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Contracting Party:	ESTONIA
<b><i>National Focal Point</i></b>	
Full name of the institution:	Ministry of the Environment, Republic of Estonia
Name and title of contact officer:	Mrs Liina Eek Senior Officer, Nature Conservation Department, <b><i>Ministry of the Environment</i></b>
Mailing address:	Toompuiestee 24 Tallinn Estonia
Telephone:	Ph: +372-6262877
Fax:	Fax: +372-6262901
E-mail:	leek@ekm.envir.ee
<b><i>Contact officer for national report (if different)</i></b>	
Name and title of contact officer:	
Mailing address:	
Telephone:	
Fax:	
E-mail:	
<b><i>Submission</i></b>	
Signature of officer responsible for submitting national report:	
Date of submission:	

*Please provide summary information on the process by which this report has been prepared, including information on the types of stakeholders who have been actively involved in its preparation and on material which was used as a basis for the report.*

The arrangements for the drafting of this report started in May 2003. The Ministry of the Environment (MoE) had preliminarily agreed with the Environmental Protection Institute, Estonian Agricultural Academy to coordinate the drafting process. The Institute had consulted with local experts to collect baseline data, contacted various sources of information, made interviews and provide up-to-date data on the progress of implementation of CBD in forestry sector in Estonia. The Questionnaire is technically compiled by **Mart Külvik**, Environmental Protection Institute ([mkulvik@envinst.ee](mailto:mkulvik@envinst.ee)).

**VOLUNTARY REPORT ON IMPLEMENTATION OF EXPANDED PROGRAMME OF WORK ON  
FOREST BIODIVERSITY**

**Expanded Programme of Work on Forest Biological Diversity  
Annex to Decision VI/22**

1. Has your country identified priority goals, objectives and activities included in the expanded programme of work for implementation at the national level?	
a) no (please specify the reasons)	
b) yes (please provide a list of priorities identified)	x
Further comments on identification of priority goals, objectives and activities	
<p>Estonia has identified priority goals, objectives and activities included in the expanded programme of work for implementation at the national level in a number of environmental policy documents. The objectives of principal document of national environmental policies, the <i>National Environmental Strategy</i> (1997), was to bring to the public's attention the environmental problems, priority goals and tasks in promoting sustainable development; and includes among first priorities the task to promote sustainable use of the natural resources incl. forest resources, historically traditional for Estonia.</p> <p>The <i>Estonian Forest Policy</i> (1997) is a strategic planning document for the most important biological resource in the country, and includes also a number of goals, objectives and activities included in the expanded programme of work.</p> <p><i>The National Biodiversity Strategy and Action Plan</i> (1999) has set several tasks for the forestry sector in line of biodiversity process terms.</p> <p>Finally, the <i>Estonian Forestry Development Plan</i> (2003) has detailed a set of activities to in the area of forest biodiversity protection and sustainable use.</p> <p>However, not always the priority goals, objectives and activities in the mentioned documentation have clear reference to the CBD expanded programme of work on Forest Biological Diversity.</p>	

2. From the list of priorities, did some or all of them produce the expected impacts after their implementation (i.e. a success)?

a) no (please specify the reasons)	
b) yes (please specify success stories)	x

Further comments on impacts of implementation of priority activities

One of the success stories in implementation of priority activities is the carrying out the Woodland Key Habitats process in Estonia. If the managers of the state forests are committed to establishing larger strict nature reserves as well as to conserving key habitats in commercial forests, then the level of awareness of more than 45 thousand private forest owners in Estonia needed to be increased. In Sweden the inventory of Woodland Key Habitats and application of legal measures for the protection of such habitats had been initiated prior to the Estonian process already. As the resources and level of experience of Swedish forest owners were significantly greater than those of Estonian private forest owners at that time, it was practical for Estonia to develop its own approach for identification, conservation and management of Woodland Key Habitats.

The concept was initiated by the Estonian Forestry Development Programme (1995-1997), supported by the Estonian Forest Policy (1997), and the protection measures enforced by the Forest Act (1998). As the beginning, the inventory was launched as a joint Estonian-Swedish project in 1999 to assess the distribution of forest habitats of highest value in managed forest. The main outcome of the project - the detailed and illustrated results of the woodland key habitats inventory, including area and numbers, lists of types, elements, indicator species and habitat specialists were made available for wide public in the form of fancy publication. All the 7007 woodland key habitat sites detected by the inventory covering an area of 19,059 ha have been mapped and drawn at the detailed national atlas as a part of the same document.

3. Were there any challenges/impediments to the implementation of priority activities that could have negatively affected their chance of success?	
a) yes (please specify the activities and the main challenges/impediments)	x
b) no	
Further comments on challenges/impediments to implementation of priority activities	
<p>A number of the defined forest policy principles and fixed in the Estonian Forest Policy adopted by the Parliament in the summer of 1997 have been implemented.</p> <p>Some goals have been achieved but their achievement has been considered inadequate in the light of our increased knowledge and new approach. So, the area of strictly protected forests considerably exceeds the 4% threshold established in 1997, however, it should still be increased to preserve a number of species. A number of the previously established goals are still far from being reached. So, forest inventories have not kept pace with the land reform; private forest owners are lacking smoothly functioning support structures; the assessment of the protection value of forests has not been completed and quite often effective protection measures have not been introduced; there is no satisfactory environmental planning and monitoring system.</p> <p>Successful implementation of the Forest Policy has been retarded by the lack of an integral plan of implementation measures.</p>	
4. Is your country collaborating with other Governments and regional and international organizations and processes to implement regional or international activities in the expanded programme of work?	
a) no	
b) yes, limited collaboration (please provide details)	x
c) yes, significant collaboration (please provide details)	
Further comments on collaboration with other Governments and regional and international organizations and processes to implement regional or international activities in the expanded programme of work	
<p>There is collaboration in a limited scope with some neighbouring governments like Finland, Sweden and Denmark as well as within certain regional initiatives like Baltic Environmental Forum, Agenda 21 for the Baltic Sea Region, etc.</p>	

**Programme Element 1: Conservation, Sustainable Use and Benefit-sharing**

5. Has your country developed practical methods, guidelines and/or indicators to apply the ecosystem approach in relation to sustainable forest management?	
a) no (please specify the reasons)	
b) relevant methods, guidelines and indicators under development	
c) some methods, guidelines and indicators developed (please provide details)	x
d) a comprehensive set of methods, guidelines and indicators developed (please provide details)	
Further comments on the practical methods, guidelines and indicators to apply the ecosystem approach in relation to sustainable forest management	
<p>Estonia has integrated national forest programmes partly with national biodiversity strategy and action plan, as well as indirectly applying the ecosystem approach and sustainable forest management. It has been performed in the Estonian Forest Policy (1997); in advanced and more specific manner in decennial Estonian Forestry Development Plan (2002).</p> <p>Actions that Estonia is taking to address the conservation and sustainable use of forest biological diversity conform to the ecosystem approach partly and indirectly.</p>	
6. Has your country taken any measures to prevent the introduction of invasive alien species that threaten ecosystems, and mitigate their negative impacts on forest biodiversity in accordance with international law?	
a) no	
b) relevant measures under development	x
c) yes, some measures taken (please outline the measures)	
d) yes, comprehensive measures taken (please outline the measures)	
Further comments on the measures taken	
<p>Actions that Estonia is taking to address the measures to prevent the introduction of invasive alien species that threaten ecosystems, and mitigate their negative impacts on forest biodiversity in accordance with international law are developed, inter alia under the GEF funded project GF/2716-01-4354 "Assessment of Capacity building needs for Biodiversity and Participation in Clearing House Mechanism in Estonia".</p>	

7. Has your country taken any measures to mitigate the impact of pollution on forest biodiversity?	
a) no	
b) under consideration	
c) relevant measures under development	
d) yes, some measures taken (please provide details)	x
e) yes, comprehensive measures taken (please provide details)	
Further comments on the measures taken to mitigate the impact of pollution on forest biodiversity	
<p>Over 100 km<sup>2</sup> of forest land has been degraded and polluted by oil shale open and underground mining activities and dumping of ash into heaps from oil shale fired power plants in NE Estonia. Another group of degraded and polluted lands including forests are territories of former military bases of the Soviet Union. An inventory of those military sites listed 2900 sites contaminated to larger or lesser extent with chemicals, metal, minerals, construction, wood and domestic waste and oil pollution. These areas have partially been restored by afforestation.</p>	
8. Has your country taken any measures to mitigate the negative impacts of climate change on forest biodiversity?	
a) no	
b) relevant research and monitoring programmes under development	
c) some research and monitoring activities being undertaken but no measures taken	X
d) yes, some measures taken (please outline the measures)	
e) yes, comprehensive measures taken (please outline the measures)	
Further comments on the measures taken to mitigate the negative impacts of climate change on forest biodiversity	

The research and monitoring activities being undertaken in Estonia to mitigate the impact of climate change on forest biodiversity include mainly the monitoring of relevant influences to forest ecosystems. Data management system is mainly based on two international reporting schemes - Sustainable Forest Management Criteria and Indicators of the Ministerial Conference on the Protection of Forests in Europe and Framework for UNFAO Global Forest Resources Assessment (notably List of indicators of the Temperate and Boreal Forest Resources Assessment 2000). Data collection of forestry related data in Estonia is carried out mainly during field inventory works (standwise forest inventory, NFI, inventories of felling, reforestation and damaged forest areas, forest monitoring in ICP Forest Framework etc). A preliminary review on the subject has been completed (Punning, 1999)

9. Has your country taken any measures to prevent and mitigate the adverse effects of forest fires and fire suppression (where fire is a natural disturbance agent)?

a) no	
b) relevant measures being considered	
c) relevant measures under development	x
d) yes, some measures undertaken (please specify)	
e) yes, many measures being undertaken (please specify)	

Further comments on the measures to prevent and mitigate the adverse effects of forest fires and fire suppression

According to *Estonian Forestry Development Programme Until 2010* the amount of silvicultural measures not yielding immediate profits like fire protection measures is too small. The strategy includes the task to bring the corresponding legislation into compliance with the requirements of the international standards for forest fire protection. The manager of state forests will build and reconstruct the fire protection systems of state forests. The state will support the implementation of similar measures in private forests pursuant to the National Forest Fire Protection Scheme and depending on the availability of the corresponding funds.

The adverse effects of fire suppression where fire is a natural disturbance agent currently are being considered in academic circles only.

10. Is your country mitigating effects of the loss of natural disturbances necessary to maintain biodiversity in regions where these no longer occur?	
a) no	
b) monitoring and assessment of effects ongoing	
c) potential measures identified	X
d) yes, some adopted and being implemented (please provide details)	
e) yes, comprehensive measures adopted and being implemented (please provide further details)	
Further comments on measures adopted to mitigate effects of the loss of natural disturbances necessary to maintain biodiversity in regions where these no longer occur	
<p>In order to maintain forest biodiversity the important forest elements ensuring the preservation of biodiversity (dead trees, stand structure resembling the natural structure, etc.) have been quite extensively preserved. In addition to that variety of methods simulating natural processes are being currently identified.</p>	
11. Is your country preventing and mitigating losses of forest biodiversity due to fragmentation and conversion to other land uses?	
a) no	
b) potential measures identified	x
c) yes, some measures undertaken	
b) yes, comprehensive measures undertaken	
12. Is your country restoring forest biological diversity in degraded secondary forests and in forests established on former forestlands and other landscapes?	
a) no	
b) potential measures identified	X
c) yes, some measures implemented in some areas (please provide details)	
d) yes, comprehensive measures implemented in major areas (please provide details)	
Further comments on the measures to restore forest biological diversity in degraded secondary forests and in forests established on former forestlands and other landscapes	

The last statistical inventories demonstrate a rapid increase in the forest area, which covers more than a half of the land area of Estonia. The increase in the forest area has mainly been caused by the specification of the nature of plots and by the process of non-forested areas turning into forests. It has been estimated that another 300 000 ha of former agricultural lands have fallen out of active utilisation and are undergoing afforestation. This is mainly an uncontrolled process, often increasing the share of species of low economic and ecological value. There are some initial project-based measures under identification in order to restore the forest biological diversity in degraded secondary forests and in forests established on abandoned farmlands.

13. Is your country promoting forest management practices that further the conservation of endemic and threatened species?

a) no

b) relevant forest management practices under development

c) yes, some practices adopted and promoted (please provide details)

X

d) yes, some practices being implemented (please provide details)

Further comments on the forest management practices that further the conservation of endemic and threatened species

Followed by the EU accession process, Ministry of the Environment is preparing for the establishment of Natura 2000 network, which expands the current nature conservation practices and will promote forest management practices that further the conservation of endemic and threatened species as well.

14. Is your country ensuring adequate and effective protected forest area networks?

a) no

b) networks of protected areas being planned

c) some protected areas established but networks not in place

d) networks of protected areas taking shape

x

e) major networks of protected areas established

15. Is your country promoting sustainable use of forest resources to enhance the conservation of forest biological diversity?

a) no

b) relevant policy and programme under development

X

c) yes, some policies and programmes in place (please provide details)

d) yes, comprehensive policies and programmes in place (please provide details)

Further comments on the policies and programmes for promoting sustainable use of forest resources to enhance the conservation of forest biodiversity

Protection of habitats of threatened species is being paid more attention than they used to be. Estonian Forest Conservation Network and Forest Key Biotopes contribute as forest sector specific measures to the in-situ conservation of species and habitats. See also question 1.

16. Is your country preventing losses caused by unsustainable harvesting of timber and non-timber forest resources?

a) no

b) potential measures identified

c) some measures undertaken (please provide details)

x

d) comprehensive measures undertaken (please provide details)

Further comments on the measures to prevent losses caused by unsustainable harvesting of timber and non-timbering forest resources

The measures to prevent losses caused by unsustainable harvesting of timber and non-timbering forest resources include management planning, policy planning and management supervision activities.

Forest felling and replanting are regulated according to the forest management plan. However, the annual felling rates are considered too high by NGOs and are objects of continuous disputes.

Furthermore, specific measures for neutralizing perverse incentives including initiating of unsustainable forest uses have been proposed in NBSAP (1999), draft Estonian Forest Development Plan etc.

Violations of forest protection regulations which is the most critical part of unsustainable uses of forest biodiversity, are monitored by the Estonian Environmental Inspection.

17. Is your country taking any measure to enable indigenous and local communities to develop and implement adaptive community-management systems to conserve and sustainably use forest biological diversity?

a) no

b) not applicable

c) relevant policy and programme under development

x

d) yes, some policies and programmes in place (please specify)

Further comments on the policies and programmes to enable indigenous and local communities to develop and implement adaptive community-management systems to conserve and sustainably use forest biological diversity

In Estonia the forest management and forest product certification is encouraged from variety of involved parties, including the government, NGOs, forest owners and **local communities**. The certification forms include FSC (Forest Stewardship Council) system, PEFC (Pan-European Forest Certification) and ISO 14001 standard.

18. Has your country developed effective and equitable information systems and strategies and promoted implementation of those strategies for *in situ* and *ex situ* conservation and sustainable use of forest genetic diversity?

a) no

b) relevant information system and strategy under development

x

c) relevant information system in place

d) relevant strategies in place (please provide details)

e) relevant information system and strategies in place (please provide details)

Further comments on the strategies for *in situ* and *ex situ* conservation and sustainable use of forest genetic diversity

According to the *Estonian Forestry Development Plan (2003)* The first among main shortcomings of the public forestry administration have been defined as insufficient gathering, processing and analysing of forestry-related information. This regards also communication among different organizations dealing with the sustainable management and use of biodiversity. It is tasked currently, that information on forests and forest management will be maintained in an integral information system (registry). Access to the registry will be guaranteed for the public authorities, for companies engaged in obtaining and buying up of timber to enable them to determine the origin of procured timber as well as for environmental organisations. The registry will be continuously updated to ensure the adequate meeting of potential new demands incl. those of foreseen in strategies for *in situ* and *ex situ* conservation and sustainable use of forest genetic diversity.

19. Is your country promoting the fair and equitable sharing of benefits resulting from the utilization of forest genetic resources and associated traditional knowledge?	
a) no	x
b) relevant policies and programmes under development	
c) some policies and programmes in place (please specify)	
d) comprehensive policies and programmes in place (please specify)	
Further comments on the policies and programmes for promoting the fair and equitable sharing of benefits resulting from the utilization of forest genetic resources and associated traditional knowledge	

**Programme Element 2: Institutional and Socio-economic Enabling Environment**

20. Is your country improving the understanding of the various causes of forest biodiversity losses?	
a) no	
b) a limited analysis being undertaken	
c) a thorough analysis being undertaken	x
d) yes, some analyses completed and results available (please outline some findings from these analyses)	
e) yes, comprehensive analysis completed and results available (please provide some findings from these analyses)	
Further comments on the analysis of the various causes of forest biodiversity losses	

Recently the several *ecosystem level inventories* have been carried out which partly indicate the status of forest management sustainability: Inventory of old-growth forest (by Estonian Fund for Nature, in 1993-1996); Inventory of wooded meadows (by Estonian Fund for Nature, in 1995-1996); Inventory of wetland types (by Ministry of the Environment, in 1997-1998); Inventory of valuable forest sites and establishment of forest conservation area network in Estonia (by Estonian Forest Centre, 1996-2000) and inventory of woodland key habitats (coordinated by Ministry of the Environment, 1999-2002).

Estonia has worked out its national criteria and indicators for sustainable forest management according to Pan-European Ministerial Forestry process. The Pan-European criteria and indicators will be further developed within the Pan-European process and the comparability between national statistics improved. At the moment there are on-going discussions about the possibility to produce data on regular intervals.

However, the understanding of various causes of forest biodiversity losses is still limited and additional focussed and comprehensive analysis needs to be done.

21. Has your country integrated biodiversity conservation and sustainable use into forest and other sector policies and programmes?

a) no

b) under consideration

c) yes, integrated into policies and programmes in some sectors (please provide details)

x

d) yes, integrated into policies and programmes in major sectors (please provide details)

Further comments on the integration of biodiversity conservation and sustainable use into forest and other sector policies and programmes

Estonia has attempted to integrate the national biodiversity conservation and sustainable use into forest and other sector policies and programmes mostly through national biodiversity strategy and action plan, *inter alia* applying the ecosystem approach and sustainable resource management. In forestry sector it has been performed in the Estonian Forest Policy (1997); in advanced and more specific manner in decennial Estonian Forestry Development Plan (2002).

22. Has your country developed good governance practices, reviewed and revised and implemented forest and forest-related laws, tenure and planning systems, to provide a sound basis for conservation and sustainable use of forest biodiversity?

a) no

b) review under way	X
c) review and revision completed	
d) some good governance practices and related laws developed and implemented (please provide details)	
e) a comprehensive set of practices and laws developed and implemented (please provide details)	
Further comments on the practices and laws developed and implemented to provide a sound basis for conservation and sustainable use of forest biodiversity	
<p>Estonia applies the following good governance practices of sustainable management and use of forest biological diversity: legislation, policies, development plans, action plans, monitoring programmes and forest survey. Currently some activities are underway to develop good governance practices, forest-related laws, tenure and planning systems to provide a sound basis for conservation and sustainable use of forest biodiversity.</p>	
23. Is your country promoting forest law enforcement and addressing related trade?	
a) no	
b) review under way	
c) potential measures identified	X
d) yes, some measures in place to strengthen law enforcement and address related trade	
e) yes, comprehensive measures in place to strengthen law enforcement and address related trade	
24. Is your country mitigating the economic failures and distortions that lead to decisions that result in loss of forest biodiversity?	
a) no	
b) review under way	
c) potential measures identified	X
d) yes, some measures taken (please provide details)	
e) yes, comprehensive measures taken (please provide details)	
Further comments on the measures taken to mitigate economic failures and distortions that lead to decisions that result in loss of forest biodiversity	

The share of forestry and wood industry in Estonian GDP has been constantly increasing in the last decade. Wood industry formed 1/7 of the total volume of manufacturing industry in 2001. In the same year, the share of forest products exceeded 13% of the total value of the national export. The favourable influence of forestry to the national trade balance should be stressed as a very high share of its production inputs is of domestic origin. However, there are only few measures mitigating the economic failures and distortions that lead to decisions that result in loss of forest biodiversity identified yet. As an example there are in place some schemes to provide market incentives for the use of sustainable practices and develop alternative income generation programmes of local communities.

25. Is your country increasing public support and understanding of the value of forest biodiversity and its goods and services at all levels?

a) no	
b) relevant programme under development	
c) yes, some programmes in place	X
d) yes, comprehensive programmes in place	

***Programme Element 3: Knowledge, Assessment and Monitoring***

26. Has your country reviewed and adopted a minimum forest classification system, based on harmonized and accepted forest definitions and addressing key forest biodiversity elements?

a) no	
b) review under way	
c) review completed	
d) a forest classification system adopted	X

27. Has your country developed national forest ecosystem classification systems and maps that use agreed international standards and protocols?

a) no	
b) early stages of development	
c) advanced stages of development	
d) yes, classification systems in place	X

28. Has your country developed specific forest ecosystems surveys in priority areas for conservation and sustainable use of forest biodiversity?

a) no	
b) under consideration	
c) relevant surveys being planned	
d) relevant surveys completed (please provide details)	
e) results of relevant surveys available (please provide details)	X

Further comments on the surveys of specific forest ecosystems in priority areas for conservation and sustainable use of forest biodiversity

Recently the several forest ecosystem surveys in priority areas for conservation and sustainable use of forest biodiversity have been carried out: Inventory of old-growth forest types (by Estonian Fund for Nature, in 1993-1996); Inventory of wooded meadows (by Estonian Fund for Nature, in 1995-1996); Inventory of wetland types (by Ministry of the Environment, in 1997-1998); Inventory of valuable forest sites and establishment of forest conservation area network in Estonia (by Estonian Forest Centre, 1996-2000) and inventory of woodland key habitats (coordinated by Ministry of the Environment, 1999-2002).

29. Is your country advancing the development and implementation of international, regional and national criteria and indicators based on key regional, subregional and national measures within the framework of sustainable forest management?

a) no

b) relevant programme under development

c) some criteria and indicators developed (please provide details)

X

d) comprehensive indicators developed (please provide details)

Further comments on the development and implementation of criteria and indicators

Since 1988 the *European Network of Permanent Sample Plots for Monitoring of Forest Ecosystems* the level I network for monitoring of forests was established. In Estonia, the Centre of Forest Protection and Silviculture has been coordinating the survey, based on a 16\*16 km network with 92 permanent sample plots covering the forest area of the whole country. Monitoring network has been established according to the Strasbourg Resolution 1 and Manual on the methods and criteria for harmonised sampling, assessment, monitoring and analysis of the effects of air pollution on forests. Altogether, more than 2100 sample trees have been used.

Estonia has worked out its national criteria and indicators for sustainable forest management according to Pan-European Ministerial Forestry process. The Pan-European criteria and indicators will be further developed within the Pan-European process and the comparability between national statistics improved. At the moment there are on-going discussions about the possibility to produce data on regular intervals.

30. Has your country conducted key research programmes on the role of forest biodiversity and ecosystem functioning?

a) no

b) research programs under development

X

c) yes, some research programs conducted

d) yes, comprehensive research programs conducted

31. Is your country enhancing and improving the technical capacity at the national level to monitor forest biodiversity, benefiting from the opportunities offered through the Clearing House Mechanism of CBD?	
a) no	
b) capacity building programme under development	X
c) yes, some programmes in place (please provide details)	
d) yes, comprehensive programmes in place (please provide details)	
Further comments on the programmes to enhance and improve the technical capacity at the national level to monitor forest biodiversity	
<p>Estonia has improved the technical capacity at the national level <i>inter alia</i> to monitor forest biodiversity, benefiting from the GEF funded project GF/2716-01-4354 "Assessment of Capacity building needs for Biodiversity and Participation in Clearing House Mechanism in Estonia", including sub-projects "The biodiversity indicators of sustainable forestry" and "Biodiversity conservation and sustainable use in Estonia: Mapping of the international obligations".</p>	