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ADAPTATION OF EUROPEAN FORESTS TO CLIMATE CHANGE

Summary

This paper sets out the policy issues related to forests and climate change adaptation in Europe. It presents the state of knowledge on climate change impacts and adaptation responses in European forests, the status of European adaptation policies, and regional and international co-operation on adaptation. A list of questions is provided to facilitate discussion.

INTRODUCTION

1. Among the potential impacts of climate change in Europe, the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)[1] indicates the most probable as increased flash flooding and coastal flooding throughout the region, more frequent and prolonged droughts and increased risk of wildfires. Mean annual precipitation is projected to increase in the North and decrease in the South. Significantly warmer winters in the North and summers in southern and central Europe are expected, and southern and central Europe are likely to experience water stress.

2. The CPF Global Forest Expert Panels, in its global assessment on adaptation of forests and people to climate change,[2] analyzes different future scenarios for forests. Even an optimistic scenario predicts that the impact on the temperate forests of Europe will be negative and droughts will become more intense and frequent in southern Europe and the Mediterranean, increasing the risk of wild fires and susceptibility to forest pests and diseases. Forest productivity in the semi-arid forests of southern Europe will decline and species composition will be significantly altered.

1 IPCC (2007) Fourth Assessment Report, Summary.

2 Seppälä R, Buck A, Katila P (eds) (2009) Adaptation of Forests and People to Climate Change – A Global Assessment Report. IUFRO World Series Volume 22. IUFRO, Helsinki.

In some cases, forest systems may be replaced by grasslands. Northern temperate and boreal forests are expected to experience increased productivity, but at the same time to be subject to higher risk of fires, insects and diseases.

3. The adaptive capacity of forests is relatively large in the boreal and the temperate oceanic regions. However, adaptive capacities could be constrained in the temperate continental region by socio-economic factors and in the Mediterranean region where large areas of forest are either unmanaged or extensively managed[3].

POLICIES AND ACTIONS FOR ADAPTATION

4. Continued and new efforts to implement policies and practices in sustainable forest management are needed both to reduce non-climatic stresses[4] and to reduce forests' vulnerability to climate change. Actions outside the sector (e.g. reducing pollution) will also contribute to reduced susceptibility of forests to climate change[3,5]. Cross sectoral cooperation and dialogue is thus crucial to concerted effort and coordinated action in climate change adaptation. Climate change adaptation will require adjustments to forest policies and management practices. An assessment of the need for policy adjustments, with stakeholders and with a common understanding of climate change impacts and effective adaptation measures will require the attention and investment of governments and administrations. In addition, new research is needed along with additional training and capacity strengthening, which will require additional financial investments in the sector.

5. Several European countries have developed strategies for adaptation to climate change. A 2008 background study[3] for the EU Forest Action Plan concluded that, of 27 countries, 17 had developed a national adaptation strategy that included forest issues. The review of on-going and planned adaptation strategies revealed similar motives for adaptation, the main ones being to minimize impacts of disturbances, ensure wood production and ensure ecosystem services. The Commission of the European Communities' 2007 Green Paper[6] on adapting to climate change in Europe recognized that European policies may need adjustment to address adaptation needs. It calls for climate change adaptation to be integrated into existing and future legislation, policy responses and funding programs. With the recent 2010 Green Paper on Preparing Forests for Climate Change, the Commission of the European Communities has launched a debate with the aim to inform and guide the Commission on taking additional action to prepare forest policies for climate change. Further, the aim is to provide elements for a possible update of the EU Forestry Strategy[7].

6. In 2009, IUFRO examined adaptation measures taken by seven European countries (Austria, Finland, France, Germany, Russia, Spain and Sweden) and the United States and

3 Lindner et.al. (2008) Impacts of Climate Change on European Forests and Options for Adaptation. European Forest Institute, Joensuu, Finland.

4 Causes of forest degradation not associated with a changing climate, e.g. over harvesting, poor timber harvesting practices, overgrazing, wild fires, etc.

5 Swedish University of Agricultural Sciences, Food and Agriculture Organization and International Union of Forest Research Organizations (2008) Proceedings of the International Conference on Adaptation of Forests and Forest Management to Changing Climate with Emphasis on Forest Health: A review of science, policies and practices. SLU, Umea, Sweden.

6 Commission of the European Communities (2007) Green Paper – Adapting to climate change in Europe – options for EU action - COM(2007) 354 final. CEC, Brussels.

7 Commission of the European Communities (2010) Green Paper – Forest protection and information in the EU: Preparing forests for climate change.

Canada[8]. The study reached the same conclusion as the CEC Green Paper, namely that most countries appear to be in the early stages of adaptation, with a strong concentration on research activities and on programmes to aid in coordination of agency responses. It also found that, despite the important potential for using economic instruments to encourage adaptation measures particularly by the private sector, in general little emphasis is put on utilizing such measures in adaptation policy work.

7. The 2009 IUFRO study noted a tendency toward responses to climate change that were reactive rather than based on strategies or policy directives. The 2008 international conference on forests and climate change adaptation held in Umea, Sweden[5] concluded that although reactive management is sometimes the only possible option, carefully planned adaptation is usually the most productive pathway. Difficulties in making long-term predictions of the impacts of climate change, however, limit the ability to make policy and management decisions for forestry adaptation in the long term. This underlines the importance to climate change adaptation of institutional arrangements that support effective decision-making and action at local level. Furthermore, it highlights the importance of building on local knowledge and experiences, as in many cases forest managers may be moving ahead with adaptation mechanisms in advance of formal policy change[9].

8. Among the forest management measures that countries could take to facilitate climate change adaptation are: favouring forest varieties and species that are adapted or adaptable to new climatic conditions; implementing forest management practices that reduce vulnerability to both incremental climate change and to extreme events such as storms and fires; intensifying fire management systems, and undertaking various in-situ and ex-situ conservation measures and introducing spatial plans and corridors to help species migrate. Forest industries will also have to adjust to changes in wood supply and demand driven directly or indirectly by climate change. The CEC's Green Paper[6] concludes that under a changing climate in Europe, forests' role in providing ecosystem services (i.a. protection of water courses flood management, maintenance and restoration of multifunctional landscapes, and biodiversity conservation) will further gain importance and require policy and management changes.

9. Throughout the world, it is important to support and explore synergies between adaptation and mitigation. This is especially evident in forestry and land management as increased resilience of forests and trees to climate change will help to maintain forests' mitigation capacity. Forest adaptation measures can also help reduce climate change impacts on vulnerable people, who might otherwise increase pressure on forests for land or products and reduce their mitigation potential. Mitigation measures that improve sustainable use of forests can also enhance adaptive capacity.

REGIONAL COOPERATION AND KNOWLEDGE SHARING

10. Knowledge sharing, communication and co-operation among European countries on actions relevant to climate change adaptation are well established in many areas. Examples include the extensive European research project on wild fires - Fire Paradox; the European Forest Genetic Resources (EUFORGEN) programme and Evolution of Trees as Drivers of Terrestrial Biodiversity (EVOLTREE) network's efforts to link genetic resources and adaptation; and the EC's work on modernizing the plant health regime, which will be useful in addressing pest and disease issues in the context of climate change. The existing networks and programmes should be used and expanded with the intent to support adaptation. Continued and strengthened monitoring

8 Chris Eastaugh, et.al. (2009) Forest Agencies' Early Adaptations to Climate Change IUFRO Occasional paper 23. International Union of Forest Research Organisations, Vienna.

9 Keskitalo ECH (2008) Vulnerability and adaptive capacity in forestry in northern Europe: a Swedish case study. Climate Change 87.

of forest health, which is absolutely crucial for quickly identifying outbreaks, new pests and diseases and invasive species will also be needed.

11. Mechanisms that facilitate the sharing knowledge, communication and co-operation among European countries on climate change adaptation policies could be further strengthened. Lessons could be generated from countries' diverse approaches to adaptation. Furthermore, information and adaptation approaches in the region could be incorporated in decision support systems, helping foresters to identify the parameters responsible for increased forest susceptibility to certain damaging agents and to gain awareness of opportunities for and limits of damage prevention.

ROLE OF EUROPE INTERNATIONALLY

12. As Parties to UNFCCC, European countries are committed to providing developing countries with financial and technical support for climate change adaptation and mitigation actions. Key areas of support for adaptation will include: 1) integrating climate change into national forest programmes, including stakeholder involvement; 2) strengthening capacity for adaptation policy formulation, planning and field implementation; 3) monitoring and assessment of progress and impacts of adaptation measures.

13. Parties to UNFCCC recognize that developing countries, particularly the most vulnerable, will require new and additional financial assistance and technical and capacity building support from industrialized countries in order to undertake actions for climate change adaptation. This was clearly stated in the Bali Action plan, and was further reinforced in the negotiations at COP15. The Copenhagen Accord recognized "the critical impacts of climate change and the potential impacts of response measures on countries particularly vulnerable to its adverse effects and stress the need to establish a comprehensive adaptation programme including international support". The Accord goes on to say, "The collective commitment by developed countries is to provide new and additional resources, including forestry and investments through international institutions, approaching USD 30 billion for the period 2010-2012 with balanced allocation between adaptation and mitigation" and "developed countries commit to a goal of mobilizing jointly USD 100 billion dollars a year by 2020 to address the needs of developing countries". Apart from the Copenhagen Accord the issue of international support to developing countries is treated in the Ad Hoc Working Group on Long-term Cooperative Action under the Convention which will continue the work on specifying support on adaptation.

14. European countries will need to examine their development assistance programmes and likely make adjustments in the financing levels and possibly structures for channeling assistance to developing countries. Furthermore, they are likely to need to make adjustments in response to the rapidly changing situation relevant to financing for adaptation, including the fifth replenishment of GEF, World Bank's Forest Investment Programme, UNFCCC's Adaptation Fund, and the Copenhagen Green Climate Change Fund proposed in the Copenhagen Accord noted by UNFCCC's Fifteenth Session of the Conference of the Parties in December 2009.

CONCLUSIONS

15. National and regional strategies for adaptation need to be developed and existing strategies must be adjusted to account for medium to long term changes driven by climate change. They should include synergies between adaptation and mitigation, a flexible institutional approach and financial support for adaptation.

16. Forestry institutions need to be fully engaged in national and international discussions and co-operation about forests and climate change adaptation, so that climate change considerations are fully integrated into forest sector policy making.

17. The uncertainties surrounding predictions of future changes in Europe's climate limits the ability to take sound anticipatory measures for adaptation in the forest sector. This highlights the need for measures in forest management that have a broad potential for minimizing the impacts of climate change.

18. European members of the EFC, as Parties to UNFCCC, have committed themselves to assisting developing countries meet the challenges of climate change.

POINTS FOR DISCUSSION

- What are countries' needs related to forest monitoring, research on climate change impacts, vulnerability and adaptation; to be able to design and implement policies and field actions for forests and climate change adaptation? What should be the role of regional cooperation in addressing these needs?

- How might regional cooperation contribute to sharing of experiences in adaptation at field level and in adjusting forest policies, legislation and institutions for more effective climate change responses. What roles can EFC and other regional mechanisms play? This could comprise compiling information and sharing experiences on current efforts by European countries on climate change adaptation at the policy and forest management level, possibly the development of guidance on forests and climate change adaptation for the pan-European countries.

- What measures can European countries take to ensure that their financial and technical development assistance is appropriately directed and well coordinated and that the absorptive capacity of developing countries is taken into consideration?