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Report of the technical assessment of the forest management reference level submission of Russian Federation submitted in 2011

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Contents

I. Introduction and summary

A. Overview

1. This report covers the technical assessment (TA) of the submission of the Russian Federation on its forest management reference level (FMRL), submitted on 2 March 2011 in accordance with decision 2/CMP.6. The TA took place (as a centralized activity) from 23 to 27 May 2011 in Bonn, Germany, and was coordinated by the UNFCCC secretariat. The TA was conducted by the following team of nominated land use, land-use change and forestry experts from the UNFCCC roster of experts: Mr. Jim Penman (United Kingdom of Great Britain and Northern Ireland), Mr. Sandro Federici (San Marino), Ms. Gro Hylen (Norway), Mr. Agustín Inthamoussu (Uruguay), Mr. Mattias Lundblad (Sweden) and Mr. Nalin Srivastava (India). Mr. Jim Penman and Mr. Sandro Federici were the lead reviewers. The TA was coordinated by Ms. María José Sanz-Sánchez (UNFCCC secretariat).

2. In accordance with the "Guidelines for review of submissions of information on forest management reference levels" (decision 2/CMP.6, appendix II, part II), a draft version of this report was communicated to the Government of the Russian Federation, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

B. Proposed reference level

3. The proposed FMRL for the Russian Federation, which was revised during the TA as explained in paragraph 6 below, is –116.3 million tonnes of carbon dioxide equivalent (Mt CO_2 eq) per year.

4. The FMRL refers to carbon stock changes in all carbon pools as well as non-CO_2 emissions from forest fires and nitrous oxide (N_2O) emissions from drainage of organic soils in 1990. It assumes instantaneous oxidation for harvested wood products (HWP).

II. General description of the reference level

A. Overview

5. The FMRL for the Russian Federation is based on the estimated net removals for forest management in 1990.

6. During the TA, the expert review team (ERT) identified inconsistencies between the submitted FMRL and the estimate for forest management reported in the Russian Federation's national inventory report (NIR) of 2011. These inconsistencies were to do with the treatment of the estimate of the shrubland area and the estimate of non-CO_2 emissions from forest fires. As a result of the discussions during the TA, the Russian Federation provided a recalculated estimate of the FMRL which is consistent with the forest management estimate for 1990 set out in chapter 10 of the 2011 NIR. This revised FMRL is –116.3 Mt CO_2 eq.

7. Information on methods used to calculate emissions and removals for forest management is provided briefly in the FMRL submission and in more depth in the 2011 NIR. The ERT found this information, together with the responses to additional questions

posed by the ERT, useful and appropriate to a TA. Transparency regarding the relationship between the estimation of emissions/removals for forest land remaining forest land reported in the greenhouse gas (GHG) inventory and the estimation of emissions/removals from forest management as calculated for the FMRL, as well as the description of direct GHG emissions from forest fires, could be improved.

B. How each element of footnote 1 to paragraph 4 of decision 2/CMP.6 was taken into account in the construction of the reference level

1. Historical data from greenhouse gas inventory submissions

8. Historical data and methodologies applied are those reported in the 2011 NIR and the FMRL is consistent with the value reported for forest management in 1990.

2. Age-class structure

9. The age-class structure of the Russian forests is reported in the submission and in the 2011 NIR. Age-class structure by area of managed forests in the Russian Federation is described for 1990–2008. The age-class distribution is used to calculate carbon stock changes by a chronosequence of carbon content for different pools and by the transition of lands from one age class to the following.

3. The need to exclude removals from accounting in accordance with decision 16/CMP.1, paragraph 1

10. See paragraph 28 below.

4. Other elements

Forest management activities already undertaken

11. Forest management in the Russian Federation is defined as a system of anthropogenic activities related to the management and use of forests to maintain environmental, economic and social functions. In its submission, the Russian Federation lists a number of activities implemented within the framework of forest management: regular accounting, quantitative assessment and analysis of the condition of the resource in time and space, forest restoration, tending of forests, protection of forests from fires and other disturbances, and optimization of felling rates.

Projected forest management activities under a 'business as usual' scenario

12. Since the revised FMRL is based on the 1990 estimate for forest management, the Russian Federation has not provided information on a 'business as usual' scenario for the second commitment period. The Russian Federation provided projections in its informal submission on forest management under the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol in May 2010.

C. Pools and gases

1. Pools and gases included in the reference level

13. The Russian Federation includes all of the carbon pools currently requested for reporting and accounting under the Kyoto Protocol: living biomass (above- and below-ground), dead organic matter (standing and fallen dead wood), litter and soil organic

carbon. It also includes non-CO_2 emissions from forest fires and N_2O emissions from drainage of organic soils.

2. Consistency with inclusion of pools in the estimates

14. The Russian Federation has ensured consistency with its 2011 NIR in the treatment of pools and gases in the FMRL.

D. Approaches, methods and models used

1. Description

15. The Russian Federation bases its estimate of the revised FMRL on data submitted to the secretariat in 2011. The FMRL includes both carbon stock changes in carbon pools estimated from gains and losses, and non-CO_2 emissions from forest fires and drainage of organic soils.

16. Estimation of carbon stocks in pools of woody biomass, dead organic matter, litter and soil organic matter to a depth of 0–30 cm is based on statistical activity data on area and growing stocks of forests and on regional conversion factors. Conversion factors are stratified by region according to tree species and age. Estimation of accumulation of carbon in woody biomass, dead organic matter, litter and soil organic matter uses the average carbon stocks by area and age. The total carbon accumulation in each pool of each age is estimated and scaled up using the average carbon accumulation in the pool in the given age times the corresponding area. Carbon pool losses associated with clear-cutting, destructive fires and other reasons of mortality of tree stands assume instantaneous oxidation of carbon in woody biomass and dead wood. Litter and soil organic matter carbon stocks are assumed to decay over time. Statistical activity data on the total area of fire and cutting in combination with average values for carbon pools of the forest types affected by fires and harvesting are used to estimate the losses.

17. Estimation of direct emissions from forest fires uses statistics of corresponding areas for different types of fires. CO_2 emissions are estimated using data from plots and stands affected by fire. Estimates of the emissions of methane and N_2O are based on the share of the carbon-containing gases emitted as a result of the organic combustion and the ratio of carbon and nitrogen in the combustion products.

2. Transparency and consistency

18. The Russian Federation provided data on and a comprehensive description of the methods used for calculating its FMRL. Taking into account the exchange of information between the ERT and the Russian Federation during the TA, the ERT found the description contained in the FMRL submission transparent and, in conjunction with the NIR and common reporting format (CRF) tables of 2011, suitable as a basis for revising the FMRL.

E. Description of the construction of the reference level

1. Area under forest management

19. The area under forest management in 1990 was 564.5 million hectares (ha). This area represents the major part of the area of forest land remaining forest land as reported under the Convention for 1990, which was 609.4 million ha.

20. The area excluded from the area of forest land remaining forest land is shrubland, which does not meet the definition of forests adopted by the Russian Federation in its report for establishing the assigned amount under the Kyoto Protocol.

2. Relationship of the forest land remaining forest land category with the forest management activity reported previously under the Convention and the Kyoto Protocol

21. The revised FMRL estimate is consistent with the forest management estimate reported in the NIR and CRF tables of 2011. The same methods and data are applied for estimating emissions and removals from forest management as for forest land remaining forest land estimates.

3. Forest characteristics

22. Since 1990 the proportion of middle-aged to over-mature age classes has increased. Between 1988 and 2008 the share of mature and over-mature stands dominated by coniferous species decreased from 52.5 per cent in 1988 to 47.3 per cent in 2008 because harvesting was mainly of coniferous species. During the same period the share of mature and over-mature stands dominated by softwood and hardwood species increased. The sequestration of carbon in ripening stands dominated by coniferous species is approximately 0.1 t C ha^{-1} per year, while stands dominated by mixed hardwood species and softwood species sequester 0.25 t C ha^{-1} per year and 0.65 t C ha^{-1} per year, respectively. Carbon sequestration in over-mature stands is assumed to be zero.

23. In the Russian Federation, over half of the total forest area belongs to permafrost soils, which have a considerable negative effect on the productivity and density of Russian forests. Low productivity forest is a dominant part of coniferous and hardwood forests.

4. Historical and assumed harvesting rates

24. Historical trends in harvesting rates are presented in the 2011 NIR (table 7.23). The harvesting rate, including clear-felling and thinning, in Russian forests has decreased continuously from slightly above 120 Mt C in 1990 to around 60 Mt C in 2009.

25. In its FMRL submission the Russian Federation does not provide a projection and consequently no information on projected harvesting rates is provided.

5. Harvested wood products

26. In estimating the FMRL the Russian Federation assumes instantaneous oxidation for HWP.

6. Disturbances in the context of force majeure

27. The Russian Federation does not take into account force majeure in the construction of the FMRL. The contribution to the total CO_2 emissions from destructive fires and other reasons of mortality of tree stands in 1990 comprised 10.2 per cent of total national emissions in the base year, but was not considered to be a year with disturbances over the average level according to the area and volume burned. The estimate includes both direct CO_2 emissions from fires and indirect post-fire emissions during consecutive years. Owing to national circumstances and the approach used, the estimated CO_2 emissions from destructive fires and other reasons of mortality of trees in the base year is relatively high compared with data from national GHG inventories of other Parties included in Annex I to the Convention (Annex I Parties). Direct CO_2 emissions from forest fires in 1990 comprised only about 3.9 per cent of the total national emissions in the base year, which is comparable to some other Annex I Parties.

7. Factoring out

28. With the present state of scientific knowledge, the effects of elevated CO_2 concentrations and indirect nitrogen deposition occur both in the reference level and in the commitment period estimates and therefore they can be assumed to factor out. The dynamic age-class effects will remain over any given commitment period but may eventually be removed from accounting by being cancelled out over successive commitment periods.

F. Policies included

29. Since the Russian Federation does not propose to use a projection, no information is provided on policies included in the FMRL.

G. Other issues

30. In addition to the estimate for the FMRL, the Russian Federation provides an estimate of the carbon budget of managed forest in 1990 with the HWP pool, which includes emissions from products produced and consumed within the country, based on national data on domestic production and export of wood products.

31. Additional information on how the production of HWP relates to domestic harvest (which is the main component for estimating losses in carbon pools) would significantly increase the transparency. The ERT recommends that the Russian Federation continue its work on HWP and provide a revised estimate of the FMRL, including the HWP pool as necessary, once the methodology has been agreed internationally.

III. Conclusions and recommendations

32. The ERT found the Russian Federation's FMRL submission and supporting material informative and transparent. The ERT also found the Party's responses to its questions during the TA process helpful and essential for the completion of the assessment.

33. The ERT recognized inconsistencies between the FMRL proposed in the submission and the corresponding reporting under the Convention and the Kyoto Protocol (2011 NIR and CRF tables). These inconsistencies were to do with the treatment of the estimate of the shrubland area and the estimate of non-CO_2 emissions from forest fires.

34. Because of the inconsistencies found during the TA, taking into account the reported recalculation in its 2011 NIR, the ERT recommended that the Russian Federation revisit the calculations of the submitted FMRL.

35. The Russian Federation provided a recalculated estimate of the FMRL, which was found to be consistent with the forest management estimate for 1990 contained in chapter 10 of its 2011 NIR (see annex, section B). The ERT recommends that this revised estimate become the proposed FMRL for the Russian Federation without consideration of the HWP pool and that the Russian Federation provide an estimate including HWP as necessary, once the approach has been agreed internationally.

Annex

Documents and information used during the technical assessment

A. Reference documents

Information on the forest management reference level of the Russian Federation, 2 March 2011. Available at <http://unfccc.int/files/meetings/ad_hoc_working_groups/kp/application/pdf/awgkp_russia_2011_eng.pdf>.

National greenhouse gas inventory of the Russian Federation submitted in 2010. Available at <http://unfccc.int/5270.php>.

National greenhouse gas inventory of the Russian Federation submitted in 2011. Available at <http://unfccc.int/5888.php>.

FCCC/ARR/2010/RUS. Report of the individual review of the annual submission of the Russian Federation submitted in 2010.

B. Additional information provided by the Party[1]

During the technical assessment (TA), the Russian Federation revisited the estimate of the forest management reference level provided in its submission. The table below was provided by the Russian Federation to explain the differences observed during the TA.

Additional information for correction of the Russian Federation's forest management reference level submission (1990)

	UNFCCC submission 2011		Revised reference level
	Managed forest land with shrubs	Shrubs	Forest management
Area [M ha]	609.4	44.9	564.5
Net carbon stock change in biomass [Gg C]	54554.0		
Net carbon stock change in DOM [Gg C]	2932.7		
Net carbon stock change in mineral soils [Gg C]	6009.6		
Net carbon stock change in organic soils [Gg C]	-374.5		
Total net carbon stock change [Gg C]	63121.9	26363.1	36758.8
Total net carbon stock change [Gg CO_2]	231447.0	96664.7	134782.3

[1] Reproduced as received from the Party.

Additional information for correction of the Russian Federation's forest management reference level submission (1990)			
Direct fire emission, CH_4 [Gg CO_2-eq]	10036.0		10036.0
Direct fire emission, N_2O [Gg CO_2-eq]	8195.6		8195.6
Drainage, N_2O [Gg CO_2-eq]	254.0		254.0
Total net removals [Gg CO_2-eq]	–212961.4	–123072.7	–116296.7

* We don't separate fire disturbance in forest lands and in shrub lands due to absence of initial data.

** The direct fire emissions of non-CO_2 were recalculated in UNFCCC submission (2011) since they were found to be overestimated in submission 2009 (assumption of complete oxidation of organic matter by fire).