingly (Henk)

Promote flexible financial support mechanisms for adaptation

Financial resources are limited. A key action is to create flexible and equitable financial instruments that facilitate benefit- and burden-sharing, social learning and that support a diverse set of potentially better-adapted new activities rather than compensate for climate impacts on existing activities. The perception of fair sharing of costs and benefits between actors is central to the successful implementation of adaptation and has to be addressed in adaptation planning. In the region, European and/or national government financial support is often sought for to implement adaptation. However, mainstreaming adaptation complicates existing relations with donors or subsidies. The European agro-environmental schemes for instance are not designed for inter-annual land use change depending on water availability. Thus the effectiveness of European funding schemes has to be re-evaluated in supporting adaptation. Creating markets for adaptation is another key challenge (e.g. encouraging cities and industries to buy in on upstream flood water storage and floodplain management). Opportunities exist for public-private partnerships in which marketable products obtain additional public support in exchange for providing social and environmental services that support adaptation. This action supports economic incentives including pricing and taxation of water resources, micro-grants (e.g. to diversify production systems especially in low altitude ski-resorts), payments for ecosystem services, and water allocation schemes.

Capacity-Building on Proposal-Writing for Adaptation Funding

Establishment of a small, multi-disciplinary, international team or network which works with local authorities and NGOs and delivers technical assistance on sourcing funds for climate change adaptation measures.

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Comment [SN19]: Additional action on Climate Change WG (Henk)

Other measures are listed in the attached Matrix.

ENDS.....