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GENEVA TIMBER AND FOREST DISCUSSION PAPER 54

THE FOREST SECTOR IN THE GREEN ECONOMY

UNITED NATIONS

Note

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Abstract

The Forest Sector in the Green Economy sums up key elements and conclusions of the presentations and discussions that took place during the Policy Forum "The Forest Sector in the Green economy" held on 15 October 2009 during the UNECE Timber Committee's annual session. This Geneva Timber and Forest Discussion Paper captures the essence of the debates with summaries and references from all available presentations.

Keywords

Green economy, sustainable forest management, green building, green jobs, wood energy, environmental services, communication, economic and financial crisis.

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Preface

Mr. Ban Ki-moon, Secretary-General of the United Nations stated, "The commingled problems of climate change, economic growth and the environment suggest their own solution. Only sustainable development—a global embrace of green growth—offers the world, rich nations as well as poor, an enduring prospect of long-term social well-being and prosperity". His words inspired the United Nations Economic Commission for Europe (UNECE) as well as all United Nations agencies to achieve this important goal.

At its annual Commission session in 2009, the UNECE considered all three aspects of the problem, i.e. climate change and the environment in the midst of the worst economic downturn since the Great Depression. For its part the UNECE/FAO Timber Section looked at these problems from the viewpoint of the forest sector during the UNECE Timber Committee week in Geneva, 12-16 October 2009.

The week began with a workshop on "Responding to climate change: wood's place in a global approach to green building". That was followed by the annual Timber Committee Market Discussions on the theme of the "UNECE region's forest products markets in a global economic crisis". Results of both were then incorporated into the UNECE/FAO Policy Forum on the "Forest sector and the green economy". The Timber Committee Week benefited from a wide range of delegates from Government, industry and academia.

The forest sector has a key role to play in the transition towards a greener and more sustainable economy – this was the consensus of the Forum. Forestry lies at the heart of this "green" movement. Sustainably managed forests play an essential role in the carbon cycle, releasing oxygen, while locking up carbon dioxide in the trees and soil. The Forum also noted that forests provide essential environmental and social values and services, beyond their contribution as a source of wood, such as biodiversity conservation; protection against erosion; watershed protection and employment in often fragile rural areas.

The forest sector could play a still more significant role if governments and others seize the opportunity to use wood based products for green construction and furniture wherever possible and take measures to support the wider adoption of modern wood energy. The potential is there for us to realize.

It is my conviction that pursuing and amplifying the efforts undertaken in the forestry sector within UNECE region to face the coming challenges of the age of "green economics" must be a key strategic objective. The UNECE/FAO Timber Section for its part stands ready to contribute fully to supporting these goals.

On behalf of the UNECE, I recommend this *Geneva Timber and Forest Discussion Paper* to our member governments and other stakeholders, in the expectation that it will be of assistance to the successful development of soundly based policies. I would like to express my sincere appreciation to all the speakers and participants, and to the secretariat, for the Forum and this publication.

Ján Kubiš

Executive Secretary

United Nations Economic Commission for Europe

C O N T E N T S

Acknowledgements

I would like to express, on behalf of the UNECE/FAO Timber Section, my sincere appreciation to Ms. Eve Charles and Ms. Marion Briens for the main organization of the Policy Forum: “Forest sector in a green economy”. They also prepared the background paper for the Forum. I also wish to thank Mr. Ed Pepke, Acting Chief, Timber Section, for his in-depth review of this Discussion Paper.

I also warmly thank Mr. Ingwald Gschwandtl, Director, Forest Policy and Forest Information, at the Ministry of Agriculture, Forestry, Environment and Water Management of Austria and Leader of the UNECE/FAO Forest Communicators' Network for chairing of the event and making a presentation.

I also thank the speakers at the Policy Forum (in order of presentation):

Dr. David Cleaves, Associate Deputy Chief, Research and Development, USDA Forest Service, United States of America

Ms. Laura Altinger, Economic Affairs Officer, Environment, Housing and Land Management Division UNECE

Mr. Peter Poschen, Senior Policy Specialist, International Labour Organization

Mr. Peter Wooders, Senior Economist, Climate Change, Energy and Trade, International Institute for Sustainable Development

Prof. Richard Vlosky, Director and Professor, Louisiana State University

Prof. Andre Faaij, Professor, Energy System Analysis, Copernicus Institute, Utrecht University

Mr. Michael Sutter, Österreichische Bundesforste

Mr. John Guérin, European Director, Weyerhaeuser Products Limited

Mr. Martin Lindell, Executive Director, European State Forest Association

Mr. Robert Ramsay, Wood and Forestry Director, Building and Wood Workers’International

Mr. Bernard de Galembert, Forest and Research Director, Confederation of European Paper Industries

Mr. Morten Thoroe, Secretary General, Confederation of European Forest Owners

Mr. Edgar Kastenholz, Secretariat General, European Network of Forest Entrepreneurs

Mr. Duncan Pollard, Director, Conservation Practice & Policy, World Wildlife Fund

Mr. Gianluca Sambucini, Economic Affairs Officer, Sustainable Energy Division, UNECE

Finally, I wish to thank all the delegates to the UNECE Timber Committee session who contributed to a lively debate at the Policy Forum.

Cédric Pène, Editor

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1. PURPOSE OF THE DISCUSSION PAPER AND OVERVIEW OF THE POLICY FORUM

This Geneva Timber and Forest Discussion Paper captures the essence of the presentations and discussions at the UNECE/FAO Policy Forum, "The Forest Sector in the Green Economy" held on 15 October 2009 during the course of the 67th session of the UNECE Timber Committee in Geneva.

It sums up key elements of the presentations and discussions that took place between various stakeholders on the possible contribution of the forest sector to a greener more environmentally oriented economy and inform member States and stakeholders of the outcome of the day's discussion.

The Discussion Paper complements the Background Paper entitled "The Forest Sector in the Green Economy" issued by the UNECE/FAO Timber Section before the Policy Forum (cf. annex I) but it is not an exhaustive description of the presentations and subsequent discussions. It should rather be seen as a synthesis of the discussions. For detailed information on the presentations and conclusions of the Policy Forum please refer to the UNECE Timber Committee and the European Forestry Commission website at http://timber.unece.org/index.php?id=2&unece_menu_id=1 (cf. annex II).

This Discussion Paper should also be read in the context of previous papers produced by the UNECE/FAO Timber Section and meetings dedicated to related issues, notably the workshop organized by the Team of Specialists on Forest products Markets and Marketing on "Responding to climate change: Wood's place in a global approach to green building" organized on 12 October 2009 during the UNECE Timber Committee week (http://timber.unece.org/index.php?id=125).

2. TOWARDS A GREEN ECONOMY IN THE FINANCIAL AND ECONOMIC CRISIS

The financial crisis which developed in autumn 2008 and the subsequent economic consequences have led to a fundamental shift within forestry and the forest industry sectors, the effects of which are being felt through the entire chain from the forest to the markets. Never since the first oil crisis in the 1970s have the forest products markets experienced such a downturn. In response, some countries have implemented economic stimulus packages to tackle the crisis and to promote a move towards a greener economy. Even though a greening of the global economy, aiming at higher sustainability through the reduction of negative impacts on the environment and climate change, was already under way before the economic crisis, the crisis was seen as an incentive to some Governments to accelerate the process and earmark elements of their stimulus packages for green investment.

2.1 Green economy: the terminology

The concept of green economy was introduced by Ms. Laura Altinger, from the UNECE Environment, Housing and Land Management Division, with a reference to the Global Green New Deal launched by the United Nations Environment Programme in October 2008. The New Deal describes the greening of the economy as the "process of reconfiguring businesses and infrastructure to deliver better returns on natural, human and economic capital investments, while at the same time reducing greenhouse gas emissions, extracting and using less natural resources, creating less waste and reducing social disparities".

Ms. Altinger recalled that the main objectives of the Global Green New Deal are to reduce carbon dependency and ecosystem degradation, revive world economy, promoting sustainable inclusive growth and create new jobs. More specifically, she stated that five priority areas for investment were identified: (a) energy efficiency in buildings; (b) renewable energy technologies; (c) sustainable transport technologies; (d) ecological infrastructure, including forests and (e) sustainable agriculture, including organic production.

The kinship with the Brundtland Report definition of sustainable development ("development which meets the needs of the present without compromising the ability of future generations to meet their own needs.") and its three components, economic, social and environmental was noted. Some participants, such as Mr. Bernard de Galembert, from the Confederation of European Paper Industry (CEPI) remarked that the notion of "Green economy" was maybe just a new way to promote "sustainable development".

Mr. Duncan Pollard, from the World Wildlife Fund (WWF), identified three key imperatives that require especial consideration in moving towards a greener economy. These were biocapacity (defined as the amount of biologically productive area - cropland, pasture, forest, and fisheries - that is available to meet humanity's needs), water and energy. All three require an assessment of the ecological footprint when determining how to use these resources, in order to ensure ongoing sustainability. According to Mr. Pollard, building in resilience to climate change is becoming a critical issue. In the case of biocapacity, the challenge will be how to find a balance between food, fibre and fuel production which can meet people's needs without compromising the ability of the planet to absorb safely the consequent carbon emissions generated from human activity.

2.2 Green economy and stimulus packages to address the financial and economic crisis

In order to face the financial crisis and its economic consequences, several Governments have adopted stimulus packages. Whether or not these could be considered as part of "green new deals" as defined above has been a topical issue during this period of time.

Several speakers noted that these stimulus packages were only partly green with only about 15% of the overall amounts that could be considered genuinely green, and large variations from one country to the other. According to figures presented by Ms. Altinger, Mr. Pollard or Mr. Peter Poschen from the International Labour Organization (ILO) quoting a report from the HSBC Bank, the Republic of Korea ranked first with 80% of its stimulus package considered as green, followed by China with almost 40% and France with 20%.

The forest sector was seriously affected by the global economic crisis which developed in autumn 2008, explained Prof. Richard Vlosky from Louisiana Forest Products Development Center during his intervention. The housing collapse in the United States resulted in a sharp fall in consumption of softwood sawnwood and oriented strand board production in North America. Prof. Vlosky was sceptical about the prospect of a quick recovery for the sector.

Despite these difficulties, the forest sector did not benefit widely from the green stimulus packages introduced by Governments to boost their weakened economies. As an example, Mr. Poschen, and Dr. David Cleaves from the Research and Development Department of the United States Forest Service, mentioned the American Recovery and Reinvestment Act of 2009, which directed only $1.15 billion towards capital and maintenance improvement in forest areas and wild land fire management out of a total $787 billion provided by the Government. However, both speakers noted that the sector might benefit from these stimulus packages indirectly; for instance, through the support of the housing sector or renewable energy. In the case of the United States, it was also mentioned that these figures did not take into account some projects directly funded at the state level.

2.3 Summary of the discussions

Following these exchanges of views, it became clear that a distinction ought to be made between two phenomena:

- The short-term crisis following the global recession which developed in autumn 2008 which is posing new challenges to the sector.

- The long-term policies towards a green economy, the impetus for which had begun before the crisis, according to Mr. Martin Lindell from European State Forest Association (EUSTAFOR), may well have a strong and lasting effect on the forest sector, notably by bringing new market opportunities.

It was recalled by Dr. Cleaves that the forest sector had already responded to major shocks in the past like reduced public harvest in the 1980s, paper recycling in the 1990s, globalization of forest products markets, change in type of ownership of the forest land.

3. FOREST SECTOR CONTRIBUTION TO THE GREEN ECONOMY IN THE CONTEXT OF CLIMATE CHANGE

The wood and forestry sectors can make a significant contribution towards meeting green economy objectives, linked to climate change policies, mainly through the abatement of greenhouse gas emissions and expansion of renewable energy objectives. There are three main routes by which the wood and forestry sectors can contribute: biomass energy and green infrastructure and building which are related to forest products, the role of forest resources as carbon sinks, which is related to resources.

3.1 Biomass energy

Today, wood energy represents the most important source of bio energy in most countries. Thanks to the implementation of policies aimed at increasing the share of renewable energy, especially when fossil fuel prices are high, wood energy is seen as a growing opportunity for wood utilization.

Mr. Michael Sutter from Osterreichische Bundesforste AG described the strategy his company had followed since 2000 to diversify into renewable energy. This was primarily bioenergy based on its ability to guarantee woody biomass supply due to its dominant position in terms of land ownership, but included small hydro power plants and wind parks. He noted that all renewable energies sources, including bioenergy, depended considerably on financial incentives provided by public authorities.

Mr. Gianluca Sambucini described how the Sustainable Energy Division of UNECE was promoting energy efficiency and renewable energy, including wood energy.

3.2 Green infrastructure and building

As noted by Ms. Altinger and Prof. Vlosky, an increased use of renewable biomaterials in infrastructures and buildings can be seen as a positive contribution to climate change mitigation since their utilization can minimize the use of non renewable energy. Renewable biomaterials have additional benefit as they sequestrate carbon during their life time.

3.3 Role of forest resources as carbon sinks

Several speakers, including Dr. Cleaves and Ms. Altinger noted that climate change mitigation objectives have recognized the potential that forests offer as a carbon sink and therefore the necessity of preserving and expanding (when possible) the area of forest.

4. FOREST RESOURCE MANAGEMENT

Mr. Poschen, as well as Mr. Peter Wooders from the International Institute for Sustainable Development (IISD) and Mr. Martin Lindell noted that the role of wood products and forest resource in mitigating climate change and contributing to a green economy was linked to the way forest was being managed.

The concept of sustainable management of forest resources is anything but new; it has been familiar to forester for centuries. But sustainable forest management (SFM) becomes even more critical now that

forests are recognized for their crucial role as carbon sinks. This implies inter alia that forest resources must be preserved if not developed, protected against excessive exploitation and against other disturbances of a biotic and abiotic nature. It is all the more important as climate change might bring more frequent and intense threats in the form of fires, insect invasions and storms, as noted by Mr. Sutter. In this sense, sustainable forest management is also a tool for the forest sector to adapt to climate change. The forest sector must also contribute to climate change adaptation, given its various positive externalities, such as its role in water resources protection and many other environmental services.

Certification schemes ensuring the proper management of forest resources are useful tools. During the discussions, it was noted, however, that the cost of certification can be a possible limiting factor for small forest owners who cannot afford certification rates and therefore have to regroup themselves.

Mr. John Guerin, European Director, Weyerhaeuser Products Limited, described the strategy of his company in Uruguay. It consists in developing plantations of eucalyptus respecting sustainable forest management standards, including ensuring high social standards for their workers. Owing to the good growing conditions of trees and fast growing hybrids in that region and thanks to the characteristics of this type of wood, this company expects to be able to develop a sustainable and economically viable alternative to tropical plywood.

5. NEW WOOD PRODUCTS MARKETS AND NEW COMPETITION

The evolving market for wood, with rising demand for wood energy as well as possible market growth in the use of wood in construction in the context of green building, may well result in new competitive relationships.

5.1 Competition between wood energy and traditional industrial uses

Dr. Cleaves noted that the increasing demand for wood energy may trigger competition with “traditional users” such as the paper and paperboard industries. It will create new demand in addition to volumes used by traditional industries. It should therefore have an impact on wood prices in some regions and for certain categories of wood products, such as co-products from the wood-processing industry and lower quality wood. Some representatives of traditional industries consider that the subsidies granted directly or indirectly for wood energy create unfair competition.

Dr. Cleaves noted that this may be the case particularly if the ownership of forest land shifts from a traditional “vertical approach”, where processing companies own forest land directly, to new types of owner, including real estate companies, which will, understandably, opt for the most profitable use of their land rather than limit themselves to any specific activity.

Mr. Bernard de Galembert, from the Confederation of European Paper Industries (CEPI), made the case for “traditional users” of wood, e.g. the paper industry, to be viewed as “green” given that they use renewable raw material, have access to forest certification schemes and restrict energy consumption by converting some of their co-products into energy on-site, which, in turn, contributes to reducing emissions in general. He also noted that his industry has committed to an increase of its recycling rate.

Mr. de Galembert accepted that progress is needed in the paper industry to make more effective use of all the resources that trees provide, including the various co-products that are generated during wood processing. The idea would be to move from the traditional industry towards a “tree farm model” allowing for the use of each basic biomass feedstocks coming from the trees (starch, cellulose, lignin) to produce intermediate platforms (e.g. sugars) and then a succession of more elaborated combinations from secondary chemicals to intermediates and final products or uses.

5.2 Competition between wood energy and other sources of energy

According to Dr. Cleaves and Prof. Andre Faaj of the Copernicus Institute (Utrecht University), in a context of high interest in renewable energy, and with the prospect of technological advancement enabling more efficient use and possibly easier transport of wood energy, the question of the place of wood energy in the global energy market should become a more important issue. In this situation, how the price of wood energy compares with the prices of competing energy sources is critical.

According to Prof. Faaj, biomass energy can play a significant role in future energy supply. Second generation biofuels could be competitive with oil in a future with oil prices ranging between $70 and $100 per barrel. In common with other perennial crops, wood energy has a better public image than biofuels derived from annual crops and especially palm oil, which has been accused of contributing to deforestation, reducing food supply and subsequently driving up food prices.

5.3 Competition between wood in green building and other building materials

The competition between different building materials for construction is not new. However, the increasing profile of green building induces a re-evaluation of different products to demonstrate their comparative advantages and to improve their performance. This issue was discussed in detail during the workshop organized by the Team of Specialists on Forest products Markets and Marketing on "Responding to climate change: Wood's place in a global approach to green building" organized on 12 October 2009 during the UNECE Timber Committee week. Participants noted that existing green building rating systems lack a scientific life-cycle assessment basis. Participants also mentioned the importance of the question of disposal of wood disposal at the end of a product life.

6. REGULATORY FRAMEWORK IN THE CONTEXT OF CLIMATE CHANGE

The future of the forest sector will depend on the development and implementation of policy measures at international and regional levels. In this respect, participants agreed on several points.

6.1 The key role of the climate change negotiations

The outcome of the negotiations on a post-2012 Kyoto successor regime under the United Nations Framework Convention on Climate Change (UNFCCC) and notably the follow-up to the Copenhagen Conference on Climate Change will be crucial. It will set the global framework and level of pressure on each and every country for implementing their climate change mitigation policies, including emission reduction targets. With this in mind, some participants made more specifically reference to the US "cap and trade" mechanism[1] and to various targets in terms of renewable energy and/or biofuel incorporation in the European Union.

Participants noted during the discussions that some specific issues were of particular relevance for the wood and forestry sector. In addition to Reducing Emissions from Deforestation and Forest Degradation (REDD) schemes, this is for example the case for the way "carbon credit" might be awarded to forest owners or for the opportunity to take into account the carbon stored in wood products.

6.2 Different types of policy measures and instruments

Mr. Wooders described the "five big ideas" developed in the current drafting process of the United Nations Environment Programme *Green Economy* report, which focuses on medium-term actions, without fundamental changes to economic system. These five key areas for possible actions are: (a) subsidy

[1] Under such a system, the federal Government would establish a cap on total emissions and either assign or auction carbon dioxide and other greenhouse gas permits. Industrial holders of rights could emit annually at the specified level and/or buy and sell permits.

reforms; (b) green tax shift and permit; (c) incentives through sustainable public procurement rules; (d) better integration of sustainable development in trade agreements; and (e) positive support through direct financial assistance. Governments should design the best possible mix and balance between these different types of policies, taking into account local conditions and the specificities of each situation.

Ms. Altinger mentioned two possible options to be considered: (a) setting building standards that require the inclusion of wood products in green building and (b) incentives to ensure an attractive price for energy from wood. Mr. Morten Thoroe, Confederation of European Forest Owners (CEPF), called for increased public investment in research and innovation to develop new technologies and products. He also called for an equitable treatment of renewable energy from different sources (notably in terms of subsidies) and for procurement policies that treat wood in the same manner as other products i.e. not in a way that would de facto discriminate against wood products.

Prof. Vlosky noted the need for better coordination, citing the profusion of green building standards that simply created confusion among stakeholders. Prof. Faaij made the same kind of assessment on certification standards for sustainable biomass and biofuels, for which there are approximately 65 separate schemes.

Mr. Wooders recognized the importance of certification schemes as a possible tool to promote "sustainable management" of forest resources. But he thought sustainability indicators should be kept as simple as possible.

More generally, it appeared from the discussions that it will be necessary to find the right balance between what should be dealt with by markets and what requires Government involvement. This raises in particular the issue of the extent to which the private sector will need public incentives to foster some green activities. This question of respective roles of private and public players is also relevant to the issue of certification.

6.3 A need to ensure intra- and cross sectoral coherency between policies

The need to ensure intra- and cross-sectoral coherency between policies that promote a green economy was mentioned by participants and put in the Chair's conclusions. For example, Mr. Thoroe asked for a similar and equitable treatment of all renewable energy sources in terms of subsidies and research and development efforts.

As the new challenges ahead are by nature complex, they will need a global and coordinated response. Some participants noted that the forestry sector needs in this context a more prominent place in the decision-making process, whether at national or international level.

7. CONTRIBUTION TOWARDS A GREEN ECONOMY IS NOT ONLY ABOUT CLIMATE CHANGE

As stated by many participants, climate change policy is not the only field where the forest sector can contribute to a "green economy".

First, forestry can contribute to the conservation of natural resources and to their sustainable growth in other important ways:

- Through the protection and delivery of water resources;

- Through the protection and enhancement of biodiversity.

The introduction of schemes of payments for environmental services may be one option to develop in order to help promote and better value these functions.

Second, Mr. Robert Ramsay of Building and Wood Workers' International, and Mr. Poschen reminded participants that a green economy also means reducing social disparities, which implies that green jobs in

the wood and forestry sector require adequate social protection, appropriate working conditions, respect of rights of workers, including participation and dialogue.

Mr. Poschen recalled that whether the forest is managed in a sustainable way can be considered today as a reasonable indicator of whether a job in the forestry sector is "green" or not, in that it meets the objectives of a green economy. According to a recent survey, the forestry sector accounted for 2% of total direct employment in the European Union but only 0.7% of total green employment.

He said that in the long term, ILO estimates that the number of jobs linked directly or indirectly to all forms of renewable energy might grow from 2.6 million in 2006 to 30 million in 2030. However, as mentioned during discussions, the developments linked to the green economy will certainly not be sufficient to change the long-term trend of employment reduction in the wood and forestry sector due to the large and continuous gains of productivity.

In the same vein, Mr. Edgar Kastenholtz, on behalf of the European Network of Forest Entrepreneurs (ENFE), emphasized the importance of ensuring an adequate level of reward for services provided by forest entrepreneurs in order to ensure decent wages and generate investments. He noted that the current crisis had caused a drastic fall in prices for services. Here again, good practice guides and certification schemes were seen as promising tools.

8. A COMPLEX ISSUE WHICH REQUIRES CLEAR COMMUNICATION

In his presentation, Mr. Ingwald Gschwandtl, Director, Forest Policy and Forest Information, Ministry of Agriculture, Forestry, Environment and Water Management of Austria and Leader of the UNECE/FAO Forest Communicators' Network, stressed the importance of communication for promoting wood and forestry's possible contribution to the green economy.

A recent public survey in European Union countries had shown how public perceptions can be erroneous. For example, a majority of EU citizens believe that the forest area and related biodiversity is decreasing in Europe and wrongly assess the threats of damage that forests face (overestimation of forest fires, underestimation of the damages caused by insects, diseases, invasive species and storms).

He explained that European public interest has shifted from a traditional commodity-based and recreational demand to attaching a higher value to forest conservation, the protective functions of forest and the protection of biodiversity. European citizens are interested in the interconnections between forests and climate change with a majority believing that forests can help in one way or another to tackle climate change.

However, if a majority of Europeans request more active management of forests in order to better protect biodiversity, tackle climate change, and provide recreational opportunities, there are mixed opinions when it comes to the opportunity to promote wood as a renewable material and biofuel.

In conclusion, according to Mr. Gschwandtl, it appears that since it is public opinion which will influence and orientate public policies, there is a need to develop a clear and appropriate message, well targeted towards specific audiences, to stress the role that forests and wood products can play in tackling climate change.

9. CONCLUSIONS FROM THE FORUM

Mr. Gschwandtl drew up the following findings and conclusions:

(a) Themes of the Policy Forum

- Impacts of the global economic crisis on the forest sector
- Overview of the Green Economy concept

- Opportunities for the forest sector in the transition towards a Green Economy
- Strategies for the development of the forest sector

  (short-term survival, long-term development)
- Policy measures that can benefit the forest sector and enhance its contribution to a greener economy
- Cross-sectoral perspectives and cooperation

(b) Questions

1. In the context of major interrelated economic, social and environmental challenges, what are the opportunities for the forest sector? How can the forest sector benefit from increased green public spending in related fields, such as environment, energy and water?

2. How can the forest sector enhance its contribution to a green economy? What is the potential for the various areas, e.g. wood energy, environmental services, green building and carbon sequestration?

3. How can the forest sector be proactive and influence policy-making processes to its benefit? What can Governments, forest managers and companies specifically do? How can the forest sector enhance its cooperation with other sectors?

(c) Context

- The economic crisis has strongly affected the forest sector across the whole UNECE region.
- This was due mainly to the crash of the construction sector. In addition, the general economic slowdown caused a decrease in both foreign and domestic investment.
- However, there have been previous economic shocks the forest sector managed to respond to.

(d) Opportunities for developing the forest sector

- The forest sector can play a major role in the transition towards a green economy, with environmental, economic and social (employment) benefits for society.
- There is a growing awareness and understanding by policy makers of the forest sector's potential for development in and contribution to a green economy.
- Climate change mitigation: The role of the forest sector arguably has been underestimated when achieving a political agreement in Kyoto in 1997. There is an urgent need to promote and maximize the sector's contribution to reducing GHG emissions and to reflect this in post-Kyoto climate change agreements.
- Promoting sustainable management of forests would enhance their role as carbon sinks and contribute to offsetting global greenhouse gas emissions.
- Carbon markets could provide a flow of revenues to forest owners, depending on the scope of the successor to the Kyoto Protocol, as well as carbon cap-and-trade schemes.
- Green building: the forest sector can significantly contribute to green building, with wood as a renewable, eco-friendly material in certain circumstances.
- Wood energy: was the only market sector which did not experience decreasing demand during the past year, in large part due to Governments' policies to promote renewable energies. Current policies and continuing high fossil fuel prices should further encourage wood use for power, heat and liquid fuels.

- Green jobs: A green economy should generate more green and decent jobs. Whereas the total number of jobs in the forest sector is expected to further decrease, the share of green jobs in the sector should increase with the transition towards a green economy.

- Other environmental services from forests: beyond timber, many values and services provided by forests (biodiversity, protection against erosion, watershed protection…) should be better recognized and compensated for.

(e) Challenges and strategies

- Communicate better on the sector's role since public perception surveys show a lack of awareness about the potential of wood for mitigating climate change.

- Promote the rational use of wood, with highest values first, cascading downwards, and eventually completely using wood residues.

- Face increased competition between different uses of wood. Increasing overall demand for wood may lead to situations where sustained availability of raw material becomes critical in some regions.

- Find the right balance between what should be dealt with by markets and what requires Governments' involvement. This raises the issue of the extent to which the private sector needs public incentives to foster some green activities.

- Design the best possible mix and balance of different types of policy measures and instruments, including regulations, subsidies and taxes, public procurement, trade measures.

- Ensure best possible use of forest and forest products certification to promote the sector's contribution to greening the economy.

- Economic stimulus efforts can only provide short-term benefits to the forest sector. Governments' long-term visions are needed to enable a real shift towards a green economy. Energy and climate change policies will likely have longer term effects on the forest sector.

- Ensure intra- and inter-sectoral coherency between policies that promote green economy

- Adapt to climate change: ensure the adaptation of forests' and forest management to climate change, the effects of which are already noticeable. This is a prerequisite for a long-term contribution of the forest sector to climate change mitigation. There are also opportunities for the forest sector to contribute to adaptation of societies to climate change.

10. SUMMARY

The Policy Forum was the occasion to present an overview of the difficulties encountered by the forest sector due to the financial crisis that developed in autumn 2008. The key concepts underlying the notion of green economy were then defined. The presentations showed that the stimulus packages adopted to address the financial crisis could only be considered as partially green.

But participants agreed that in the long-term, the move towards a greener economy should have structural consequences on the forest sector through three main routes, linked with climate change preoccupations: (a) the development of wood energy; (b) the development of green infrastructure and building and (c) the increased recognition of the role of forest resources as carbon sinks.

Participants noted the key role of sustainable forest management in this context, and consequently of all the corresponding certification schemes.

This shift towards new activities could create new or renewed competition: (a) between wood energy and traditional industrial uses; (b) between wood energy and other sources of energy and (c) between wood in green building and other building materials.

Participants noted the importance of the climate change negotiations outcome for the forest sector. A wide range of policy measures are at the disposal of decision makers and the right balance should be found between public interventions and market role.

The role of forests in a green economy is not limited to climate change. Forests have many other positive roles to play through the protection and delivery of water resources and through the protection and enhancement of biodiversity.

A green economy should also generate more green and decent jobs. Whereas the total number of jobs in the forest sector is expected to further decrease, the share of green jobs in the sector is expected to increase with the transition towards a green economy.

Finally, there is an need for an appropriate communication by the forest sector in order to ensure the promotion of its strengths and avoid fallacious perceptions by the public.

In conclusion, the UNECE/FAO Policy Forum was an excellent occasion for a wide and in depth exchange of views through presentations and discussions on the challenges and opportunities facing the forest sector, in the context of an expected transition towards a green economy.

ANNEX I

Programme

09:30 Registration

10:00-11:15 Introductory session: Overview of the Green Economy

10:00 Opening by UNECE/FAO Secretariat and Chairman
Mr. Ed Pepke, *UNECE/FAO Timber Section*
Mr. Ingwald Gschwandtl, *Chairman*

10:05 Keynote: The forest sector in the Green Economy – Challenges and opportunities
Dr. David Cleaves, *USDA Forest Service*

10:30 Green economy and the forest sector
Ms. Laura Altinger, *UNECE*

10:45 Green jobs and the forest sector
Mr. Peter Poschen, *International Labour Organization (ILO)*

11:00 Big ideas for the transition to a Green Economy – What role should forestry play?
Mr. Peter Wooders, *International Institute for Sustainable Development (IISD)*

11:15 – 11:45 Discussion

11:45-12:30 Strategies for the development of the forest sector

11:45 Forest product markets in the UNECE region: turbulence and transition
Prof. Richard Vlosky, *Louisiana State University*

12:00 Development of the energy potential of the forestry sector in a sustainable way
Prof. Andre Faaij, *Copernicus Institute, Utrecht University*

12:15 The importance of communication and promoting the rational use of wood
Mr. Ingwald Gschwandtl, *Ministry of Agriculture, Forestry, Environment and Water Management of Austria*

12:30-13:00 Discussions

15:00-16:00 Case Studies for short-term survival and long-term development

15:00 Case study on forests providing environmental services, rural employment and income
Mr. Michael Sutter, *Österreichische Bundesforste*

15:15 Case study on a large forest products company
Mr. John Guérin, *Weyerhaeuser Products Limited*

15:30 Case study on a few state forest companies
Mr. Martin Lindell, *European State Forest Association (EUSTAFOR)*

15:45 A forest sector union's point of view
Mr. Robert Ramsay, *Building and Wood Workers' International (BWI)*

16:00-16:30 Discussions

16:30-17:45 Panel discussion: the way forward 16:30-16:35 Government policymakers

16:35-16:40 Paper industries
Mr. Bernard de Galembert *Confederation of European Paper Industries (CEPI)*

16:40-16:45 Forest owners
Mr. Morten Thoroe, *Confederation of European Forest Owners (CEPF)*

16:45-16:50 Forest entrepreneurs
Mr. Edgar Kastenholz, *European Network of Forest Entrepreneurs (ENFE)*

16:50-16:55 Non Governmental Organization
Mr. Duncan Pollard, *World Wildlife Fund*

16:55-17:00 UN, Environment & Energy
Mr. Gianluca Sambucini, *UNECE*

17:00-17:45 Discussions

17:45-18:00 Chairman's summary and closing remarks

ANNEX II

UNECE Press Release : "The Forest sector has a key role to play in green economy"

Geneva, 21 October 2009 – (www.unece.org/press/pr2009/09tim_p07e.htm)

There is a key role to play for the forest sector in the transition towards a greener economy and a more sustainable society. This was the overriding consensus of the Policy Forum on "*The Forest sector in the green economy"* organized by the United Nations Economic Commission for Europe (UNECE) and the Food and Agriculture Organization of the United Nations (FAO) held on 15 October 2009 in Geneva involving participants from Governments, Industry, Trade associations, and academics from Europe, North America, Central Asia and China.

The forest sector has suffered in 2008 and 2009 from the financial and economic crisis, due to the crash of the construction sector and reduced investments. Despite this very difficult situation, it appears that the forest sector also has opportunities to contribute to and develop in the transition towards a green economy, with environmental, economic and social benefits for society.

Governments' economic stimulus measures adopted since the end of 2008 can only provide short-term benefits to the forest sector. Energy and climate change policies will likely have longer term effects on the forest sector, and Governments' long-term visions are needed to enable a real shift towards a green economy.

Whereas forests play an essential role in global carbon cycles, the role of forestry arguably has been underestimated when achieving a political agreement on climate change in Kyoto in 1997. There is therefore an urgent need to promote and maximize the forest sector's contribution to reducing greenhouse gas emissions, and to reflect this in post-Kyoto climate change agreements being negotiate at the UN Framework Convention on Climate Change's Conference of the Parties (COP 15).

Promoting the sustainable management of forests, including through certification processes, should reinforce the forest-based sequestration of carbon and therefore contribute to offsetting global greenhouse gas emissions.

Significant opportunities are vested in green building to decrease greenhouse gas emissions. The contribution of wood-based products to green construction and furniture production can be significant, with wood as a renewable, and eco-friendly material.

Promoting in this context the sound use of wood, with highest values first, cascading downwards, and eventually completely using wood residues, will allow taking full opportunity of wood's comparative advantage.

Wood energy is currently the most important renewable energy source worldwide, including the UNECE region, and has great potential to further develop. Policies that promote renewable energy, including through research and development, as well as continuing high fossil fuel prices, could increase wood use for heat, power and liquid fuels.

A green economy should generate more and decent jobs. Whereas the total number of jobs in the forest sector is expected to continue to decrease, the share of green jobs in the sector should increase with the transition towards a green economy.

Last but not least, many environmental values and services provided by forests beyond timber, such as biodiversity conservation, protection against erosion and watershed protection, should also be better recognized and compensated for.

Challenges ahead are to define the right balance between what can be dealt with by the private sector and what requires governments' involvement, and to design the best possible mix of policy measures and instruments.

ANNEX III

ABSTRACTS OF PRESENTATIONS

All the presentations are available on the UNECE Timber Committee and the European Forestry Commission website at: http://timber.unece.org/index.php?id=250

1) **Dr. David Cleaves,** ***Associate Deputy Chief, Research and Development, USDA Forest Service, United States of America***

The global recession has heavily impacted the forest products sector in the United States. Economic perturbations are not new to the U.S. forest sector. The reduction in public timber harvest in the 1980s shifted timber supply and industrial capacity and increased imports. In the 1990s, the U.S. pulp and paper sector went through major restructuring, partly in response to increased recycling; and economic globalization resulted in U.S. furniture production moving largely off-shore. The housing market collapse in the recent recession has severely affected U.S. lumber and panel markets.

Economic stimulus efforts are providing short-term assistance that directly or indirectly affect the forest sector. While economic stimulus activities provide short-term assistance, energy and climate change policies are likely to have longer term effects on the forest sector. The demand for wood energy has been increasing and wood and other renewable sources of energy are an important element of climate change policies in many countries. The combination of policies and expected continuation of high fossil fuel prices could increase wood use for liquid fuels, power, and heat. The U.S. is expected to have an increasing area of intensively managed plantations providing the bulk of raw materials for wood products, with production facilities located in close proximity to raw materials. If bioenergy places demands on land areas used for fiber production, then wood fiber competition is inevitable. In the western U.S., treating fuels is an extensive geographic problem. Many of these areas have little or no remaining processing infrastructure, and produce insufficient materials to support highly capital intensive mills. Smaller scale operations, or new types of facilities that can use fuel treatment materials are needed. The role of forests in domestic climate change legislation proposals and progress on international agreements will strongly influence the forest sector.

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2) **Ms. Laura Altinger,** ***Economic Affairs Officer, Environment, Housing and Land Management Division UNECE***

Ms. Altinger's presentation discussed the concept of green economy and related concepts of sustainable development and green growth, suggesting that there was no generally accepted theory on the green economy but that progress in greening various sectors was attainable. It then reviewed the economic instruments that could bring about the path to a low-carbon economy and the individual building blocks of a green economy. Finally, it looked at the potential role of the forestry sector within a green economy, from the perspective of the UNECE region, identifying some new markets for wood products, and highlighting woody biomass as high potential for the region.

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4) Mr. Peter Wooders, ***International Institute for Sustainable Development (IISD)***

UNEP's Green Economy Report aims to provide a blueprint for governments aiming to green their economies. IISD were commissioned to write the chapter on Enabling Conditions: those policies and measures which governments need to put in place for the transition to a green economy. IISD have decided to concentrate their work on a limited number of "Big Ideas", applicable across countries and sectors. These ideas – topped with 'Government Vision' and tailed with 'Transitional Arrangements' – are: Subsidy Reform; Environmentally Related Taxation; Sustainable Public Procurement; Making Trade Serve Sustainable Development; and Favouring Green over Brown.

Sustainable forestry practices would clearly be a key part of Sustainable Public Procurement and the need to make trade serve sustainable development more than it currently does. But forestry could play a larger role. Using formal economic measurements of the value of ecosystems and biodiversity appears to be somewhat limited in its scope at present – there are practical and methodological barriers to overcome. It thus seems that less formal methods of encouraging the forestry sector to provide services to a greener economy are needed. Governments need to make a series of decisions on what they think are appropriate levels of biodiversity, carbon sequestration, amenity and goods and services provision. They then need to communicate these within their long-term vision, and favor them over 'brown' alternatives. Forestry will play a key role within the future green economy.

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5) Prof. Richard Vlosky, *Louisiana State University*

As is the case in most other nations, the current market downturn in the UNECE Region of Europe has been severe with GDP (adjusted for inflation) contracting 1.7%, 4.9%, and 4.7% in the first three quarters of 2009, respectively. The United States and Canada averaged lower declines over this period with GDP declining by 3.0%/quarter and 2.2%/quarter, respectively. The Russian Federation averaged the highest decline in GDP over this period with an average of -6.5%/quarter. The effect on the global economic meltdown and subsequent recession has had a significant impact on the forest sector in the UNECE. For example, in the United States, with the largest demand for wood products in the UNECE, multifamily unit starts fell 13.3% in July while single family homes was at a stagnant low of annual rate of 490,000 starts, down from a high of over 2.2 million starts in 2005. The S&P/Case-Shiller Home Price Index which tracks changes in single-family home prices in 20 U.S. metropolitan regions, has declined since mid-2007.

This has resulted in a dramatic reduction in consumption of forest products in the UNECE region by 116.9 million m3 in roundwood equivalent between 2007-2008 with 69% of this reduction occurring in North America. Specifically, UNECE demand for sawn softwood has fallen dramatically with a concurrent reduction in overall production in North America by almost 19% and in Europe by over 8%. In addition, Russian sawn softwood exports declined by 11% over this period. In the paper industry, the global economic crisis has hit hard; production in Europe and North America has decreased 17% in 2008, with prices continuing to fall.

The future is not bright. According to the World Bank, projections reflect the rapid deterioration in financial and economic condition and the increasingly negative interaction between weakening economies and fragile financial system that have come to the fore since late 2008 for virtually every country in the world.

What will impact the competitiveness of the UNECE forest sector in the future? First and foremost are economic factors as well as: currency rate movements, green building programs, public procurement policies, social responsibility, environmental consciousness, climate change, deforestation and afforestation, alternative demands on forests and, and alternative building materials.

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6) Prof. Andre Faaij, *Copernicus Institute, Utrecht University*

The presentation went into the negative perceptions around biofuels and bioenergy at large during the food crisis of 2008, that the GHG balances of biofuels are not good, the require endless subsidies, that land and water resources constrain bioenergy to marginal levels, that biofuels increases food prices and not good for farmers and that other alternatives (solar, efficiency, hydrogen) are better and *really* sustainable. However, the crisis has also resulted in a global push for sustainability frameworks for biomass production and use, a push for 2nd generation biofuels and other advanced options that use a lingo-cellulosic resources (residues from agriculture, forestry, marginal/degraded lands). Many market players now follow this development.

Furthermore, the notion is back that in order to tackle the energy and climate crisis and simultaneously contribute to much needed rural development and better management of natural resources, we cannot miss out on the biomass option.

Recent scientific assessment work on global potentials for bioenergy that takes key sustainability criteria with respect to food supplies, water, biodiversity and soil quality into account, concludes that bioenergy can make a large contribution to the worlds energy (and material) supply. Key preconditions are:

- investments in increasing efficiency of food production and livestock management.
- Deployment of perennial cropping systems on both better and poor (marginal, degraded) quality lands.
- Good governance of land use and management within sustainability frameworks.

Furthermore, residues and wastes from agriculture and the forestry sector can play a significant role, already on shorter term. The fact that several countries (e.g. Scandinavia) have demonstrated that forest supplies can be used sustainably and (cost)effectively for energy production is a key experience. The strongly growing international market for e.g. wood energy pellets supports this development and major investments are made in both supply lines and conversion capacity that relies on globally traded biomass resources. Given that large scale deployment of second generation biofuels, that could compete with oil prices around 70 U$/barrel, is expected to kick in already before 2020, there is a major opportunity for the forest sector. Current expanding markets for biomass for producing heat and power could gradually be complemented by cultivated biomass from perennial cropping system and deliver the feedstock to the new biorefineries that produce 2nd generation biofuels.

The presentation concludes that:

- We cannot miss out on the bio-based economy for fundamental and interlinked reasons (energy, climate, soil & carbon management, rural development).
- Ligno-cellulosic biomass (perennials, residues) offer the excellent perspectives.
- Forest sector and (international) pellet markets offers an essential opportunity on shorter term + the market experience to build on for longer term.
- Follow the learning curve, develop (sustainable) markets and stimulate investment.
- Breakthrough of 2nd geneneration biofuels may take affect on the forestry sector sooner than we think and will not be driven by policy but by economics

More information on this work and IEA Task 40 can be found at: www.bioenergytrade.org.

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7) Mr Ingwald Gschwandtl ***Head of Forest Policy and Forest Information, from the Ministry of Agriculture, Forestry, Environment and Water Management of Austria and Leader of the UNECE/FAO Forest Communicators' Network***

The role of systematic communication in placing forests and wood better in the emerging Green Economy

Mr. Ingwald Gschwandtl presented results of a comprehensive survey on public perceptions of forests and forestry carried out in all 27 Member States of the European Union in spring 2009 [2]. According to this study

[2] Shaping forest communication in the European Union: public perceptions of forests and forestry
Tender no. AGRI-2008-EVAL-10 Under the Framework Contract No. 30-CE-0101908/00-50
Client: European Commission – DG Agriculture and Rural Development
Rotterdam, 17 September 2009

the European public places higher value on forest conservation and forests' protective functions than on forest utilisation, and perceives the general condition of European forests to be much worse than it actually is.

The study suggests three key areas, Europe wide forest communication should focus on:

1. A clear message presented in a neutral manner that allows the public to make appropriate distinctions depending on the relevant specific issues and challenges, including forest area, biodiversity and damages, for various geographic contexts, i.e. local forests, European forests, forests worldwide.
2. Stressing the important role of forests and wood in tackling climate change.
3. Addressing specific audiences.

Mr. Gschwandtl argued for a joint European communication effort built around a shared common message as umbrella for concerted actions and joint activities of the various forest and wood related European institutions and organisations. He mentioned the European Forest Week 2008 as an example and stepping stone in this respect. The upcoming International Year of Biodiversity 2010 and the International Year of Forests 2011 provide communication opportunities to capitalize on.

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9) Mr. John Guerin, *Weyerhaeuser Products Limited*

Sustainability has become a key driver in the forest products sector, yet the concept itself is multi-dimensional, with definition often determined by audience interest. For many wood traders, sustainability is solely about procurement requirements and ticking the right boxes. For others, newly introduced legislation is the key consideration, while for the rest it is a set of voluntary standards that simply tell the world that they are doing the right thing. Added to this, it is clear that the risks of climate change will become a key feature going forward and progressive companies are now recognizing that their sustainability will be measured and judged by their own carbon footprint in the years ahead. In the context of forest products the modern definition of sustainability will focus less on product source in isolation, and more towards a holistic business view.

This paper explored the concept of sustainability from a number of angles, focusing specifically on the contribution of Sustainable Forest Management (SFM) and certification, sustainability of supply, and other key

drivers in the forest products arena. The paper will concluded by examining the journey completed to date using an illustrative case study of Weyerhaeuser Company and its South American operations. The case study demonstrated how extensive pine and eucalyptus plantations in Uruguay combined with a go-to-market strategy for tropical substitute plywood will meet the best practice sustainability requirements of the 21st century.

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10) Mr. Martin Lindell, *European State Forest Association (Eustafor)*

Case study on State Forest Companies in a few European countries.

The members of the European State Forest Association (EUSTAFOR) was also hit by the finance crisis and production of timber and pulpwood went down 10-30%. Also prices went down. The demand and production of energy wood went up however. The overall downturn has been met by more cost effective solutions, savings, reorganizations, cut in staff and so on.

No specific green programs or projects have been started as a result of the crisis – they had already been started earlier. EUSTAFOR members see SFM as very important and will continue their work, further improving and developing new techniques and solutions to support a greener economy.

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11) Mr. Robert Ramsay, *Building and Wood Workers' International (BWI)*

The Views of Forest Workers

As is well documented, the current financial crisis has hit forest workers extremely hard. What was first observed in the construction industry quickly spread through the chain of production of building materials and as a result the wood industry, one of the largest suppliers. This hit hard against workers in the sector, and those in rural areas of forest were often very hard hit. However, in order to emerge quickly from the crisis, government stimulus packages to re-energise the construction industries should include the development of strategies to use more renewable materials, particularly wood. This would serve the double purpose of stimulating the wood and forestry industries and enabling strategies to combat climate change. The opportunity created by infrastructure investment should be harnessed in order to better develop the industry and improve training of workers in order that they better understand issues of sustainable forest management and therefore make a better contribution to forestry to enable mitigation of climate change.

However, it must never be forgotten that social standards are key in assisting forestry workers and their communities to at least achieve the most basic living standards. The reports and evidence from trade unions in the industry shows a tendency that social standards are at great risk in actually declining at a time when worsening standards can least be afforded. One recent example reported from Sweden, shows that workers

are being recruited from other parts of Europe and the world and are being treated abominably, with standards far below those which apply to those pertaining in the country for workers in the same industries. Therefore, Europe has a particular role in ensuring that social standards, developed over a long period, and which have led to the relative prosperity of the workers and their communities must be upheld strongly and effectively and without exception. It is also time for the basic social standards applicable in forestry certification to be also applied to all workers throughout the chain of custody. We cannot be seen to be struggling our way out of the current crisis on the backs of workers by reducing the standards that they have achieved after over a century of social struggle.

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13) Mr. Morten Thoroe, *Confederation of European Forest Owners (CEPF)*

There is a potential in the European private forests to increase the wood mobilization and forest production, but there is also needs for actions to be successful.

1. Renewable energy. The forest-based biomass will provide the majority of the renewable energy input in the future. Actions needed:

- Increased public investments in research and innovation is urgently needed for further development
- Equal treatment of different renewable energy sources is crucial

2. Wooden products. Carbon storage in wooden products makes wood an even more environmentally friendly raw-material. Action needed:

- Carbon storage in HWP must be accounted for in climate change policies
- Procurement policies must treat wood equal to other products

3. Environmental services. Forests also are providing important ecosystem services *[conserving biodiversity, protecting watersheds, preserving gene-pools, landscape beauty, sequestering carbon, recreational opportunities etc.]*

- A market for those services must be established to fulfil the full potential.

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14) Mr. Edgar Kastenholz*, European Network of Forest Entrepreneurs (ENFE)*

The Forest Sector depends on Contractors

Most forest operations today are carried out by service enterprises rather than by direct employed workers. More and more, the forest sector and forest based industries depend on forestry contractors to carry out the various tasks in forest operations and logistics, which are necessary to manage the forests and to supply the industry with raw material. Increasing demands from clients and society require increasing competences and skills. Contractors already are drivers for continuous development in forest operations, since they invest in and apply modern technology and contribute to economic success of the forest sector with steadily increasing productivity. However, contractors need a sound economic environment to be able to continue this development. First of all they need prices for their services which allow, that they are able to pay decent wages and recruit keen and competent workers, that they can invest in modern technique, training and organisation, and last but not least that they earn a decent profit to make the business worthwhile.

Crisis leads to threats for the forest sector

The recent crisis has severe effects for forestry contractors which in the worst cases has led to the loss of competent work force, which is desperately needed to carry out the operations in forestry. The recent crisis is threatening for forestry contractors, because it has already led to a dramatic decline in work volume and due to competition to a dramatic downfall in prices for services. This again has resulted in laying off skilled workers and contractors being not able to continue investment. Loss of capital in contracting enterprises results in a severe regression in enterprise development.

Our contribution on the way forward:

As a contractor association ENFE can not interfere with the workings of the markets. But the organisation strengthens its efforts to provide a development strategy for its members which consists of:

Promoting good practice in forest operations, where we use the Guide to Good Practice in Contract Labour in Forestry which was recently published by the FAO.

Facilitating access to certification with the development of a European umbrella scheme for a reliable and credible contractor certificate: EFECT (“European Forestry Entrepreneurs Certificate”), which is supported by a recently launched project CeFCo (“Certification of Forestry Contractors”) to encourage access to management services and certification

Increasing health and performance where we can provide a set of tools which were developed in the project COMFOR (“collective work science approach to solving the common problems of occupational health and performance in European forests operations SMEs”)

Raising competences of contractors by developing a curriculum for entrepreneurial skills for contractors in the recently launched project ConCert (“Contractor Certification”).

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15) Mr. Duncan Pollard, *World Wildlife Fund*

We are living beyond the limits of the planet - the average European needs two planets to maintain his or her lifestyle. If everyone in the world were to consume resources at this rate there would not be enough to go around. Clearly we can't go on at this rate. Its time to consider different macroeconomic models that take into account not only consumption, but also assets - natural assets as well as social and human. The governments of the world are starting to take notice of this. The green recovery packages are not only starting to point the developed world onto a different economic trajectory, but also recognise explicitly the value of natural, social and human capital.

In considering the green economy, there are three resources that we need to focus on: biocapacity, water and energy. The forest sector is intimately bound up in all three of these, and able to contribute solutions. We need to maintain the biocapacity of the planet, especially in the face of climate change. We also need to rapidly develop understanding of water footprint and its impacts. The forest industry also needs to rapidly develop new businesses based upon sustainable bioenergy. For companies the challenge is to internalise the price of carbon and water in their business models and ensure that they are resilient and competitive as subsidies are eliminated. For governments the challenge is to sweep away perverse agricultural and energy subsidies, lead the change to a green economy through public procurement policies, and develop new macroeconomic models for societal prosperity. For forest owners, the future is bright as new values will be assigned to forests, and new markets will be developed. Yet their challenge is to build up the resilience of their forests to be able to adapt to climate change. This will involve taking a landscape level approach to management - not just sylvicultural management within the forest boundary itself.

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16) Mr. Gianluca Sambucini, *UNECE*

The UNECE Global Energy Efficiency 21 Project (GEE21) aims to develop a more systematic exchange of experience on capacity building, policy reforms and investment project finance among countries of the other regions of the world through their UN regional commissions in order to promote self-financing energy efficiency improvements that raise economic productivity, diminish fuel poverty and reduce environment air pollution such as greenhouse gas emissions. With due adaptation, research and technical assistance, financing mechanisms can be effectively transposed from EERE investments to wood-energy. Along these lines, existing inter-divisional cooperation at UNECE allows for a more advanced and integrated market formation for identification, promotion and financing of wood-energy investments.

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ANNEX IV

United Nations
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Food and Agriculture Organization
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THE FOREST SECTOR IN THE GREEN ECONOMY

A background paper by the secretariat for the

UNECE/FAO Policy Forum, 15 October 2009

This paper is prepared as an input to the UNECE/FAO Policy Forum to be conducted during the UNECE Timber Committee Week. It is based primarily on responses from heads of delegations to an enquiry about their country's forest sector in the current economic and financial crisis. In particular, countries commented on their forest sector in a green economy, that is, an economy benefiting society through its long-term environmental orientation. Government stimulus packages as well as other policies and measures are supporting the forest sector in some countries, either directly, or indirectly, and examples are included in this summary of the responses. The secretariat thanks all the countries which shared their experiences, as one objective of the Policy Forum is to help countries' forest sectors to emerge from the economic crisis and to regain sustainable development. Countries' suggestions of policy targets and instruments are included, as they will form a basis for debate at the Forum.

Contents

1. INTRODUCTION

The 2008-2009 financial and economic crisis has led to a fundamental shift within forestry and the forest industry sectors, the effects of which are being felt through the entire chain from the forest to the markets. Never since the first oil crisis in the 1970s have the forest products markets experienced such a downturn.1 In response to the global economic downturn, some countries have continued implementing economic stimulus packages to tackle the crisis and to promote a move towards a greener economy. Even though a greening of the global economy, aiming at higher sustainability through the reduction of negative impacts on the environment and climate change, was already underway before the economic crisis, the latter gave incentive to some Governments to accelerate the process and earmark elements of their economic stimulus packages for green investment.

This paper starts out by giving an overview of the economic situation for the forest sector in the UNECE region, following the current economic slump. Based on the responses to a questionnaire sent to the heads of the delegations of the UNECE Timber Committee, it also examines possible contributions the forest sector may make to a greener economy and assess the extent to which the forest sector can influence and benefit from economic stimulus packages and fiscal measures oriented towards a more sustained environment. The paper attempts to provide a cross-sectoral perspective on opportunities and strategies for the medium- and long-term development of the forest, and presents an overview of existing policies and measures put into place in the UNECE region.

2. GENERAL OVERVIEW OF THE ECONOMIC SITUATION OF FOREST SECTOR THROUGHOUT THE UNECE REGION

The UNECE region, which is the largest global producer, exporter, importer and consumer of wood and paper products, and its forest sector January 2010 January 2010, have been badly hit by the economic crisis. The extent to which each country has been affected varies between country, depending on different factors such as the fall of forest products prices due to a decrease in demand following the crash of the construction sectors, the decline in both foreign and domestic investment and the fluctuation in currency exchange rates.

The downturn in forest products markets has of course impacted the economic situation for state and private forest owners through a reduced demand for wood raw materials. However, the sustained demand for wood energy, buoyed by Government polices to promote renewable energy sources, has been the bright spot during the market downturn. Supplying woody biomass maintains harvest levels and income for some forest owners.

In 2008, consumption of forest products in the UNECE region fell by an extraordinary 8.5% (see annex, table 1). This decrease in demand, accompanied by a decrease in production, is expected to be as significant for the current year as indicated by data for the first half of 2009. According to the UNECE/FAO *Forest Products Annual Market Review, 2008-2009* (FPAMR 2008-2009), most of the 56 UNECE Member Countries have experienced sharp falls in consumption and demand of wood products.

Throughout the UNECE region, the sector suffered from diminished demand for and falling prices of wood and paper products. This has led to reduced income for producers, which resulted in mill closures in some countries (e.g. United States, Finland, France), job cuts (Estonia, Cyprus, Finland, France, Sweden, United Kingdom and US), and many companies had reduced profits. The short-term effects have been felt throughout the

[1] UNECE/FAO *Forest Products Annual Market Review 2008-2009*, available at http://timber.unece.org/fileadmin/DAM/publications/Final_FPAMR2009.pdf

entire wood and paper processing chain, from primary processing activities to the production of value-added products, as well as the trade in forest products. The employment losses have been tragic, with ripple effects impacting entire communities, often in rural forested areas with lower incomes. In just one year, between 2007 and 2008, the consumption of forest products in the UNECE region dramatically decreased by 117 million m^3 in roundwood equivalent, of which the majority occurred in North America (81 million m^3).[2]

Another factor linked to the economic crisis is the US and European housing crisis. Following the crash of the construction sector in those areas, the demand for sawn softwood fell drastically during 2008 and during the first months of 2009, with a severe impact on the industry: overall production in North America fell by almost 19% and in Europe by over 8%. During this period, Russian sawn softwood exports also declined by 11%. Other wood industries, producing panels and paper, also saw significant reductions.[3]

Based on up-to-date information, including Governments' responses to the questionnaire sent by the UNECE/FAO secretariat, this following section of the background paper reviews the effects of the economic crisis in the UNECE region and discusses the extent to which the forest sector was affected.

2.1. North America

North America has reported a sharp decline in production and demand in forest products markets, primarily because of the fall in housing construction requiring sawnwood and panels. According to the FPAMR 2008-2009, consumption in North America and Europe plummeted by nearly 13% and almost 6%. In addition, from record levels of consumption, production and trade in 2006, the slight downturn for the region in 2007 escalated rapidly in 2008 and 2009. Following the economic crisis and a decrease in the construction sector in the US, the forest products markets fell into recession4. US imports from its major trading partner, Canada, dropped off sharply, causing a crisis in the Canadian forest products industry, which was accentuated by a strengthening Canadian dollar. European exporters to the US were similarly affected, both by diminished demand and by the strong euro. US economic weakness has resulted in a national debt of over $1 trillion as of July 2009 (WSJE, 2009).

2.1.1 The housing crisis and affects on wood and paper products

The economic crisis heavily impacted the US forest sector. Since the housing downturn preceded the more general economic downturn in the US, parts of the forest products sector were impacted earlier and longer than other economic sectors. It has also been much more severe than the general downturn.5 The US housing sector is a major driver in the demand for forest products, since wood-frame construction accounts for over 85% of US housing. Housing starts in the US have declined by over 75%, falling from a high of about 2.2 million in 2006 to probably less than 500,000 in 2009. This has had trickle down effects throughout the forest sector as both demand and wood prices have declined. US sawn softwood production was down 54% between 2005 and January 2009. Oriented strand board (OSB) production was also affected by the housing downturn, but higher US exports helped sustain US production into 2008.

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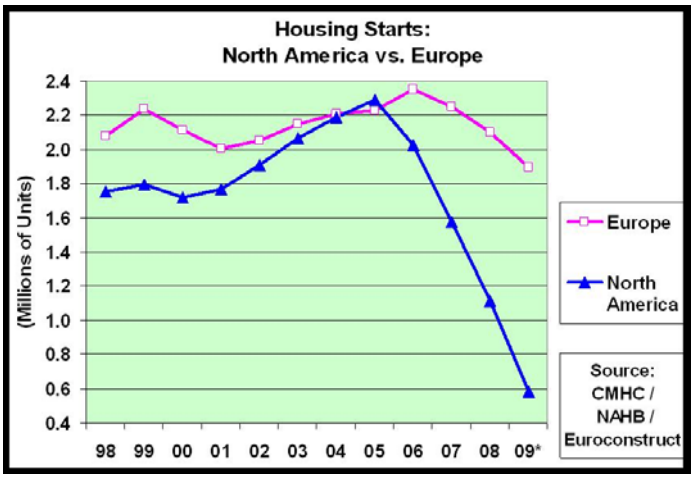
[2] *Ibid*

[3] The Timber Committee Market Discussions scheduled on 13-14 October 2009, prior to the Policy Forum, will discuss the impact of the economic and financial crisis on the forest sector (see document ECE/TIM/2009/5).

[4] The US is the world's largest consumer of wood and paper products.

[5] The US 2009 market statement and the FPAMR 2008-2009 provide detailed information on these impacts.



Source: CMHC/NAHB/Euroconstruct [6]

The housing decline has also hurt the hardwood components industry. Furniture production in the US was already severely affected by competition from foreign imports. The result has been a shift away from furniture and to building products and cabinetry, which now dominate the US components markets. Those sectors have seen severe declines as a result of the downturn in housing construction. Sawn hardwood production from the winter of 2008 to the winter of 2009 was down approximately 30% in all regions. Sawnwood and log prices dropped by similar amounts. There are now signs that the housing market has bottomed out, with new home sales stabilizing and prices starting to increase marginally on a national basis. However, most forecasters expect economic growth to be slow. In the longer term, it remains to be seen whether the recent collapse in the US housing market will lead to long-term shifts in per capita demand for housing, either in terms of declining number of units or in reduced floor-space per unit.

The US pulp and paper sector has gone through significant changes in the last two decades. US wood pulp output peaked in the mid-1990s and then declined as result of paper recycling gains in the early 90s, shifts in global demand since the late 1990s, and now an economic recession. US paper and paperboard output generally declined over the past decade, and the latest drop in output was steep and abrupt. However, the drop in annualized production since 2007 was less than the drop in US purchases because of gains in exports. The US trade gap in pulp, paper and board had risen to 8 million metric tons in 2002. Nonetheless, as a result of consolidation, a weaker dollar, and productivity gains, the trade gap was narrowed, and in 2008 the trade gap was closed. Markets are indicating generally lower pulpwood prices and lower timberland returns for the near term.

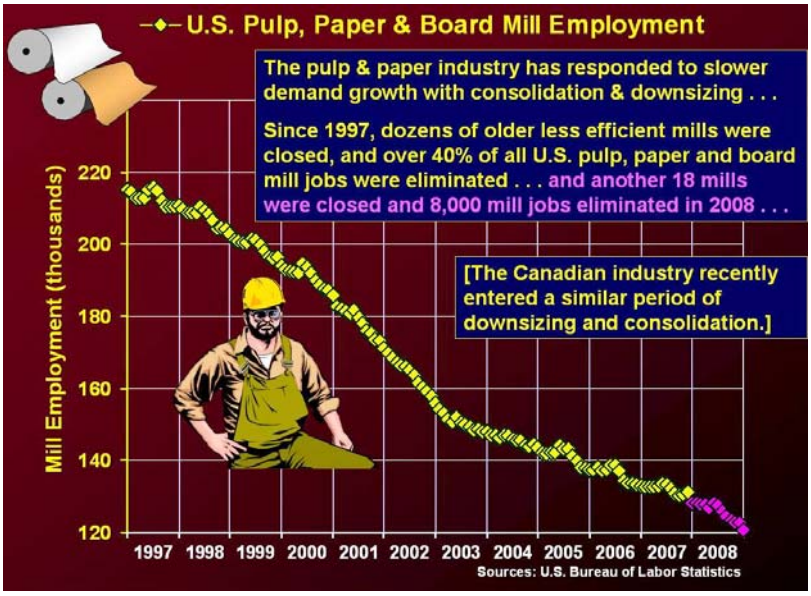
2.1.2 Employment trends in the US

Before the global recession, some parts of the US forest sector had been experiencing declines in employment, most notably the furniture and pulp and paper sectors. The US pulp and paper industry went through a cycle of consolidation and downsizing starting in the late 1990s. Since 1997, dozens of older less efficient mills were closed, and over 40% of all US pulp, paper and board mill jobs were eliminated. Overall, jobs in the forest

[6] Presentation of Russell Taylor at COFO World Forest Week, 20 March 2009, Rome, Italy, available at: http://foris.fao.org/meetings/download/_2009/impacts_of_global_economic_turbulence_on_the_fore/presentations/russ_taylor_un_ece_softwod_chpt2d.ppt

products industries declined about 15% between 1997 and 2006, falling from approximately 1.5 million to 1.3 million. During this same period, overall US employment grew 11%.

The economic crisis has exacerbated this trend. In the US pulp and paper sector, another 18 mills were closed and 8,000 mill jobs eliminated in 2008. Restructuring did deliver productivity gains. Output per worker at US mills has increased by over 40% just since 2001. Productivity has levelled out but not declined in the current recession.



Source: Peter J. Ince, 2008.[7]

Since 2006, employment has not only been affected in the pulp and paper sector but in all forest products sectors. The US Bureau of Labor Statistics reports indicate that between 2006 and 2008, forest sector jobs declined to slightly over 1 million. Preliminary employment estimates for July 2009 show additional declines in the wood products manufacturing sector and pulp and paper sector. It has been estimated that in 2006 about 551,000 jobs were direct forest-based recreation jobs. Forestry employment in the public sector is difficult to estimate. Permanent employment in the US Forest Service has been declining since the early 1990s, but there has also been a shift to more temporary workers and use of contractors. State forestry employment increased slightly between 2000 and 2004, but state jobs are more likely to have been impacted by the economic downturn than federal jobs as states attempt to cope with severe budget restrictions. There are also numerous forestry-related jobs in education and research that may also be affected by the downturn, particularly those funded through state institutions. Finally, companies involved in wood furniture production have been relocating abroad for a decade or more, resulting in declining employment in the US furniture industry. A more abrupt and recent drop in employment in the kitchen cabinet industry is attributable to the housing decline.

[7] http://michigansaf.org/Tours/10Markets/09-Ince.ppt

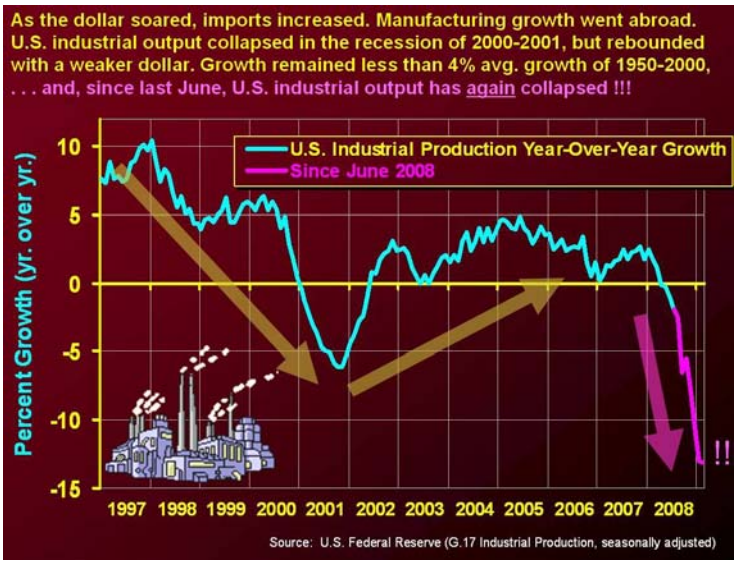
2.2 Europe

The economic crisis spread rapidly in various parts of Europe too, and housing bubbles burst, driving down home values as well as demand for wood products. Most countries saw their timber purchasing by end-user markets decline substantially in 2008 and continue to be depressed in 2009. This was principally due to the decline of the housing and building sectors which induced demand and particularly prices for timber, to decrease significantly. The fall in wood prices in some countries (e.g. Sweden, Ireland) was not only the consequence of a lack of demand for wood but also reflected a reversal of currency valuations. Similarly to the US dollar devaluation scenario, the loss in value of the Swedish krona against the euro caused favourable conditions for exporting Swedish sawnwood. Over the past year, currency exchange rates played an important role in the global forest markets. The effects of the housing and financial market crisis, which originated in the US, a strong euro and high interest rate, plus rapidly rising raw material and energy prices, pushed the euro area onto a slower growth track in the first half of 2008.[8]

The situation in the UK for instance could apply to many other countries in northern and western Europe. There, the new home building market has been badly affected with new housing starts in the UK in 2008, projected to be around 135,000, down by nearly 40% on the 217,000 starts in 2007. Once official house building data is available, it is expected that the social housing sector will show an increase in numbers of homes built in 2008 compared to 2007, but the private sector is likely to be lower by approximately 45%. The numbers of new homes to be built in 2009 in both sectors are expected to decline. The housing repair, maintenance and improvement sectors of construction have been less severely affected. The public sector non-housing construction activity was higher in 2008 than in 2007, and a greater volume of infrastructure projects also took place, but they use less wood. Although the demand for pallets and fencing materials was lower in 2008, the fall in volume has been less marked than the decline in demand for construction grades. Markets for fencing and outdoor wood-based products have also been less severely affected by the downturn than other markets. Imported softwood volumes were the lowest for over 50 years in 2008 and UK production was also sharply lower. However, there has been a degree of import substitution by UK. sawmillers, with increases in demand for pallet wood as supplies from the Baltic States have reduced.

The situation is similar in Ireland, where the housing and building crisis has also driven prices for timber to decrease significantly. The demand for wood decreased by approximately 15%, while prices fell by approximately 30% and sometimes more. The biggest decreases were seen in construction timber and large sawlog (i.e. the larger assortments) and pulpwood (smaller assortments) to a lesser extent. The demand for pallet wood (small sawlog) has remained steady. It is important to note that the decrease in price is greater than the decrease in demand due to both the economic crisis and the fall in the value of sterling relative to the euro. These currency-exchange-rate changes have a profound effect on the region's forest products trade, effectively shutting off some channels while opening others.

[8] Finnish Forest Sector Economic Outlook 2008-2009, available at: http://www.metla.fi/julkaisut/suhdannekatsaus/2008/outlook2008.pdf



Source: Peter J. Ince, 2008

In Finland too, the forest industry has been adversely affected by the slowdown in euro area GDP growth, the drop in housing construction, and the high level of interest rates. The uncertainties of the financial markets also affected investor confidence. Sawnwood production and sawnwood export volumes and prices were down in 2008 by about one fifth on the figures for 2007. It should be noted 2007 was a boom year for the sawmilling industry. Production and exports in the paper industry were also down in 2008. According to the Finnish Forest Research Institute (METLA), rising inflation and higher interest rates, curtailed demand in export markets. Uncertainties in the housing and financial markets have also been factor slowing GDP growth in the euro area to about 1.5% during 2008, and will slow growth in 2009 to even less than 0.5%.9

Austria also saw a decline in demand for sawnwood, panels, paper, timber construction and many other timber products in the fourth quarter 2008 and in the first half of 2009. Many companies reduced their harvest level because of low roundwood prices which sold at an estimated 30% less in comparison to 2008.

The forest sector and timber industry in Germany was also severely affected. In January 2009 there were decreases in the sales and turnover of the forest sector by up to 45% with the exception of the wood energy sector, which showed continued growth. The major falls were seen in roundwood export (-45.1% in 2009) and a sawn softwood export with -34.8% in the first half of 2009.

In France, the economic crisis has affected the whole forestry sector. The situation was aggravated by Klaus, the storm which hit the southwest region of France in January 2009, destroying up to 70% of forest stock in certain areas.[10] The storm profoundly disrupted the French forest sector as the trees downed during the storm were the equivalent of more than an annual national harvest. A financial support package provided by the state compensated the losses experienced by foresters and pre-financed harvesting. The package consisted of 600

[9] Finnish Forest Sector Economic Outlook 2008-2009, p. 9, available at: http://www.metla.fi/julkaisut/suhdannekatsaus/2008/outlook2008.pdf

[10] Extra Tropical Storm Klaus – France and Spain, 24 January 2009, available at: http://www.eqecat.com/resources/ExtraTropicalStormKlaus.pdf. On 15 September 2009, European Deputies have given the green light to the proposal made in May 2009 by the European Commission to grant more than 109.4 million euros to help the 31 departments of the South-west France affected by the storm and to support the timber industry. (http://www.gouvernement.fr/presse/tempete-klaus-la-france-obtient-1094-millions-d-euros-de-l-europe)

million euros in soft loans and grants of 415 million euros. For comparison, France reported that the value of wood marketed in 2000 amounted 1628 million euros. Aside from the storm, the national situation is not looking much brighter. Sawmills have been significantly affected by the crisis given that their main markets come from the construction sector (60% of total production is used in this market) and packaging (25%). The most affected sector remains the packaging industry, for which demand dropped by 50%. The pulp and paper and the wood panels industries have also been affected as these industries depend on global markets which have been hit by rising energy prices and higher costs of wood supply. Many plants were either not producing at capacity, shutdown temporarily, or were closed indefinitely. This was the case for a plant which consumed 1,200,000 metric tons, or 15% of the annual domestic crushing. Furthermore, the decline in demand for roundwood has led many logging companies to stop their activity. This downturn generally affected businesses with weak financial structures that had made heavy investments in the past 5 years. The general economic environment in combination with the afflux of huge amounts of cheap volumes from the windthrow has had consequences for forest owners, whether private or public. Timber prices have dropped sharply, and the demand is very selective. It is at this stage difficult to make predictions about the outlook of the forest sector in France.

Switzerland too saw its forest sector affected by the economic crisis, however, to a lesser extent than the other countries referred to above. The building sector, in comparison with the above mentioned countries remained quite stable. As a consequence the sawmills and the wood processing sector faced a smaller decrease in demand (-10 to -15%). Forest enterprises reduced their timber production by 7.5%. Private forest owners adapted to the situation by cutting less timber and by reducing the number of seasonal jobs to a minimal in order to meet the decrease in demand.

The Dutch forest sector was also affected by the economic crisis and saw its roundwood prices drop heavily. According to the Dutch Government, wood prices are now back to the level of 2004. For the year 2008 wood harvest levels were even higher than in the previous year. The main consequences of the crisis was seen in the consumption of sawnwood in 2008 which dropped by 10-15%. Stronger effects of the economic slump are expected for 2009-2010, especially in the construction sector.

In Norway, both wood processing and pulp and paper industries have experienced falling demand for their products; this led to lower demand for roundwood. Low demand combined with low prices for roundwood has led to a significant decrease in fellings. Average prices for roundwood have decreased by approximately 10 euros since the first quarter of 2008. The fellings were 23 and 32% lower in the first two quarters of 2009 compared to the same period in 2008. However, the Norwegian economy in general is holding up better than many other European countries in the global economic crisis and expects to emerge less affected than its neighbours. Unemployment, although on the rise, is still low by international standards at around 3%, and the central bank has slashed its key interest rate to 2.0% — down 3.75 points since last October, in order to help encourage economic growth during the downturn.[11]

The slump in the housing market, the low demand from export markets, accompanied by the deterioration of price competitiveness internationally, have all affected central and eastern Europe economies and their forest markets. In the Czech Republic, during 2008 and 2009, the demand for sawnwood has decreased by 50%. Demand for coniferous logs has decreased by 40%, demand for pulp by 30% and demand for pulpwood by 50%. The value of claims after the term of payment has doubled, added value has decreased by 30%, and the average prices of timber assortments decreased by 15%.[12] In other words, buyers are defaulting on payment. Employment

[11] 'Norway to exit economic crisis less hurt than others', Tuesday 31 March 2009, available at: http://www.reuters.com/article/rbssInvestmentServices/idUSLV94844220090331

[12] These are not official statistical data, but experts' estimations based on data provided by the Czech Forestry-Timber Processing Sector

in the forest sector has consequently dropped because of the crisis. No statistics have yet been provided due to the large number of companies affected and the difficulty of acquiring data from forest owners. However, based on the fall in added value, experts estimate a decline of 20% in employment. As the public sector only administers public forests (state 61.5% and municipal 16%), the majority of the job losses are thought to be attributed to the private sector (private owners, entrepreneurs and companies contracted for forest operations).

In Estonia, the crisis has had an impact on the forest industry volumes of production. The volumes have decreased by about 30%. Also, prices have fallen, by an average of 40%.

In the Ukraine, the demand for processed timber decreased significantly during the economic crisis. According to experts, around 80% of small- and medium-sized enterprises have decreased their level of production. As a result, the volume of wood fell by 30% while timber prices decreased by 20-25%. Auctions are temporarily not operating and wood is only being sold through direct contracts with forest enterprises.

2.3 Russian Federation

The economic crisis has affected the forest sector in Russia. In 2008 the volumes of production and consumption of all types of forest products (roundwood, sawnwood, wood-based panels, paper and paperboard) decreased in comparison with those of 2007. In 2009 the trend towards reduction of production and consumption of forest products remains. For the year 2009, the country expects a reduction in production of forest products as follow: production of roundwood will drop by 11.1%, sawnwood – by 9.8%, plywood – by 18.7%, particle board – by 13.0%, fibreboard –by 20.0%, paper and paperboard – by 4.2%, compared to 2008. Employment in the forest sector has also been affected. The number of employees in the forest industry has been reduced. According to Rosstat (Federal Service of State Statistics in Russia) there was a considerable reduction in the number of employees in the period of January-July 2009 against the same period of 2008: in forestry the reduction accounted for 8.3%, in woodworking and production of products from wood – 16%, in pulp and paper industry – 8.5%.

2.4 Summary

As described in the first section of the background paper, the impacts of the economic crisis on the forest sector were noticeable across the whole UNECE region. Countries in North America, Europe and CIS have experienced the fall of forest products prices due to a decrease in demand for forest products. The crash of the construction sector impacted some countries more than others. The US, UK, and Ireland were significantly affected by the construction crisis while other countries like Finland, Austria, Switzerland, France, the Netherlands, Norway, Czech Republic, Estonia, the Ukraine and the Russian Federation suffered from the more general economic slow down including a decrease in both foreign and domestic investment.

3. OPPORTUNITIES AND STRATEGIES FOR THE DEVELOPMENT OF THE FOREST SECTOR IN A GREEN ECONOMY

This section of the background paper presents an overview of the opportunities and strategies which could be conducive for the development of the forest sector and thus promoting a more sustainable development of society. It begins by considering how forests can play a major role in climate change mitigation strategies, not only through carbon sequestration but also through providing raw material as source of renewable energy, thus contributing to transition towards a carbon neutral society. It notably examines the main parameters, options and

challenges when considering renewable energy from forests. It will then discuss the possibility for the forest industry to expand its capacity while producing materials which can be used in green buildings. The last part points out opportunities for internalizing external costs of managing forest ecosystems that provide crucial environmental services valued by society.

There is growing acceptance and understanding by policy makers for the forestry sector's potential for growth in the green economy. Governments, international organizations and other stakeholders such as key industry players have been the drivers for promoting a greening of the economy, by supporting initiatives which support the benefits of transferring to environmentally-friendly technologies, clean energy and climate change mitigation and adaptation. The forest sector is particularly important in terms of its environmental, economic and employment impact.

The United Nations Environment Programme (UNEP) is currently writing a report on the "green economy" as part of their Green Economy Initiative[13], which was launched in October 2008. The Green Economy Report (GER) will review ways to mobilize and re-focus the global economy towards investments in clean industries, clean technologies and 'natural' infrastructure, such as forests and many other green areas. These initiatives are seen as the best way to promote real growth, reducing impacts on environment, combating climate change and triggering an employment boom in the 21st century[14]. Specifically, it is expected to explain and communicate how environmentally sound investments such as green buildings, sustainable energy, and climate change mitigation projects, can yield significant gains in terms of economic growth, sustainable job creation, and poverty reduction. The GER is expected to be produced and published by October 2010, with a first integral draft report to be released by the end of 2009. The report will include a review of the global policy context, and analysis of selected green sectors, including a chapter on the forest sector followed by an analysis of their enabling conditions, and finally a set of policy recommendations all of which could be valuable for forest sector policy makers to consult.

Following UNEP's approach through its Green Economy Initiative, the UNECE/FAO Policy Forum should be used as a platform to discuss the opportunities for the forest sector to use the economic downturn to enhance its contribution to a more sustainable society.

Since the demand for green products is expected to continue to grow[15], opportunities present themselves for the forest sector to adapt to meet future demand for sustainable wood products, as well as wood energy. In addition, a multi-product based forest industry would enhance the sector's ability to adapt to changes in production and demand. In order to achieve an enhanced contribution of the forest sector to a greener economy, appropriate policy directives and investment could contribute to further develop the potential of the forest sector while simultaneously maintaining both long-term employment[16] and healthy forests.

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[13] More information on the Green Economy Initiative can be found at: http://www.unep.org/greeneconomy/

[14] UNEP Green Economy Report Outline, available at: http://www.unep.ch/etb/events/Green%20Economy%20Workshop/GEI%20Workshop%2028-30%20April%202009/Green%20Economy%20Report%20-%20Outline%2020%20April%202009.pdf

[15] UNECE/FAO Forest Products Annual Market Review 2008-2009, available at http://timber.unece.org/fileadmin/DAM/publications/Final_FPAMR2009.pdf. While the economic crisis in late 2008 and early 2009 reduced the demand for energy, as evidenced by a steep decline in the price of oil, Government policies to promote renewable energy sources have kept the wood energy market strong.

[16] These emerging climate change programmes and regulations will need the support of a competent workforce, therefore, it is crucial that Governments and stakeholders invest time and resources in identifying and training its potential workforce so that candidates are qualified for the job. The September 2009 issue of ISO Focus mentioned that "the market for green jobs is expanding rapidly, but institutions are struggling to develop the skills and competencies needed". p. 14

Governments and the forest industry are encouraged to work together to develop environmental leadership and investments, which will be necessary for diversifying the forest sector. In response to this crisis, some countries in the UNECE region have implemented fiscal measures to encourage a shift towards a greener economy. Part of these measures are directed to the forest sector and to promote the sustainable use of wood, in particular wood energy, a variety of other green products and services, with the objective to contribute to mitigating climate change impacts. A general overview of the forest sector's potential to contribute to a greening of the economy will be given in the following subsections while more detailed information on fiscal measures implemented by countries in the region will be examined in part four of this background paper.

3.1 Climate change and the forest sector (Kyoto and post-Kyoto)

Forests play an important role in the earth's carbon balance. They sequester carbon by taking in CO_2 from the atmosphere and transform it into biomass through photosynthesis. Forests accumulate large stocks of carbon in the form of woody biomass and through trees' roots in forest soils. In sustainably managed forests the amount of carbon that is released as a result of harvesting, is equal to or smaller than the amount taken from the atmosphere, making it 'carbon-neutral' or a 'carbon sink' in the longer term. But when forests are burned, either naturally or by man, and when deforestation and degradation occurs, then forests are responsible for greenhouse gas (GHG) emissions, in fact, 17.4% according to International Panel on Climate Change (IPCC). Promoting the expansion of sustainably managed forests could provide further carbon sinks, allowing the forest-based sequestration of carbon to contribute to offsetting global GHG emissions.

The current climate change regime represented by the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol, during the first commitment period recognized forests' role in reducing GHG emissions, through the sequestration of carbon by conserving existing carbon stocks and the enhancement of terrestrial carbon stocks.[17] Forest management is recognized along with other human-induced land use change activities. The substitution of carbon intensive materials for non-renewable fuels is also taken into account in the general accounting mechanisms.

The role of forestry arguably has been underestimated when achieving a political agreement in Kyoto in 1997. There are many values besides the forests' use as carbon sinks which needs to be included in any future climate agreement, particularly in post-Kyoto. There is an urgent need to continue to maximize the forest sector's contributions to reducing emissions and enhancing sustainable development, and to reflect this in a future climate change regime. With negotiations under way there is hope that a future climate change regime might better reflect the contributions of the forest sector in climate change mitigation.

Adverse effects of climate change, such as more frequent and stronger droughts, forest fires, storms and insect infestations have destroyed millions of hectares of forest, causing not only significant ecological and economic losses, but also the release of huge quantities of carbon. Climate change will continue to threaten forests and the benefits they provide, which includes carbon sequestration, and reducing the level of carbon in the atmosphere, one of the main drivers of climate change. Both adaptation measures, as well as longer term mitigation efforts will be crucial for minimizing the impacts of climate change on forests, so that they can continue to contribute to storing carbon and thus mitigate climate change in the long term. In the future, there will be three possible management approaches for adaptation to climate change: non-intervention; reactive adaptation, and planned adaptation. Planned adaptation involves multi-level and cross-sectoral approaches. At the community level, planned adaptation may include diversification of forest-based and non-forest based income sources,

[17] The Marrakesh accords, adopted at the Conference of the Parties to the Kyoto Protocol in 2001, specify which LULUCF activities can be included under the Kyoto Protocol, and establish rules on how these are accounted for during the first commitment period (2008-2011)

increased local Governance of local forest resources, and general capacity building for the detection and management of climate change impacts. Within the industrial forest sector, planned adaptation may include diversification of product lines to incorporate bio-energy or other emerging forest values and pro-active use of wood products' low carbon footprint as a marketing tool. At the national and global level, planned adaptation may include a timely monitoring and reporting system and the development of tools for vulnerability assessments and adaptation planning. Management might also be increasingly required to look at the global implications of actions, since forests are part of global biogeochemical cycles. Planned adaptation is a pro-active approach that permits a better use of resources and a potential overall reduction of climate change impacts. [18]

Forests and the wood they provide can serve as a renewable source of energy, and a substitute for fossil fuels. Wood is currently the most important source of renewable energy worldwide as well as in the UNECE region. In the EU27, more than 5% of primary energy is supplied by wood, which is more than all other renewables combined[19]. Using wood as a building material, in place of steel or concrete which are less eco-friendly, is in many cases more sustainable and environmentally friendly in the longer term. In most cases[20], utilizing wood from a local sustainably managed forest can be more sustainable than other materials as they have less of an environmental and life cycle impact.

3.2 Wood energy

According to the FAO *State of the World's Forests 2009* report, the "production and consumption of key wood products and wood energy are expected to rise from the present to 2030, largely following historical trends. The most dramatic change will be the rapid increase in the use of wood as a source of energy, particularly in Europe, as a result of policies promoting greater use of renewable energy."[21] Despite the global economic recession, wood energy production and consumption increased in the past two years largely because of Governments' policies to promote renewable energy sources in an effort to mitigate climate change and to improve energy security. Government's policies for promoting renewable, wood-based energy through ambitious targets if maintained will continue to lead to increasing demand for wood from Europe and possibly also from outside (e.g. trade, imports, etc.).

Wood has a significant potential to expand its contribution to renewable energy supplies within the UNECE region. Currently with a share of over 50% of renewable energy, the contribution by wood to renewable energy generation is expected to increase, especially in absolute terms, driven by renewable energy targets set by policy makers, in particular in the European Union where wood energy and other forms of bioenergy constitute an important part of the package, especially in the so-called renewables directive (European Commission, 2008)[22]. There is in particular a potential to increase the contribution by the forest sector to renewable energy generation as presently, only 60% of the increment of forests is being harvested throughout Europe. Considering the increasing demand for wood for energy, the utilisation rate could still increase without threatening sustainable forest

[18] http://www.unece.org/oes/nutshell/2009/4_ForestWoodClimateChange.pdf, p.40

[19] UNECE 2009

[20] MCPFE 2007: State of Europe's Forests. MCPFE report on sustainable forest management in Europe.

[21] ftp://ftp.fao.org/docrep/fao/011/i0350e/i0350e00c.pdf

[22] 'Continued growth expected for wood energy despite turbulence of the economic crisis: Wood energy markets, 2008-2009' in the UNECE/FAO Forest Products Annual Market Review 2008-2009, p. 99, available at: http://timber.unece.org/fileadmin/DAM/publications/Final_FPAMR2009.pdf

management. In general (with few exceptions), the ratio of fellings to net annual increment is over 50% in countries in northern and central Europe, while it is lower than 50% for countries in southern Europe.[23]

Driven by public policies, the quest for renewable energy sources is producing a structural change within the forest sector. With decreased demand for pulpwood-quality roundwood for wood and paper products in 2009, some pulpwood is being converted into wood energy. As a consequence, the competition between wood for bio-energy and for the wood-processing industry has become an increasing challenge. For instance, in spring 2009, it was more economically advantageous for forest owners in central Sweden to sell their pulplogs as energy wood rather than pulpwood[24] (Ostelius, 2009). The sound mobilisation of unused or underused wood resources on a sustainable basis will be crucial for meeting the needs of both sectors and for fulfilling the requirements of sustainable development.[25] As Governments encourage investment in building infrastructure to produce carbon-neutral wood-based fuels, it is crucial that wood energy production strikes a balance between providing an alternative to fossil fuels and promoting sustainable forest management in order to effectively mitigate climate change.[26]

Wood fibres are the most important single source of renewable energy. Woody biomass accounts for about 50% of current energy generated from renewables. Hence, the rising demand for renewable energies offers new opportunities for forest owners to diversify their buyers' portfolio – in particular for low quality assortments. In order to meet the forecasted increased wood fibre demand for both, forest based industries as well as wood energy generation forest owners will need to produce more wood. This can be achieved by increasing productivity of existing forests, or through afforestation and conversion of land use to (wood) energy crops. To achieve this in a sustainable manner will futher require improved management activities, increased harvesting efficiency and improved forest infrastructures, in particular road and railway networks and services at national level.[27] Importing sustainably and legally sourced wood, wood chips as well as processed wood fuels (e.g. pellets and briquettes), could be considered as a complementary measure that could help to satisfy the future wood fibre demand.

3.3 Green building

As energy prices and atmospheric temperatures continue to rise, energy efficiency techniques and green buildings can help reduce humanity's environmental footprint and decrease GHG and other anthropogenic emissions. Green buildings have a major role to play in mitigating the adverse effects of climate change. A study produced by the Commission for Environmental Cooperation, evaluated the impact of North American buildings and their contribution to climate change and found that in Canada and the US, commercial and residential buildings are responsible for 20 and 40% of primary energy consumption, respectively. The US Green Building Council estimates that green building, on average, currently reduces energy use by 30%, carbon emission by 35%,

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[23] State of Europe's Forests 2007, p.34, available at: http://mp3timber.mediaplan.de/fileadmin/DAM/publications/State_of_europes_forests_2007.pdf

[24] Ostelius, M.P. 2009. Bränsleved ger mer än massaved. *Skogsland*, (20/2009) in UNECE/FAO Forest UNECE/FAO *Forest Products Annual Market Review 2008-2009*, p. 101 available at: http://timber.unece.org/fileadmin/DAM/publications/Final_FPAMR2009.pdf

25 In response to this, UNECE/FAO, EFI, CEPI, CEPF, COPA-COGECA, ENFE, EUSTAFOR and MCPFE, with the support of the French Ministry of Agriculture and of CEMAGREF, organised a workshop in 2009 on "Strategies for increased wood mobilisation from sustainable sources". See: http://timber.unece.org/index.php?id=158

[26] A study by the US Department of Energy and the US Department of Agriculture determined that American forests can sustainably produce 368 million dry tons of wood for energy per year) http://www.eesi.org/040109_woodenergypotential)

[27] http://www.cepf-eu.org/artikkel.cfm?ID_art=281

and generates cost savings of 50 to 90%.[28] Construction and insulation of environmentally-sound buildings can play a major role in reducing the carbon footprint of buildings.

Worldwide, 40 to 50% of all primary energy is used in buildings.[29] Buildings also account for up to 40% of carbon dioxide (CO_2) emissions. According to current trends, the impact of the building sector is likely to increase, and could grow to 70% by 2050. In addition to direct emissions, another 8% of CO_2 emissions are due to combustion of fossil fuels and biomass for heating and cooling, as part of building operations. As unsustainable land-use patterns make urban areas even more carbon unfriendly, it is the building sector (along with other sectors) that is crucial to reducing emissions. The IPCC estimates that there is a potential to reduce approximately 29% of the projected baseline emissions by 2020 in the residential and commercial sectors.

Recent comparisons show that the production of steel and concrete as building material requires up to two times more energy than wood-based products. Extraction costs for wood such as logging and transportation are less than costs associated with mining for iron and aluminium. Wood is also a natural insulator for temperature and sound. Fire retardant-treated wood-based insulation is proving to be more economical, and more environmentally friendly than fibreglass or polystyrene. From a life-cycle perspective, building with wood can be, depending on local and climatic conditions, more sustainable than building with other materials. Green building systems employ sustainably produced wood to construct new and renovate existing buildings. Wood-framed housing is gaining market share in Europe, among others as a result of the many environmental and economic advantages of wood.[30]

European countries with green building systems include the UK, the Netherlands, Germany and Italy. Compared with North America, the situation of certified forest products in the construction sector for green building in Europe is quite divergent between countries.[31] A survey by the UNECE/FAO Certification Network indicated that green building is not yet a major topic in some countries with a high share of forest area certification such as Norway, Finland and Luxembourg. One of the reasons may be that due to the high share of certification, the use of certified wood in the construction market is self-evident. Consequently, green building is concentrating on topics such as energy efficiency rather than just on the use of certified timber.[32] Timber-framed housing in the Russian Federation is growing rapidly and has tripled in the last 10 years, albeit from a low level.

The contribution of the forest sector to building green can be significant, with wood as a renewable and more sustainable building material compared with other materials.[33] Significant opportunities are vested in green building. A study by GreenerBuildings.com found that green buildings have saved the US enough energy to avoid the equivalent of burning 1.3 million (imperial) tons of coal for electricity since the development of "green

[28] http://www.cec.org/files/PDF/GB_Report_EN.pdf

[29] UNECE/FAO conclusions to the 2008 Green Building Workshop, Rome 24 October 2008, available at: http://www.unece.org/press/pr2008/08tim_p06and08env_p16e.htm

[30] SubstitutingForSubstitutes081008 under Contribution to AR_forests and CC

[31] UNECE/FAO Forest Products Annual Market Review 2007-2008, p. 117, available at: http://timber.unece.org/fileadmin/DAM/publications/FPAMR2008.pdf

[32] *ibid*., http://timber.unece.org/fileadmin/DAM/FPAMR2008.pdf p.117

[33] This was the key message of the workshops on "*The role of wood in green building and green building effects on the forest sector in the UNECE region"* held during the European Forest Week in October 2008. The follow-up workshop on ***"****Responding to climate change: Towards a global approach to green building"* to be held on 12 October 2009, in advance of the Timber Committee session, will explore the opportunities and constraints to developing further demand for sustainably grown wood products in buildings (see background note ECE/TIM/2009/2).

building rating systems". Indeed, green building practices could cut GHG in North America more effectively than any other action, according to research from the Commission for Environmental Cooperation.[34]

3.4 Environmental services from forests

There are many values and services in forests beyond timber, and non-wood forest products which are often inadequately acknowledged by society and accounted for economically. There is some potential for recognizing the ecosystem values of forests such as biodiversity conservation, protection against erosion, watershed protection and climate change mitigation through carbon sequestration more appropriately, through economic valuation. The ecosystem services provided by sustainable managed forests are precious. Opportunities present themselves to internalize the cost of securing their provision. These are predominantly public goods and there are often no associated markets, prices and costs, and consequently, these forest environmental services are rarely accounted for in our current economic system even though they are essential to meet societies' needs, by ensuring quality of life and supporting a sustainable and green economy.

The implementation of proper mechanisms to value ecosystem services through payments for environmental services schemes (i.e. protection or improved management of a particular forest that has the highest potential to protect or enhance specific environmental services) could help maintaining biodiversity and help preserve healthy forests. It would also reinforce the protection of non-wood forest products such as valuable genetic resources that are yet undiscovered. The current economy depends upon these services provided by ecosystems without remunerating the service providers adequately. According to recent studies, ecosystem services supplied annually are worth many trillions of dollars.[35] This means that the long-term costs for not adequately valuating these services may greatly exceed the short-term benefits of economic development.

Generating adequate mechanisms to value these services can form an important emerging area of work for the forestry sector. Good practices from other sectors can be referred to such as the "PES in integrated water resources management" (UNECE Water Convention). Payments for environmental services should be regarded as one of many tools in the toolbox for good forest management and protection. The success of such mechanisms will however depend on the accurate valuation of these services and on establishing incentive structures and institutions that are both practical and equitable. Acknowledging these services would help improve sustainable forest management and therefore become an integral part of a more sustainable economy, which could benefit both the forest and the consumer.

[34] State of Green Business 2009, Joel Makower and the editors of GreenBiz.org available at, (www.greenbiz.com). p.7

[35] 'Ecosystem Services: Benefits Supplied to Human Societies by Natural Ecosystems', by Gretchen C. Daily, Susan Alexander, Paul R. Ehrlich, Larry Goulder, Jane Lubchenco, Pamela A. Matson , Jan 2007, available at, http://www.ecology.org/biod/value/EcosystemServices.html

4. POLICIES AND INSTRUMENTS TO PROMOTE THE DEVELOPMENT OF THE FOREST SECTOR IN A GREEN ECONOMY: AN OVERVIEW OF GOVERNMENTS' PRIORITY ACTIONS AND NATIONAL CASE STUDIES

To be able to realize its full potential and meet societal needs, the forest sector and the value of the products and services it provides need to be increasingly acknowledged and compensated for. The sector also needs to be able to adapt to a rapidly evolving economic context. This could involve a profound and innovative reorganization of the sector, from forest management to industries and marketing, which would ensure the efficient provision of the products and services that are requested by society, with benefits and costs fairly shared among stakeholders within and outside the sector.

Reinforcing the sector will require strong political support as well as large coordinated efforts from all stakeholders of the sector. Public policies and instruments, if well designed and implemented, can help the sector overcome its difficulties, re-emerge with its green characteristics reinforced, and fully deliver its potential benefits to society. Such results will not be reached with an isolated forest sector, but will require a strengthened coordination with other sectors and an increased integration of sectoral policies.

The following part presents an overview of policies and instruments that Governments have recently adopted and/or implemented, as well as strategies and measures that experts see as relevant, on the basis of the responses from the heads of delegation of UNECE Timber Committee and FAO European Forestry Commission to a questionnaire, as well as complementary research. Unfortunately, it is impossible to already evaluate the impacts of recently adopted policies and measures. It would be necessary to carry out such analysis at a later stage.

4.1 Limited benefits for the forest sector can be expected from the current economic stimulus plans, primarily designed to mitigate the impacts of the economic crisis

According to the information provided by national experts, in most countries, the current or planned policies and instruments that support the forest sector, and in particular enhance its green characteristics, were already put into place before the crisis, or would have been adopted anyway. Policies that support contributions by the forest sector and that are presented in the following paragraphs were often adopted as a result of the global debate on climate change, national or regional strategies for energy supply, as well as growing environmental awareness and concerns. The economic crisis has sometimes accelerated and increased this support (e.g. in the Netherlands), mainly channelled through energy policies. General economic measures, e.g. for employment, have also benefited the forest sector in some countries (e.g. Czech Republic, France, Germany).

In the following, the main features of the economic stimulus plans of the countries responding to the questionnaire sent in July 2009 are summarized.

The US passed the American Recovery and Reinvestment Act (ARRA) in 2009, commonly referred to as the US economic stimulus package. Its measures are nominally worth $787 billion. While isolating the benefits of

the ARRA for the forest sector is quite difficult[36] there are a number of provisions in the ARRA focused on helping the housing sector. These provisions include loans or tax credits to assist home buyers and home owners, and grants to state and local Governments to address foreclosures and fund low income housing. These types of measures are intended to stimulate demand in the housing sector. Energy efficiency is another key focus area for ARRA that may stimulate demand for green building. Whether channelled through state and local Governments, or directly to businesses or individuals, there are a number of programmes to encourage the use of green building materials in renovation or new construction. To the extent that wood products are used in these activities, these measures may also benefit the forest sector.

The US Forest Service received about $1.15 billion through ARRA that is being used for a variety of purposes, including hazardous fuels reduction, forest health protection, rehabilitation, and hazard mitigation activities on federal, state and private lands. The emphasis has been on investing in activities that create jobs quickly. One specific activity funded by ARRA is Wood-To-Energy and biomass utilization. Thirty projects were funded at a total level of $57 million – $49 million for wood-to-energy grants and $8 million for biomass utilization. These projects are intended to promote the development of biofuels from wood and help private sector businesses to establish renewable energy infrastructure and accelerate availability in the marketplace.

Macroeconomic responses to the crisis in European countries were weaker and implemented more slowly than in the US, and did not address specifically the forest sector. Most European economic stimulus plans included measures related to green building and renewable energy, which may positively affect wood demand. Their impact on the forest sector is however difficult to estimate.

The economic stimulus plan in Austria included a 100 million euro package to promote and subsidise thermal insulation of private homes and industry buildings. But according to the Austrian reply, the positive effect of thermal insulation to the forest industry sector, however, is likely to be marginal. The situation is similar in Sweden, where fiscal measures to stimulate renovation and reconstruction in the housing and building sector might have some, but no significant, effects on the domestic wood demand. In Ireland, stimulus measures mainly focused on building insulation and alternative energy sources, with a focus on wind energy in terms of capital expenditure, whereas wood energy received stimulus promotion to a much lesser extent. The Swiss stimulus package includes support to renewable energy plants, as well as renovation of existing buildings for energy savings, for which wood has good chances to be used. However, only a slight increase of demand for wooden products in buildings is expected, with fewer benefits for domestic production due to imported materials.

France announced in May 2009 an ambitious plan for the development of its forest sector, as a response to the impacts of the economic crisis on the sector, amongst other reasons including the devastating windthrow mentioned above. It relies on the four main strategic lines: (1) strengthening forest industries, by creating a fund, mainly private, to support investments in forest products industries and wood energy; (2) developing the use of wood in the building sector by multiplying by ten the minimum level of wood used in buildings, facilitating insulation work that requires wood, revising norms and regulations that restrict the use of wood in construction; (3) developing the uses of wood for energy through a fund that will provide subsidies for boilers and increasing the guaranteed purchase rates for electricity produced from wood; (4) revising management requirements and options for private forests, with simplified services offered to forest owners as well as subsidies and fiscal measures to support owners that actively manage their forest.

[36] More information on ARRA is available at http://www.recovery.gov/?q=content/act

4.2 Strong support for forest sector expected from policies enhancing its contribution to climate change mitigation

4.2.1 Promoting the use of wood through renewable energy policies

Wood energy is the only market sector that was not affected by the economic crisis in the UNECE region. Wood energy policies and measures had already been adopted and successfully implemented before the crisis.

The EU is committed through its "Climate action and renewable energy package" (Directive on Electricity Production from Renewable Energy Sources, known as RES Directive), adopted in 2009, to reducing its overall GHG emissions to at least 20% below 1990 levels by 2020, and is ready to scale up this reduction to as much as 30% under a new global climate change agreement when other developed countries make comparable efforts. It has also set itself the target of increasing the share of renewables in energy use to 20% by 2020 (share of biofuels in transport fuels up to 5.75% in 2010 and 10% in 2020, share of renewables in electricity up to 21% in 2010, no target for heating). In April 2009, the European Commission admitted that the European Union is unlikely to meet its goal of sourcing 12% of its energy from renewables in 2010, but insisted that the EU's new Renewable Energy Directive gives it sufficient power to ensure national compliance.

As per the Biomass Action Plan adopted by the EU in 2005, countries were requested to develop National Biomass Action Plans, with the objective of increasing the use of biomass for energy in the EU from 69 million tons of oil equivalent (Mtoe) to 150 Mtoe in 2010. The new Directive on Renewable Energy has incorporated and updated these targets. EU member states are now requested to submit their National Renewable Energy Action Plans to the European commission. In these Action Plans, countries are requested to precisely describe the current national situation and how they expect to achieve the specific national target.

Substantial measures put into place in European countries to promote wood energy are for instance investment in wood energy infrastructures and guaranteed high prices for electricity and energy produced from solid biomass by feed-in tariffs (Germany, Czech Republic).

In the Netherlands, the forest sector has concluded a covenant with the Ministry of Agriculture, Nature and Food Quality to stimulate the input of biomass from Dutch forests and nature areas, with the aim of producing 32 petajoules of renewable energy in 2020. In the framework of its policy towards a "Bio-based Economy", the Dutch Government is investing in research programmes on the conversion of biomass into fuels and other chemicals, with a budget of 400 million euros.

The UK Government intends to introduce a scheme, "A Renewable Heat Incentive", which would raise the level of support to households, communities and businesses to enable the greater use of heat generation from renewable sources. Available from April 2011, the proposal is to provide monetary incentives to convert heating systems from non-renewable sources to renewable sources, including wood. In France, recent political commitments include reinforced incentives to develop wood energy, such as subsidies to wood-based heating systems through a "heat fund" and higher guaranteed purchase rates for electricity produced from wood. In Belgium, fiscal advantages encourage the purchase of wood and pellets boilers.

Switzerland adopted in 2008 a Wood Resource Policy that supports the consistent but sustainable utilization of wood from domestic forests and the ecologically and economically sound use of wood. One of the main objectives of this policy is to increase the use of forest fuel wood for energy, slash and waste wood, with targets of

using 2.7 to 3.2 million cubic meters of forest fuel wood per year, and increasing by 50% the volume of waste wood that stays in Switzerland and is used for energy generation (from 400,000 in 2005 to 6,000,000 metric tons in 2020). A wood action plan was established to facilitate the target-oriented implementation of these objectives.

Italy and Sweden give political priority to renewable heat generation from renewable energy sources such as woody biomass by taxing fossil fuels. Hence, Italy taxes light heating oil similar to diesel fuel. Consequently, Italians pay by far the highest price for light heating oil in Europe and the domestic market for wood pellets is developing very fast.

In the US, wood energy programs have been funded through the American Recovery and Reinvestment Act (see IV.a). Other Government policies may have longer term effects on the forest sector. The Energy Independence and Security Act (EISA) of 2007 requires an increase in energy from renewable sources, including biofuels. Regulations on sources of biomass that will qualify for incentives to produce wood-based energy under the EISA are out for public review. The final decision on what types of forest and which forest owners can qualify for incentives will have important implications for forest management.

4.2.2 Promoting the use of wood as a renewable material, in particular for green building

In the UNECE region, the importance of green building for climate change mitigation and the use of wood as a material of choice are becoming increasingly recognized.

Many countries are promoting energy-savings through a better insulation of buildings (e.g. Czech Republic, France, Ireland, Sweden and Switzerland). As wood has good insulation properties and other environmental advantages compared to many other building materials, it should benefit from these incentives.

The UK Government is developing green building as part of its policy of transition to a low-carbon economy. A Code for Sustainable Homes was introduced before the economic downturn, as a mechanism to promote the building of homes that are more energy efficient and, through reductions in carbon emissions during construction and later in use, are less damaging to the environment. The Belgian Government has set up fiscal advantages for passive buildings, i.e. ultra-low energy buildings that require little energy for space heating or cooling.

In France, the Government is notably committed, through the legislation adopted as a result of a public consultation on environmental challenges (*Grenelle de l'Environnement*) to promoting the use of certified wood in public construction from 2010 onwards. The objective of this measure is to adapt construction norms so that they specify higher minimum levels of the use of wood in new buildings, and to support the creation of a related label. In its new Wood Resource Policy, Switzerland set a target of increasing the proportion of wood in all new buildings by 50% between 2005 and 2020.

The Swedish Government has allocated 5.5 million SEK to the 3-year project “Wood City 2012” (*Trästad 2012*), which will disseminate knowledge on modern, industrial and climate-adapted use of wood in construction. Other public sponsors include municipal, county and regional administrations and the European Union. Private investors are expected to contribute 30 million SEK to the project, which has a total budget of 77 million SEK.

4.2.3 Enhancing carbon sequestration by forests

Most countries have already taken into account the importance of the carbon sequestration function of forests in their forest policy, and consider the issue as highly relevant in the framework of ongoing negotiations on climate change and future commitments on reducing GHG emissions. However, few countries are already valuing the carbon sequestered in their forests.

The main international agreement that includes forest and climate change related activities is the Kyoto Protocol to the UN Framework Convention on Climate Change. Annex B countries which ratified the Protocol (industrialized countries of the UNECE region except the US) must include in their GHG accounting and reporting the stock changes and non-CO_2 emissions for new forest areas (afforestation and reforestation created since 1990 or deforested since 1990) between 2008 and 2012. Countries may also elect to include carbon stock changes and non-CO_2 emissions for areas subject to forest management, up to a negotiated cap, which is in most cases a fraction of the reduction commitment. In case of non-Annex B countries, the scope of forest-related activities that can be included into GHG accounting is limited to afforestation and reforestation projects under the Clean Development Mechanism (CDM), up to a limit of 1% of the Annex B countries' total emissions in 1990.

Central to the EU strategy for GHG emissions reduction presented in its climate action and renewable energy package (RES Directive) is a strengthening and expansion of its Emissions Trading System (ETS). On the one hand, the forest sector may be impacted by emissions reductions targets, but on the other hand, the sector could benefit from the possibility to market credits generated by reforestation or afforestation projects under the ETS scheme.

The UK Government is working actively on issues related to carbon sequestration in forests. The transition of the UK to a 'low-carbon economy' has been set out in a Government document that urges the need for more woodland creation in order to sequester carbon, in addition to highlighting the use of wood for energy and as a building material to reduce overall CO_2 emissions. The carbon stored in both trees and wood products is accounted for by the system that the UK uses to record and report its GHG emissions. In 2009, a draft Code of Good Practice for Forest Carbon Projects, published by the Forestry Commission is intended to increase confidence in woodland creation projects by providing guidance on how to properly account for stored carbon, and by setting out requirements that projects must meet to become accredited.

In addition, in early 2009, Forestry Commission Scotland published a climate change action plan for the period 2009-2011. Scotland has the greatest capacity within British forests to absorb carbon dioxide from the atmosphere. The action plan describes the Commission's strategy to increase the contribution of Scottish forestry to the challenges of climate change and focuses on priorities for early actions and future readiness. Key actions include creating new woodland to increase the potential for forests to absorb CO_2, in addition to expanding the use of woodfuel and timber in place of more carbon intensive materials.

In 2006, forests in the UK removed about 15 million tons of carbon dioxide from the atmosphere and considerable potential exists to extend this into the future. Due to the scale of forest cover in Scotland and the types of species that it includes, capacity exists to remove CO_2 from the atmosphere. A sustained planting programme of 10-15,000 hectares of new woodland per year in Scotland could result, by 2050, in a further 5 million tons of CO_2 per year being absorbed. Initial estimates in England indicate that planting an additional 10,000 hectares per year for the next 15 years could absorb up to 50 million tons of CO_2 by 2050.

Further woodland planting and use of wood fuel and wood products would support additional income and employment in woodland creation, management, felling and processing, as well as in industries related to the use of wood fuel and timber. Woodland creation offers opportunities for forest owners and managers to generate income by selling carbon credits on the voluntary market (UK forestry does not have access to regulatory carbon markets). Tree planting also helps to improve living and working environments in rural and urban areas, by supporting incomes, creating employment and enhancing welfare.

In the US, climate change legislation is being considered by the US Congress. A cap and trade approach is expected, but the role of forests and agricultural land in providing carbon offsets is still being debated. The outcome of this legislation will affect the role of carbon markets in the management of US forests.

4.3 Policies to support forest ecosystems' vitality and services need policy priority

Among responses provided by national exerts, environmental services provided by forests (other than carbon sequestration) are rarely mentioned as a policy priority in the context of a green economy. The importance of environmental and other services provided by forests, as well as the need to remunerate them, is highlighted by some countries (e.g. by Cyprus, Czech Republic, France), often without linking it to concrete measures. In Switzerland, the stimulus programme adopted in response to the crisis mentions an objective of increasing biodiversity but the extent to which forests will be affected is still under discussion. A measure was also considered to improve the quality of young forest stands, but was rejected. In Belgium, since the adoption of a new forest law in 2008, there are no more inheritance rights on standing trees, which is considered as a "fiscal payment" for the environmental services of forests. The Czech Government offers subsidies to promote some ecological and nature-friendly forest operations as well as more ecological machinery and forest infrastructure, which is a way to improve the vitality of forests and their ability to provide services such as water protection.

4.4 Complementary strategic measures

In addition to measures directed at promoting specific forests' functions and products that contribute to greening the economy, experts suggested the following strategies and measures, which are crucial for enabling the forest sector to realize its full potential.

4.4.1 Encouraging wood mobilization

Experts from several countries highlighted the need for increasing wood mobilization, in particular by encouraging private forest owners to manage and exploit their forest resources, as well as by improving and supporting forest operations and logistics efficiency (e.g. Austria, Czech Republic, Estonia, France and Switzerland).

In France, new legislative measures were adopted in 2008 following the *Assises de la forêt* that encourage forest management and exploitation, in particular by facilitating management contracts, including group contracts for both privately and publicly owned forests, and by supporting roundwood transport. In the legislation adopted as a result of the *Grenelle de l'Environnement* in August 2009, France committed to mobilizing more wood from its forests and to facilitate its storage and marketing, in the framework of sustainable forest management.

One main objective of the Swiss Wood Resource Policy is to sustainably use the wood production potential of Swiss forests more fully by improving the efficiency of the Swiss forestry sector. The target is to harvest 8-8.5 million m^3/year, compared with 7.2 million m^3/year reported in 2000). Specific measures are directed to support private forest owners, which focus on raising their awareness and providing them with information on sustainable forest management practices.

4.4.2 Promoting the use of sustainably produced wood

Various strategies and means for promoting the use of sustainably produced forest products were reported or suggested by national experts:

- *Communicating and raising awareness among citizens on the beneficial roles of forests, their products and services*

- *Influencing policy processes*

Forest-based industries have a vested interest in the promotion of 'green building' initiatives and greater efficiency in the use and recycling of wood products. Industries can take action to influence the policy process and support efforts to establish a low carbon economy. In the UK, bodies such as the UK Timber Frame Association, the Wood Panel Industries Federation and the Wood Recycling Association are planning joint programmes to permit an increased flow of recycled wood away from landfill and into more productive and environmentally beneficial uses.

- *Promoting forests and forest products certification*

In Switzerland, forest managers and companies consider that forest certification is an instrument for long-term strengthening of the forest sector, but the certification costs would have to be substantially decreased to pay off the initial investment.

In the legislation adopted following the *Grenelle de l'Environnement*, the French Government committed to promote forest certification and the use of certified wood or wood from sustainably managed forests in public buildings from 2010 onwards.

- *Combating imports of illegal wood*

Both the European Union (*Due Diligence Regulation*) and the US (*Lacey Act Amendment*) are legislation directed at combating the imports of illegally harvested wood. Reducing the illegal wood in domestic markets is a way to enhance the use of domestic resources, and thus support national forest sectors. Switzerland is also considering introducing an obligatory declaration of the origin for wood and wooden products and is, in the meantime, awaiting the EU's final legislation.

- *Adopting public or Government procurement policies*

The purchase and use of wood by public organizations can have a significant impact on wood markets. The French and Swiss Governments are committed to increasing the use of wood in public buildings. The Dutch Government has set up a public procurement system for a range of products including wood and paper products. A Timber Procurement Assessment System for the Netherlands was introduced in 2008, which does not specifically target certified wood products. The UK Government's timber procurement policy previously required its departments to actively seek to purchase legal and sustainable timber and timber products. Since April 2009, the policy demands that central Government departments, their executive agencies and non-departmental public bodies procure all timber and wood-derived products from either independently verifiable legal and sustainable sources or FLEGT[37]-licensed timber. Timber that only meets the legality criteria will be accepted in special cases only. As an alternative, contracting authorities can demand recycled timber.

4.4.3 Cross-cutting measures

The following cross-cutting measures were suggested to support the entire forest sector:

- *Encouraging research and innovation in both forestry and wood industry*
- *Developing education and training*
- *Enhancing cooperation within the sector and with other sectors.*

5. CONCLUSIONS

The global financial and economic crisis has negatively impacted the forest sector in the entire UNECE region, with some countries being more affected than others. The crisis has resulted in important currency exchange rate fluctuations, especially affecting the trade of wood and paper products. This has challenged the competitiveness and changed trade patterns of the countries in the UNECE region and with its trading partners outside the region. Social consequences have also been severe, as the economic downturn has resulted in job losses in the entire sector. The forest sector and related markets have changed not only with the current crisis, but also as a result of policies, in particular those adopted to overcome the crisis and face energy challenges. For example, the common belief that a cascading use of wood, promoting it for its highest values first, before eventually reusing and recycling it, and finally combusting the remaining fibres, in some cases has been overshadowed by the response to targets for greater renewable energy.

The various stimulus packages directed at assisting national economies in recession have not been sufficient for the forest sector to fully recover from its difficulties, despite early signs of stability and improvements in some economies. So far, only a small share of stimulus packages implemented by Governments is benefiting the forest sector. Many fiscal measures have been directed at developing the energy and building sectors, which to some extent will benefit the forest sector, however, the amounts given to the forest sector and the environmental sector

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in general are only minimal compared to the tremendous amount of fiscal measures directed at sustaining other economic sectors, including those that may cause damage to the environment and society in the long-term.

The forest sector has a strong potential to contribute to a greener economy and a more sustainable society, in particular by securing employment, and providing renewable climate-friendly products (e.g. timber for buildings, wood for energy) and a variety of other services. If a more sustainable society is to be achieved, there is definitely a need to re-focus the global economy towards investments in natural infrastructures and renewable sources of energy and material, such as forests, as well as green industries and technologies. These are conducive to sustainable development and the achievement of the UN Millennium Development Goals.

The long-term development of the forest sector and its ability to improve social welfare will depend on, among others, the extent to which its roles are recognized, and supported by political will and adequate policies. The future of the forest sector, however, will not only be determined by Governments' will to place the sector as a priority in its agenda, but also by the sector's ability to improve the efficiency of wood use and to continue developing innovative and better marketed products in order to seize the opportunity of growing demand for green products. Increasing cooperation with other sectors, such as energy, building and water management, will be essential.

This paper has brought together the responses from Governments to the questions below, and broadened the discussion with other sources. The objective of the paper was achieved if delegates to the Policy Forum are inspired to debate the opportunities for improving the forest sector. The gist of the questions remains a basis for the Forum's debate:

1. How can the forest sector enhance its contribution to a green economy?

2. How can the forest sector benefit from increased green public spending in related fields, such as environment, energy and water, as well as direct stimulus measures to the sector?

3. How can the forest sector be proactive and influence policy-making processes to its benefit, both alone and with other sectors?

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ANNEX (TO THE BACKGROUND PAPER)

Table 1

Apparent consumption of sawnwood[a], wood-based panels[b] and paper and paperboard in the UNECE region, 2004-2008

							Change 2007 to 2008	
	Thousand	*2004*	*2005*	*2006*	*2007*	*2008*	*Volume*	*%*
Europe								
Sawnwood	m^3	114 572	116 376	116 777	124 418	111 278	-13 140	-10.6
Wood-based panels	m^3	62 695	65 234	67 961	75 105	71 896	-3 209	-4.3
Paper and paperboard	m.t.	91 756	94 819	98 229	99 670	96 027	-3 644	-3.7
Total	m^3 EQ[c]	594 681	612 013	628 578	657 119	618 609	-38 510	-5.9
of which: EU27								
Sawnwood	m^3	101 423	102 491	102 729	110 485	97 765	-12 720	-11.5
Wood-based panels	m^3	56 078	57 258	60 052	66 109	62 681	-3 428	-5.2
Paper and paperboard	m.t.	85 308	86 802	90 158	90 666	87 511	-3 155	-3.5
Total	m^3 EQ[c]	541 196	549 858	566 084	589 909	553 374	-36 534	-6.2
CIS								
Sawnwood	m^3	12 336	13 380	14 122	15 389	16 306	917	6.0
Wood-based panels	m^3	9 132	10 251	11 645	13 609	14 300	691	5.1
Paper and paperboard	m.t.	6 763	7 450	8 190	9 000	8 973	-27	-0.3
Total	m^3 EQ[c]	57 274	63 065	68 993	76 909	79 389	2 480	3.2
North America								
Sawnwood	m^3	154 644	157 372	149 677	134 146	110 466	-23 680	-17.7
Wood-based panels	m^3	66 524	69 070	69 033	61 639	49 936	-11 703	-19.0
Paper and paperboard	m.t.	98 614	98 603	98 080	96 187	89 028	-7 159	-7.4
Total	m^3 EQ[c]	688 169	696 571	682 428	639 330	558 448	-80 882	-12.7
UNECE region								
Sawnwood	m^3	281 552	287 128	280 576	273 954	238 051	-35 903	-13.1
Wood-based panels	m^3	138 351	144 555	148 639	150 353	136 131	-14 222	-9.5
Paper and paperboard	m.t.	197 133	200 872	204 500	204 858	194 028	-10 830	-5.3
Total	m^3 EQ[c]	1 340 125	1 371 649	1 380 000	1 373 358	1 256 446	-116 912	-8.5

Notes: [a] Excluding sleepers. [b] Excluding veneer sheets. [c] Equivalent of wood in the rough. CIS sawnwood consumption is based on secretariat estimates, explained in detail in chapter 5, section 5.3.

Sources: UNECE/FAO TIMBER database and secretariat estimate, 2009.

Some facts about the Timber Committee

The Timber Committee is a principal subsidiary body of the UNECE (United Nations Economic Commission for Europe) based in Geneva. It constitutes a forum for cooperation and consultation between member countries on forestry, the forest industry and forest product matters. All countries of Europe, the Commonwealth of Independent States, the United States, Canada and Israel are members of the UNECE and participate in its work.

The UNECE Timber Committee shall, within the context of sustainable development, provide member countries with the information and services needed for policy- and decision-making with regard to their forest and forest industry sectors ("the sector"), including the trade and use of forest products and, when appropriate, will formulate recommendations addressed to member Governments and interested organizations. To this end, it shall:

1. With the active participation of member countries, undertake short-, medium- and long-term analyses of developments in, and having an impact on, the sector, including those offering possibilities for the facilitation of international trade and for enhancing the protection of the environment;
2. In support of these analyses, collect, store and disseminate statistics relating to the sector, and carry out activities to improve their quality and comparability;
3. Provide the framework for cooperation e.g. by organizing seminars, workshops and ad hoc meetings and setting up time-limited ad hoc groups, for the exchange of economic, environmental and technical information between governments and other institutions of member countries required for the development and implementation of policies leading to the sustainable development of the sector and to the protection of the environment in their respective countries;
4. Carry out tasks identified by the UNECE or the Timber Committee as being of priority, including the facilitation of subregional cooperation and activities in support of the economies in transition of central and eastern Europe and of the countries of the region that are developing from an economic perspective;
5. It should also keep under review its structure and priorities and cooperate with other international and intergovernmental organizations active in the sector, and in particular with the FAO (Food and Agriculture Organization of the United Nations) and its European Forestry Commission, and with the ILO (International Labour Organization), in order to ensure complementarity and to avoid duplication, thereby optimizing the use of resources.

More information about the Committee's work may be obtained by writing to:

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The Forest Sector in the Green Economy

The Forest Sector in the Green Economy sums up key elements and conclusions of the presentations and discussions that took place during the Policy Forum "The Forest Sector in the Green economy" held on 15 October 2009 during the UNECE Timber Committee's annual session. This Geneva Timber and Forest Discussion Paper captures the essence of the debates with summaries and references from all available presentations.

UNECE Timber Committee and FAO European Forestry Commission

Further information about forests and forest products, as well as information about the UNECE Timber Committee and the FAO European Forestry Commission is available on the website www.unece.org/trade/timber

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