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Report of the technical assessment of the forest management reference level submission of Portugal 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 Portugal on its forest management reference level (FMRL), submitted on 18 April 2011 in accordance with decision 2/CMP.6. The TA took place (as a centralized activity) from 30 May to 3 June 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 (LULUCF) experts from the UNFCCC roster of experts: Mr. Aquiles Neuenschwander (Chile), Ms. Oksana Butrim (Ukraine), Mr. Mamadou Khouma (Senegal), Mr. Kyeong-hak Lee (Republic of Korea), Mr. Doru Irimie (Romania) and Ms. Anke Benndorf (Germany). Mr. Neuenschwander and Ms. Butrim 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 Portugal, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

B. Proposed reference level

3. Portugal has proposed an FMRL of –6.83 million tonnes of carbon dioxide equivalent (Mt CO_2 eq) per year. This consists of net emissions of –6.48 Mt CO_2 eq per year without consideration of harvested wood products (HWP) plus net removals of –0.35 Mt CO_2 eq in the HWP pool.

II. General description of the reference level

A. Overview

4. The FMRL of Portugal was constructed to reflect the expected level of emissions and removals in areas reported under Article 3, paragraph 4, of the Kyoto Protocol during the period 2013–2020, under a 'business as usual' scenario with regard to forest policies. The proposed value assumes that the post-2012 LULUCF accounting rules will contain provisions on force majeure, understood as high impact, low probability events beyond the control of Parties, in particular abnormally high levels of emissions from fires.

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

5. The methodology used for estimating projected emissions/removals from forest management activity is consistent with that used in the latest (2011) national inventory report (NIR) submitted by Portugal. Assumptions made with regard to the future performance of the country's forests are anchored in historical data included in the NIR, or presented as additional information in the FMRL submission.

2. Age-class structure

6. Age-class structure and rotation length represented the basis for estimating the future harvest for several timber-producing tree species such as eucalyptus spp. and maritime pine. The estimation of future harvesting figures took into account the characteristics of other tree species that are in uneven-aged stands or designated mainly for non-wood purposes (e.g. fruit, cork), or are included in protected areas.

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

7. Portugal did not explicitly factor out indirect effects of climate change in expected emissions and removals from forest management areas, owing to the associated technical difficulties. However, as shown by the results of national studies reference in Portugal's submission, the net effect of climate change on Portugal's forests is likely to be a reduction of forest productivity. Thus, levels of removals are likely to be lower than those included in the FMRL, which is a conservative approach. See also paragraph 21 below.

4. Other elements

Forest management activities already undertaken

8. Portugal considers all its forests managed, according to the National Forest Strategy (2006) and the regional forest plans, which include the minimal forestry measures to be implemented by all forest owners. Wildfires are a very important issue for forestry in Portugal, and the national plan for forest fire prevention (i.e. National Plan for Protection against Forest Fires, 2006) aims at increasing the resilience of forests to fires, reducing the impacts and undertaking rehabilitation measures. The proposed FMRL does not include the impact of forest management and wood policies introduced after 2009 and does not assume changes to these policies by 2020.

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

9. A 'business as usual' scenario was considered by Portugal as a continuation of the main drivers of emissions considered in its reporting under the Convention and the Kyoto Protocol in 2011, including the maintenance of the deforestation rate, harvesting level, production of HWP and emissions from soil and litter, as well as the background levels of emissions from fires.

Continuity with the treatment of forest management in the first commitment period

10. The Party makes no reference to the issue. Nevertheless, Portugal elected to report forest management activity in the 2008–2012 commitment period, and has clearly indicated in the FMRL submission that projected estimates are based on the historical ones included in its latest NIR (2011).

C. Pools and gases

1. Pools and gases included in the reference level

11. The inclusion of pools and gases in the FMRL is consistent with the coverage of pools and gases in Portugal's 2011 NIR. It consists of living biomass, dead organic matter, soil organic carbon, biomass burning and HWP. Soil drainage and liming are reported as not occurring and greenhouse gases (GHGs) associated with fertilization (i.e. nitrous oxide) are not included in the FMRL as they are addressed under the agriculture sector under the Convention (chapter 4 of the NIR).

2. Consistency with inclusion of pools in the estimates

12. The setting of the FMRL is consistent with that of the GHG inventory, as shown in paragraph 11 above.

D. Approaches, methods and models used

1. Description

13. Under the current reporting methodologies used by Portugal in the 2011 NIR, adapted for the FMRL estimates, forest management emission and removal estimates are based on areas affected by afforestation, reforestation and deforestation as well as forest management activities, and include estimation of the following: carbon removals from forest growth and emissions from wood harvest based on the gain–loss method; emissions/removals from HWP; emissions from forest fires; and carbon stock changes in soil and dead organic matter.

2. Transparency and consistency

14. Portugal's submission and the complementary information provided in response to questions posed prior to and during the TA is transparent. The models and methods used to estimate projections are described in the FMRL submission and the sources of the main parameters and characteristics used in models are provided. The modelling exercise is consistent with the methodology and data used in the 2011 NIR.

E. Description of the construction of the reference level

1. Area under forest management

15. The FMRL assumes a total area of managed forest (which equals the total forest area of the country) of 3.7 million hectares, whose age-class structure and species composition are clearly presented.

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

16. Forest management land includes areas that have been forest since 1990, while forest land remaining forest land also includes land afforested before 1990, so that the two areas are different. Nevertheless, as explained in the submission and the additional information provided in response to questions raised during the TA, the total area reported in the tables containing supplementary LULUCF information reported in 2011 under the Kyoto Protocol under afforestation/reforestation and forest management activities equals the total forest area reported under the Convention as forest land remaining forest land and land converted to forest land (common reporting format tables 5.A.1 and 5.A.2). The land transition matrix assumes the integration of the land converted to forest land into forest land remaining forest land after a standard 20-year period, and a constant afforestation rate from 1971 to 1989, which is reflected in the constant value in table 5.A.2.

3. Forest characteristics

17. Portuguese forests largely consist of uneven-aged stands, except for eucalyptus plantations with a low rotation age and, to some extent, the maritime pine with industrial wood utilization. Annual increment values in pure stands are considered, based on the

national forest inventories of 1995 and 2005, constant over the period from 1990 to 2009, and similar to the projected increment figures.

4. Historical and assumed harvesting rates

18. Total wood harvesting in Portugal ranged from 9.2 to 11.8 million cubic metres in the period from 1990 to 2009, with eucalyptus and maritime pine making up the majority of these figures. Wood demand, and consequently the harvest, is assumed to increase in the near future under the 'business as usual' policy scenario, by 6 per cent, as a direct consequence of a growing pulp and pellets industry. This figure was derived from the modelling exercise developed by the Joint Research Centre of the European Commission, which resulted in a total increase of wood demand at the European Union (EU) level of 9 per cent by 2020. This, together with the assumptions and estimations of gains from forest growth, leads to relatively stable projections of forest management removals up to 2020, as illustrated in figure 2 of the submission.

5. Harvested wood products

19. The estimated annual change in HWP in Portugal of 0.350 Mt CO_2 eq included in the FMRL is estimated using the Intergovernmental Panel on Climate Change *2006 IPCC Guidelines for National Greenhouse Gas Inventories*, volume 4, chapter 12. Data for production, imports and exports were derived from United Nations Economic Commission for Europe figures for the period 1964–2009 and, on this basis, the production estimates for the period 1900–1963 were extrapolated. The Party adopted a first-order decay function approach with default half-lives of two years for paper, 25 years for wood panels and 35 years for sawn wood.

6. Disturbances in the context of force majeure

20. Forest fires are the main natural disturbance to forest management in Portugal and are directly related to seasonal droughts, which are most common from June to September. Annual burning rates are highly variable, and the contribution of forest fires to emission figures is very significant in some years. Thus, the reference level scenario of 1.357 Mt CO_2 eq for forest fires was constructed by averaging the past values reported in annual GHG inventories, excluding the two highest years (2003 and 2005) and the two lowest (2007 and 2008).

7. Factoring out

21. The use of a projected reference level which includes age-class structure is considered to factor out dynamic age-class effects. With the present state of scientific knowledge, the effects of elevated CO_2 concentrations and indirect nitrogen deposition are considered to be approximately the same in the projections (i.e. reference level) and in the commitment period estimates, and therefore they can be assumed to be factored out.

F. Policies included

1. Description of policies

22. Policies are briefly presented in section 5.2.1 of the FMRL submission.

2. How policies are taken into account in the construction of the reference level

23. The proposed FMRL does not include the impacts of policies introduced after 2009 (e.g. EU Climate and Energy Package 2009) or assumptions about the expected impact of possible policy changes in the future.

III. Conclusions and recommendations

24. The expert review team considers that Portugal has calculated projections (2013–2020) for an FMRL on a transparent and consistent basis in accordance with decision 2/CMP.6.

Annex

Documents and information used during the technical assessment

Reference documents

Submission of information on forest management reference levels by Portugal, 18 April 2011. Available at <http://unfccc.int/files/meetings/ad_hoc_working_groups/kp/application/pdf/awgkp_portugal_fmrl_2011.pdf>.

Submission of information on forest management reference levels by Hungary and the European Commission on behalf of the European Union, 13 April 2011. Available at <http://unfccc.int/5896.php>.

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