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Forest information, reporting and outlook

Contribution to the eleventh session of the United Nations Forum on Forests (UNFF11)

Note by the secretariat

Summary

At their joint session in Rovaniemi in December 2013, the Committee and the Commission mandated the Joint ECE/FAO Forestry and Timber Section to develop a study on progress towards the achievement of the global objectives on forests and SFM. This document presents an overview of the main descriptive/analytical part (Chapter 2) and a draft list of challenges and opportunities (Chapter 3), revised to take into account comments by participants in a workshop which reviewed the first draft.

Delegates are invited to take note of the information document and provide the secretariat with guidance and advice on further work to be undertaken for the finalization of the study.

I. Introduction

1. At their joint session in Rovaniemi in December 2013, “The Committee and the Commission mandated the Joint ECE/FAO Forestry and Timber Section to develop the study on progress towards the achievement of the global objectives on forests and SFM, and on challenges for forests and the forest sector in the ECE region and to submit the draft of the study for comments to member States during 2014, in order to issue the final study in time for it to be presented at the 11th session of the UNFF in mid2015”. (ECE/TIM/2013/2 para. 62)

2. During 2014, data have been collected and analysed, and a draft prepared, which was reviewed at a two day workshop (21-22 October) by the joint ECE/FAO Team of Specialists on Monitoring Sustainable Forest Management. This paper contains an overview of the main descriptive/analytical part (Chapter 2) and a draft list of challenges and opportunities, revised to take into account the comments by workshop participants. The session in Kazan is invited to review and comment on this draft. The rest of the draft study, as submitted to the team of specialists, but not yet modified to take account of the discussion of the team, can be obtained from the secretariat

3. Simultaneously, between mid October and end November:

- (a) Countries are being invited to check the data used for their country;
- (b) The draft study is being revised to take account of the suggestions of the team of specialists;
- (c) Countries are being asked to comment on the draft texts.

4. The intention is to finalise a text in early December, taking account of the above processes, and comments made in Kazan, which will then be submitted for approval by the joint bureaux. After layout and printing, the study would be made available to the delegates to UNFF11 in early 2015, so that they would have time to absorb its contents while preparing their review of the International Arrangement on Forests, which includes the Non-legally Binding Instrument on All Types of Forests, whereby Governments commit themselves to achieving the four global objectives.

II. Overview of progress towards global objectives on forests

5. The global objectives are not expressed as quantified targets, and do not contain a specific monitoring mechanism. Therefore to assess progress towards them in an objective way, it has been necessary to formulate questions, relevant to the global objectives, which can be answered in a quantified and objective way. Taken together, the answers to these questions provide the elements of an objective assessment of progress towards the global objectives by the ECE region.

6. The section below presents an overview, organised around these questions of the detailed data presented in chapter 2 of the draft study which will be included in the complete study. As this is an overview, it presents only a few figures and does not discuss background and data quality and other necessary aspects, which will of course be addressed in the full study. The study analyses data according to four country groups: ECE East (Belarus, Republic of Moldova, Russia, Ukraine), ECE South East (countries of Central Asia and Caucasus, Turkey), ECE Central (other European countries, including all of EU-28 countries) and ECE West (Canada and USA).

A. Global objective 1: reverse the loss of forest cover worldwide through sustainable forest management, including protection, restoration, afforestation and reforestation, and increase efforts to prevent forest degradation

1. Has forest cover in the ECE region expanded or declined? What have been the contributions of afforestation and reforestation?

7. Forest cover has been expanding in all parts of the region for several decades. The net increase between 2000 and 2015 was 27.5 million ha, or 1.5% of the total area of forest and other wooded land in 2000, although deforestation occurs alongside forest expansion. Forest and other wooded land area now totals 1.88 billion ha. Natural expansion onto former agricultural land, driven notably by economic factors, agriculture policy and rural depopulation, accounts for most of the increase, but afforestation in the context of public programmes has played a significant role in some countries, although the latter is declining in ECE Central. Reforestation, in the sense of establishing forests on areas where forest had recently been removed, is not significant in this context of expanding forest cover, although regeneration – replacing forest cover which has been temporarily removed through harvest or damage – is an essential part of sustainable forest management in the ECE region.

2. What are the major biomass and carbon stocks and flows connected to forests of the ECE region, and what has been the role of forest management in the development?

8. The total amount of carbon in aboveground living biomass in the ECE countries amounts to 64.3 Gt (billion tonnes) of carbon, more than 80% of which is found in three countries, Russia, Canada and USA. The stock of carbon in harvested wood products in the region is over 5 Gt. The total forest biomass carbon sink – the carbon sequestered each year by ECE region forest ecosystems - in ECE forests amounts to 255 Million tonnes carbon per year between 2005 and 2010. The ECE forests are a significant carbon sink although there is uncertainty, over its size, and its underlying causes. Forest management has the possibility to continuously maintain a carbon stock over larger forest estates, while at the same time sustainably producing wood products and biomass for bioenergy. However, in the large regions of ECE West and ECE East, the size of the sink seems difficult to control. There is a risk of unintended carbon emissions through fire, insects, wind etc. These disturbances as well as other trends, notably the increase in average age of forests are indications that at some point the sink will saturate. In recent years, the sink size has not increased in ECE East and Southeast.

3. What is the area of sustainably managed forest in the ECE region, and how fast is it increasing?

9. Three ways have been used in the study to estimate the trends in area of sustainably managed forest:

(a) About 80 per cent of the ECE forests are already under forest management plans or equivalent and there has been only a marginal increase in the area. Forests without management plans tend to be small, and with weak/absent ownership;

(b) The area of forests certified as sustainably managed in the ECE region was 383 million ha, of which more than half is found in the two North American countries, and 28 per cent in the ECE Central. The ECE region as a whole accounted for 88 per cent of the world's certified forest area in 2014. Between 2006 and 2013, the certified area in the ECE region expanded by 45%;

(c) Almost all ECE member countries are members of one or more regional processes of criteria and indicators of sustainable forest management, notably the Montréal Process and FOREST EUROPE. The widespread use of these criteria and indicators sets is

in itself an indication of high level policy concern for sustainable forest management, although challenges remain for implementation.

10. These are all measures of management, and not a direct measurement of results. Nevertheless, taken together, these trends indicate that there are very significant areas of sustainably managed forest in the ECE region, and that this share has been growing over the past two decades – or that there is a stronger ability and determination to demonstrate this trend.

4. How much forest degradation is taking place in the ECE region, and what protection and restoration is being undertaken?

11. There is no objective information on forest degradation as there are major problems of definition and measurement. It is clear however that in the ECE region there are local or regional occurrences of forest degradation from a variety of causes including fire and insects but also fragmentation around urban areas, mining, radiation, land mines and other damage from war and conflict.

B. Global objective 2: enhance forest-based economic, social and environmental benefits, including by improving the livelihoods of forest dependent people

1. Have the economic benefits supplied by ECE region forests increased or decreased?

12. Harvests have recovered partly after the slump in 2008-2010 and the forest sector's contribution to GDP has also increased in absolute terms, but its share in total national GDP has declined. However, employment in the forest sector has fallen, notably because of higher labour productivity. The recession which started in 2008 has also increased unemployment and economic hardship in forest dependent communities and regions. Forests also supply considerable benefits through the provision of commercial recreational opportunities and non-wood forest products for consumption or sale, though quantitative measures of these benefits for the ECE region as a whole are lacking.

2. Have the social benefits supplied by ECE region forests increased or decreased?

13. There has probably been increased access to forests for recreation, as more people in urban areas use forests. Forest management planning increasingly recognises amenity and use values. However, forest fragmentation and degradation of forest health may be reducing the social benefits available in some areas. Declines in employment and livelihood also reduce social benefits. Safety and health of forest workers are a cause for concern.

3. Have the environmental benefits supplied by ECE region forests increased or decreased?

14. The area of protected forests has increased and supply of environmental benefits is increasingly considered in management strategies. Conservation credit exchanges and payment for environmental services are discussed a lot, but are still rare in practice. There is continuing pressure on forest habitats. Forest fragmentation, degradation and the conversion of primary forests to secondary or plantation forests will also reduce the supply of environmental benefits, particularly in regard to the conservation of native biodiversity.

4. Have the livelihoods of forest dependent people been improved?

15. This issue is being increasingly recognised in the ECE region, but so far has been little analysed. Endemic poverty persists in many indigenous communities and other rural

forested areas. Trends in livelihoods of forest owners are not clear. Sharp declines in forest sector employment have resulted in reduced livelihoods and caused hardship to unemployed workers and their communities, particularly in timber dependent areas.

C. Global objective 3: increase significantly the area of protected forests worldwide and other areas of sustainably managed forests, as well as the proportion of forest products from sustainably managed forests

1. Has the area of forests protected for conservation of biodiversity, including by active management, increased or decreased?

16. Integrated forest management approaches, emphasizing the biodiversity component, have expanded in the whole ECE region during the last 20 years. The benefits for biodiversity can already be seen in the recorded increase of the dead wood component in commercially managed semi-natural forests. In 2015 about 11% of the forest area in the ECE region is designated for protection of biodiversity. The area of forests protected for biodiversity has increased continuously during the 20 years period in the whole ECE region. In several ECE countries the international commitments on biodiversity have been fully or nearly achieved.

2. Has the share of consumption of products from sustainably managed forests increased?

17. There are many indications that the share of consumption of forest products from sustainably managed forest has in fact increased strongly over the last decade. The potential supply of certified forest products increased by about 30% between 2007 and 2013, and is about 490 million m³. The number of chain of custody certificates grew even faster: the total (FSC+PEFC) was 27,624 in mid 2014, 3.5 times more than in 2006. In addition, an increasing number of public sector initiatives are promoting consumption of sustainably produced forest products and discouraging unsustainably produced forest products, notably the US Lacey Act and the EU Timber Regulation, and changed rules for green public procurement. There have also been numerous private initiatives, including private procurement rules, green building initiatives and codes of conduct.

D. Global objective 4: reverse the decline in official development assistance for sustainable forest management and mobilize significantly increased, new and additional financial resources from all sources for the implementation of sustainable forest management

1. What are the trends for official development assistance (ODA) for sustainable forest management?

18. The total annual bilateral ODA to forestry from the ECE countries averaged nearly USD 1 billion in 2011-2012, more than five times the volume in 2005-07. In 2009-12 the ECE countries represented 75-80% of the total bilateral forestry ODA. It can be assumed that part if not most of the increase in forestry ODA has been “new and additional”, often reported under other headings, such as climate change (e.g. REDD+), as well as multi lateral development assistance.

2. What financial resources from all sources have been supplied for the implementation of sustainable forest management inside the ECE region?

19. Domestic public financing includes budgets for state forest organisations (when they are not self supporting), support to R&D and transfer payments to private owners, typically as an incentive for various silvicultural activities. Payment for environmental and social services provided by forests is being developed slowly. Most private financing has come from private forest owners, notably through wood sales revenue. Many forest industry firms no longer finance forestry themselves. However investment by private financial institutions, e.g. pension funds, through specially designed financial instruments, is rapidly growing in importance. Investor capital now placed in timberland is estimated at USD 70-80 billion, for a total area of about 12 million ha, of which 73% in the USA. The private financial sector is emerging as one of the most potent potential allies through its support to sustainable forest management.

III. Challenges and opportunities for the ECE region in implementing the Global Objectives

20. On the basis of the developments summarized above, as well as the outlook and policy commitments by ECE member countries, a number of major challenges for ECE region forest sector have been identified. They are set out below. Some refer only to one global objective, but most, like the Objectives themselves, are interconnected, and address cross-sectoral issues, as well as governance and policy. Each challenge focuses on one idea, although there are many interlinkages: these are not explored in detail here, as this would reduce the impact of the challenges

21. The challenges set out below are all important, there is no order of priority. It should also be stressed that these are challenges, which are by definition difficult to achieve, and not formal commitments by ECE governments or stakeholders.

A. Protect the forests and prevent forest degradation

22. Forests all over the region are threatened by biotic and abiotic causes which can cause stand destruction and carbon release. Fire damages 5.5 to 8.0 million ha every year, insects damage many million more, with massive infestations in some areas. Incidents of windthrow appear to be becoming more frequent and causing greater damage. While some degree of damage by fire, insects and wind/snow is a part of natural ecosystem processes, there are indications that the severity and frequency of these events is increasing, and may be partly attributed to climate change. Illegal logging is a problem in some parts of the ECE region, and can also damage forests. Forest land is converted to other uses as a consequence of urban expansion and infrastructure development. Forest degradation occurs in some regions, for instance because of fragmentation around urban areas. All these types of damage reduce the forest's ability to satisfy all its functions, whether wood production, biodiversity, recreation or carbon storage. At present, carbon emissions from forest damage do not change the region's overall position as a forest carbon sink, but it is by no means impossible that certain parts of the region, notably boreal regions and those vulnerable to fire, could become carbon sources, with major consequences not only for forest management, but also for the global carbon balance.

23. Governments and forest managers must adapt to the consequences of climate change and other harmful trends, and act to minimise forest damage. They must act strategically to protect the forests of the ECE region from all threats, notably those linked to climate change, and increase the resilience of forests faced by changes which are hard to predict at present. Examples of measures to be applied after the damaging event are fire management, fighting insect infestations, or clearing windblow. However, forest management should be geared above all to measures to prevent such damage, by creating a resilient forest, for instance through preventing invasive alien species, or choosing species in the light of

possible future climatic conditions. Strategies should be adaptive: their success or failure should be monitored, and the strategies changed if necessary.

24. The challenges facing Governments and forest managers are to:

- (a) Review protection strategies to ensure they address likely future threats, including those linked to climate change,
- (b) Make available sufficient funds to protect the region's forests,
- (c) Develop and apply adaptive disturbance management and silvicultural strategies, changing them in the light of changed circumstances and results of monitoring.

B. Maintain and improve forest biodiversity, through protected areas and active management

25. The area of forest in the ECE region protected for biodiversity conservation has been increasing steadily, and integrated forest management, whereby conservation functions are integrated into management along with the other forest functions, is increasingly applied. The levels of deadwood in ECE forests are rising steadily. However, the Aichi targets for biodiversity conservation have not yet been reached in all countries of the region, and many forest dependent species are still threatened. It is also not yet clear to which extent the different forest ecosystem types are properly protected, something which is not demonstrated by a national average. There is clearly still the potential to improve forest biodiversity in all parts of the region, by expanding protected areas, where necessary, and by expanding the use of integrated management in forests outside protected areas.

26. The obstacles to improving forest biodiversity are financial, and regulatory, notably with respect to improving biodiversity on privately owned forests. It is also necessary to build consensus about which areas should be managed exclusively for biodiversity, and which through integrated management.

27. The challenge with regard to biodiversity is ensure that international commitments, notably the Aichi targets, are met, that all forest ecosystem types are properly covered in protected area networks, and that biodiversity is maintained and improved also on multi-functional forest land. It is also a challenge to monitor progress with regard to forest biodiversity, and to base policies on a wide consensus of stakeholders, some of whom have contradictory interests, especially in a context of restrictions on public spending, which applies across the whole ECE region.

C. Contribute to climate change mitigation through carbon sequestration and storage in forests and products, and through substitution.

28. The forest sector can contribute to climate change mitigation in four main ways:

(a) *Carbon sequestration and storage in forests.* The ECE region forests are at present a major carbon sink and this situation should be maintained or increased. The rate of carbon sequestration can be increased by expanding forest area. The carbon stock should be protected from unintended carbon releases, through fire, insects, windblow or other causes;

(b) *Carbon storage in wood products.* At present the carbon store in products is estimated at 5 billion tons. The size of this stock can be increased, by increasing consumption of forest products, as well as by lengthening the life in service of wood products, although there are limits to this expansion, and countries should realise that under increased harvesting, the sink will decline for some time;

(c) *Substitution of products from non-renewable raw materials.* When products from sustainably managed forests replace products from non-renewable resources, this may reduce carbon emissions, particularly in the case of energy intensive materials such as steel or concrete;

(d) *Substitution of non-renewable energy sources by renewable energy derived from wood.* Substitution of non-renewable energy sources by renewable energies reduces carbon emissions. However, for both products and energy, the carbon benefit of substitution varies widely according to the pathway chosen, and must be analysed in detail using Life Cycle Assessment (LCA). The time profile of carbon emissions, with a large emission at harvest, compensated by gradual sequestration over the rotation is also an issue.

29. While the ECE region forest sector is already contributing to climate change mitigation in all four ways, it is also clear that the mitigation could be significantly increased in all four. However, there are challenges arising from tradeoffs between the four main directions, as well as between them and other forest functions, notably biodiversity. The main tradeoffs can be briefly summarised as follows:

(a) Increased supply of wood products implies increased harvest, reducing the scope for carbon sequestration in forests;

(b) Intensive use of fast growing species for carbon sequestration, as well as more intensive use of forest residues, notably stumps, as raw material and for energy, may negatively affect biodiversity;

(c) Increased wood energy demand may threaten the supply of raw material for products and raise their price.

30. The challenges facing the ECE region forest sector with regard to climate change mitigation are to identify the best mix of measures, and then to put the agreed strategy in place. The latter may involve a significant input of political will, and financial resources, for instance to mobilise more wood from the forests, and to promote the use of products from sustainably managed forests.

D. Mobilise significantly more wood for energy, on a sustainable basis

31. At present wood – whether directly supplied from the forest or arising in forest industries or from recovered wood products - is by far the largest source of renewable energy in the region (between 40% and 50% according to the latest Joint Wood Energy Enquiry). Most countries have policies, and policy instruments, to increase the supply and consumption of renewable energy. To achieve these targets, wood supply and consumption must increase in line with other renewable energies, although at a slower rate. To reach the announced renewable energy goals, the volume of wood supplied and used as a source of energy would have to increase significantly, over a relatively short period. Outlook studies indicate that total wood supply would have to increase by 40-50% in all parts of the region to achieve the official targets for renewable energy.

32. To achieve these ambitious goals some or all of the following would be needed:

(a) Unprecedented wood mobilisation from private forests in Europe and the USA. Structural and social obstacles would have to be addressed, for instance by cooperative marketing and forest management by small scale forest owners, improved logistics for small wood, improved market transparency. This intensive wood production might have negative consequences for biodiversity;

(b) Using more of the tree biomass, by extracting branches, tops, smaller trees, and even stumps (below ground biomass). This implies changed harvesting methods, and certain ecological risks, notably removals of nutrients from the sites and release of carbon through increased soil disturbance;

(c) Eliminating any loss of wood throughout the manufacturing process, and using the residues as raw material or energy. In many countries, there is already little waste, but improvements are certainly possible. Higher demand for wood energy from residues would increase prices for all residues, including those at present destined to particle board and other traditional industries, which have expressed strong concern about their future supply and cited the principle of “cascade use” – using wood first for material processing and only then for energy;

(d) Improve the recovery of wood products after use through adapted market structures, separation of different residue types, improved classification and investment in infrastructure, higher fees for landfill. Some countries have shown that it is possible to recover significant volumes of post consumer wood, but in most countries, this activity is not well developed.

33. In some European countries, very significant amounts of biomass, mostly wood, are being imported from overseas, driven by policies encouraging renewable energy. This biomass is being used for electricity generation in a number of very large power stations.

34. The policy challenge facing ECE countries is to reconcile the sometimes conflicting objectives for renewable energy, sustainable forest management, wood products industries, and trade, and, if so decided, to make a significant investment of resources and political will to mobilise significant volumes of wood for energy, without unacceptable damage to other parts of the forest sector, or the environment, inside and outside the ECE region.

E. Exclude all unsustainably produced forest products from ECE region markets, while helping countries outside the region to fight illegal logging and other unsustainable practices

35. Over the past decade, significant progress has been made in fighting illegal logging, and other unsustainable practices, inside and outside the ECE region, with the primary aim of halting deforestation. Certification schemes are now operational all over the ECE region, and increasingly elsewhere. Access to ECE region markets for illegal and unsustainably produced forest products has become much more difficult, notably as a consequence of the EU Timber Regulation and the US Lacey Act. Programmes have been put in place to help developing countries meet the stricter standards. However the process is not yet complete: deforestation continues, there are still relatively few certified areas outside the ECE region, and it is still possible to circumvent the market access regimes put in place, especially as supply chains have become longer and more complex. Imports of further processed wood based products, produced in intermediary countries, sometimes from illegally produced wood, have been hard to regulate and control. In addition, the process of ensuring sustainability has imposed extra costs at all stages of the supply chain for wood based products. As these requirements to demonstrate sustainability often only affect wood products based on sustainably produced wood may suffer a competitive disadvantage compared to competing products, many of which are non-renewable or produced in a non-sustainable way.

36. The challenges facing the region with regard to sustainably produced forest products are:

(a) To finish putting in place effective and fair market access regulations, removing all loopholes;

(b) To continue to help exporting countries in developing regions to achieve sustainable forest management, and thereby gain full access to ECE region markets;

(c) To ensure that wood based products do not face unfair restrictions on consumer markets because of the cost of achieving and demonstrating sustainable forest management.

F. Promote the consumption of sustainably produced forest products

37. Increased consumption of forest products from sustainable sources contributes to climate change mitigation, the economic sustainability of the forest sector, job creation, and the development of the green economy. When sustainably produced forest products replace products from non-sustainable sources, there are major benefits, notably with regard to the mitigation of climate change. For instance wood has proven to be a sustainable material for green building. Also a new generation of forest cellulose based fibres is taking larger shares of the fibre market and proving its environmental sustainability. When implemented in the context of well balanced, consensus based, national forest programmes or other sustainable

forest sector policies, increased consumption of sustainably produced forest products does not come at the expense of other forest functions. Certification schemes make it possible to demonstrate sustainability of forest management in the market place. Therefore the promotion of consumption of sustainably produced forest products should be a policy goal.

38. There are many obstacles to promoting increased consumption of forest products, including lack of innovation and R&D in the forest sector, inappropriate or outdated technical regulations (e.g. on fire safety or on height of timber frame buildings), as well as a misleading image of forest products, which are still often seen as being old fashioned, and perhaps environmentally negative. Efforts are in hand in many countries to address these issues, with some success, but it is acknowledged that more could be done with a greater investment of resources from the private sector, supported, when appropriate, by public funds. Civil society, including environmental NGOs, should also contribute. The promotion efforts should be devoted to communication and marketing, but also to regulatory questions.

39. The challenge for policy makers is to provide framework conditions and support for effective measures to promote the consumption of forest products from sustainable sources, bringing together stakeholders, and coordinating actions when necessary.

G. Take the lead in developing the green economy, sharing experience with other sectors, and learning from them

40. The “Green Economy” is being developed all over the world and is calling for new approaches in every sector to improve human well-being and social equity while significantly reducing environmental risks and ecological scarcities. The forest sector already displays many green characteristics: the renewability of its raw material, the low waste and high recovery rate of its processes, the multi functionality of forests, and the emerging systems of payment for forest ecosystem services.

41. When done correctly, forestry provides a model of humans working productively in cooperation with nature, a model which epitomizes what the “Green Economy” is all about. However, the sector should become more “green”, indeed take the lead in certain respects. The Rovaniemi Action Plan for the Forest Sector in a Green Economy, was drawn up through a transparent international multi-stakeholder process, and was adopted by the Committee and the Commission at “Metsä2013”. It is now in the implementation phase. It is consensus based and suggests a wide range of activities by all parts of the forest sector, to be undertaken on a voluntary basis through *ad hoc* partnerships.

42. The Action Plan contains hundreds of specific actions that, if undertaken by policy makers and the forest sector at large, would result in significant environmental and economic benefits. The challenges facing the ECE region forest sector with regard to the forest sector in the emerging green economy overlap with other challenges.

43. The policy challenge is to implement the Rovaniemi Action Plan to a large extent, with the active involvement of the private sector, civil society and all stakeholders.

H. Put the forest work force on a sustainable basis, dramatically improving safety and health of forest workers, and providing necessary skills for a changing world

44. It has become apparent that the forest workforce in the region has significant problems with occupational safety and health, although experts point out that “safety and health in forest work are possible”. In addition, forest workers often have lower than average wages, relatively low social prestige, and have to work in remote areas, with uncomfortable conditions. Meanwhile, the nature of forest work is changing, becoming more technical, with increasing mechanisation, and with a higher stress on communication: forest workers need more technical skills and forest district managers must often have advanced political or

consensus forming skills, as they work not only with the forest owners, but also local authorities, other sectors and a wide range of different forest users and interested publics.

45. Partly as a result, it has become difficult to recruit enough forest workers with appropriate skills for the changing forest work, the average age of the work force is growing and some forest managers may be uneasy in their changing roles. This situation appears unsustainable, yet has received little policy attention, at the national or international level.

46. The challenges in developing a sustainable forest workforce are:

(a) Make forest jobs more attractive – safer, better paid, with higher social prestige, and attract younger workers;

(b) Adapt training and education to bring them into line with the changing requirements – mechanised harvesting, increased responsibility, more communication with forest users etc.;

(c) Reconsider forestry training to cover the new skills required by forest managers, and to work more closely with other disciplines.

I. Continue to help countries in other regions achieve sustainable forest management

47. There is clear evidence that the amount of bilateral official development assistance supplied by ECE region Governments has increased strongly; multilateral ODA and capacity building exercises, such as the Voluntary Partnership Agreements (VPAs) under the EU FLEGT programme are being successfully implemented. Nevertheless, tropical deforestation, illegal logging and other unsustainable practices continue in many regions. Given the importance of tropical forests from all.

48. The challenge to Governments and the forest sector in the ECE region is to support and facilitate the efforts to halt deforestation, through financial and technical assistance, sharing of experience and capacity building, increasing the effectiveness of the funds supplied, and in particular to maintain or increase levels of funding, whether bilateral or multilateral ODA or private investment.

J. Put the financing of all forest functions on a fair and sustainable basis, through valuation of forest benefits and payment for ecosystem services

49. Forest policy recognises the multi-functional nature of forest management, and all through the ECE region aims at a balance between the functions – wood supply, biodiversity, protection, recreation and many others. However, many forest functions do not have recognised monetary value, and forest owners receive no income from them. This may lead to distortion of management choices, as owners give priority to those functions which bring income. To a certain extent, these reductions in livelihoods are compensated by public subsidies of various sorts, but the public budget rarely targets its assistance on specific functions. Payment for Ecosystem Services (PES) systems are being put in place, but are not yet widespread. Progress is being made, both in the evaluation of forest functions, and in payment for ecosystem services, but it cannot yet be demonstrated that forest functions are financed on an equitable and efficient basis, taking account of the interests of forest owners, society and other stakeholders. One consequence of this may be that expenditures for forest related activities are unfairly disadvantaged relative to competing requests for public funding.

50. The theoretical and practical problems of evaluating forest functions, and putting in place PES systems are large: measuring the flows of benefits, assigning a monetary value to them, quantifying tradeoffs between the supply of different benefits from a multi-functional forest which follows natural ecosystem processes, identifying the costs associated to each function, and fairly assigning costs between society, owners and beneficiaries all present major challenges. Putting them into practice can be expensive and complex. However, if

this is not done, the present lack of transparency and possible misallocation of resources will continue. This could harm the balanced decision making which underlies the concept of sustainable forest management. A pragmatic and innovative approach will be necessary to make progress in this area.

51. The challenge facing ECE region Governments, forest owners and forest stakeholders is to develop and put in place, in an equitable and efficient way, a transparent and objective system of evaluating non-wood forest functions and, when possible and appropriate, an agreed system of financing their supply through payment for ecosystem services.

K. Build capacity throughout the ECE region

52. Many ECE region countries are advanced economies, but there are several, mostly in the Balkans, around the Caucasus and in central Asia, which face major challenges of development, including for the forest sector. With a few exceptions, the forest sector in these countries accounts for only a small part of the total economy. Many of them have low forest cover (the Balkan countries are an exception to this). Most of them are dependent on imports for their supply of forest products. Almost all of these countries are in a transition process from centrally planned economies, with far-reaching consequences for their economies and societies.

53. The main issues and challenges for the forest sector in the region were identified by the Lviv Forum on "Forests in a Green Economy" for Eastern Europe, Northern and Central Asia in 2012. Although the situations vary widely, frequent problems are:

- (a) Remoteness and lack of infrastructure;
- (b) Transition and changes in structures and society, including the need to improve governance;
- (c) Illegal logging;
- (d) Lack of and threat to protective functions because of low forest cover;
- (e) Lack of priority for the forest sector in national development plans.

54. The Forum adopted a vision and message, with ten main points, laying out the broad lines of moving towards sustainable forest management in these parts of the ECE region.

55. The challenge for the countries of Central Asia, the Caucasus and some countries of south-eastern Europe is to put their forest sectors on the path to sustainable forest management. The challenge for other ECE countries is to support them in this effort. A necessary first step is to ensure that national development plans recognise the importance of forest sector issues. Governments and society as a whole should recognise both the dangers from unsustainable forest management and the potential contribution of a sustainably managed forest sector to social and economic development. Sustainable forest management should be addressed at the highest policy level, because of, not despite, the low forest cover in many of these countries.

L. Develop a culture of innovation, in the face of structural change

56. The outlook studies stress that structural change is taking place in many areas, including the global economy, trade patterns, energy, the climate, technology, public taste, demographics and others. Many of these changes will influence trends in the forest sector, although the sector has little influence on them. The actors of the forest sector – private and public forest owners and managers, industries, traders, as well as policy makers – must function in an increasingly competitive and rapidly changing political, economic and technological environment, sometimes dominated by large, extremely dynamic, enterprises with a culture of rapid and successful innovation. To survive and prosper, forest sector actors must remain, or become, competitive, developing innovative solutions to new challenges. Innovation is needed in many fields, including forest management, product

design, business processes, and communication. At the same time, the full commitment to long term sustainability, which strongly marks the forest sector, must be maintained - indeed, this is one area that marks the sector as particularly forward looking and thus presents an important marketing opportunity.

57. Developing a culture of innovation has many components, including access to finance, technology, infrastructure, an educated workforce and clusters of relevant skills, as well as the necessary entrepreneurial attitude. Governments, regional authorities and trade associations can provide some of the necessary framework conditions, but the initiative has to come from market actors, whether new entrepreneurs or established managers or owners.

58. The policy challenge for the development of a culture of innovation is to put in place the necessary framework conditions, such as finance, skills and workforce, and to promote the necessary innovative spirit, while maintaining the commitment to sustainable forest management.

M. Address the social and economic problems of forest dependent people in the ECE region – remote rural communities, indigenous peoples and forest owners

59. Although most ECE countries are relatively prosperous advanced economies, many have pockets of deprivation, marked by poverty, poor living conditions and social problems, including violence and alcoholism. This situation has been exacerbated by the move towards greater inequalities in many countries. Some of these pockets of deprivation are in forested areas, such as remote rural communities, dependent on income from logging or forest industries, or indigenous peoples living in forest areas. Low revenue from forestry and closures of local mills have exacerbated these problems. This issue affects many parts of the region, but especially the large forest areas of ECE West and East, where climate and geography exacerbate the problem. Possible remedies include infrastructure development (transport, communication), targeted subsidies to communities or local industries for job creation, support to small and medium size enterprises, vocational training and other adapted measures, entrepreneurship. Above all, the forest and forest industries should be managed with the interests of the local communities in mind, and forest management transitions should be managed gradually and humanely.

60. Many indigenous peoples, notably in North America, have unresolved ownership claims on large forest areas. Sustainable resolution of their problems should preferably include final agreement on these claims, fully accepted by all, although this has proved extremely hard to achieve in the past.

61. A challenge of a different nature comes from the millions of private forest owners whose holdings are below the critical size for economic management. Many of these forest owners are not able to undertake rational or sustainable forest management, unless they are able to support their forest related activities with income from other sources. As a result, many forest owners have unsatisfactory revenues and it has not been possible to mobilise potential wood supply. Government support and cooperatives of forest owners are working towards improving the situation, but much remains to be done.

62. The challenge with regard to the social and economic problems of forest dependent people is to ensure that the forest is part of the solution to the problems of isolated poor rural communities in forest areas, not a factor exacerbating their isolation and poverty. Governments, in consultation with the local communities, forest owners and other stakeholders, should put in place programmes to address these issues, so that ECE region forests can make a positive contribution to the social and economic problems of forest dependent people in the region. Other stakeholders, notably state forest organisations and forest industries should also take the needs of forest dependent people into account in their own activities.
