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UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

CONFERENCE OF THE PARTIES\*

Fourth session

Buenos Aires, 2-13 November 1998

Agenda item 5 (a) (i)

**MATTERS RELATED TO THE KYOTO PROTOCOL**

**MATTERS RELATED TO DECISION 1/CP.3, PARAGRAPH 5**

**LAND-USE CHANGE AND FORESTRY**

**Submissions by Parties**

**Note by the secretariat**

**Addendum**

1. In addition to the submissions included in FCCC/CP/1998/MISC.1 and Add.1, one further submission has been received.
2. In accordance with the procedure for miscellaneous documents, this submission is attached and reproduced in the language in which it was received and without formal editing.

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\* Including the ninth sessions of the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation.

**FCCC/CP/1998/MISC.1/Add.2**

EZE.98-

PAPER NO.1: AUSTRIA  
(On behalf of the European Community and its member States)

Information related to the implementation of Article 3.3 of the Kyoto Protocol and the IPCC Special Report on land-use and land-use change and forestry issues, particularly on data and methods, requested according to FCCC/SBSTA/1998/6

### **Introduction**

Austria, on behalf of the European Community and its Member States, submits information related to the implementation of Article 3.3 of the Kyoto Protocol and the IPCC Special Report on land-use, land-use change and forestry issues, particularly some more detailed views on data and methods, as requested according to para 45 c(i) in FCCC/SBSTA/1998/6. Both submissions related to Art. 3.3 are relevant to the the SBSTA workshop on 24-25 September in Rome.

The information provided is supplementary to the information submitted by the EU on 15 August to the FCCC secretariat and includes the following items:

1. General remarks on data and methods
2. Detailed information on data and methods

### **General remarks**

Regarding verifiability of changes in carbon-stocks and transparency of reporting the EU endorses a system of full reporting which gives insight into **all** changes in **all** carbon-pools during the commitment period but limited use to meet the commitments under Art.3 (i.e. the use is limited to the activities under Art.3.3 of the Kyoto Protocol and possible additional activities to be decided under Art.3.4).

The aim has to be to develop a carbon accounting method for over sufficient time scales to reflect changes in long-term carbon storage as the appropriate basis for the partial accounting system which has to be established for the implementation of Art.3.3, and consistent with full carbon stock accounting for relevant activities in the longer term.

In the view of the EU the Reference Manual and the Workbook of the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories provide a starting point for guidance on methodologies by which emissions and removals according to Art.3.3 could be estimated. However, the simple default approach, which is based on very aggregate data and assumptions, does not provide an appropriate basis for a credible final inventory.

For the sake of comparability in the view of the EU additional methodological guidance is needed to specify which changes in carbon stocks. under Art.3.3 can be considered as direct human induced ones since 1990.

Methods to estimate the uncertainty of the emission and removal data for the activities under Art.3.3 should be provided also and the EU believes that reporting of the uncertainty of these data should become compulsory. The EU sees the need to agree guidelines for the supplementary information needed (under the provisions of Art 7.4 of the Protocol) for reporting activities under Art.3.3.

Section 2 of the EU's submission includes some specific requirements which should be met to establish a reliable, consistent and accurate inventory for the land-use change and forestry sector and the activities addressed in Article 3.3.

These comments on specific requirements will need to be linked to definitions of afforestation, reforestation and deforestation activities; see also EU-submission in FCCC/CP/1998/MISC.1.

## **2. Information on data and methods relevant to the implementation of Art.3.3**

The EU believes that several refinements within the context of the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories are needed to allow for a reliable, consistent and accurate emission inventory for the land-use change and forestry activities under Article 3.3 of the Kyoto Protocol. Whereas the existing guidelines may be usually quite appropriate to estimate the emissions and removals of the land-use change and forestry activities for a whole country they do not identify areas where afforestation, deforestation and reforestation took place since 1990. The following table identifies proposals of refinements which could help to adopt the existing guidelines according to the needs of Art 3.3 of the Protocol.

Revised 1996 IPCC Guidelines: Reference Manual	Refinement proposed by the EU
<p>page 5.15 A simple approach, covering the main subcategories, with calculations based on simple default assumptions and default data is provided.</p>	<p><b>Level of detail</b></p> <p>Calculations should be done at the appropriate level of detail, substituting simple default assumptions with more appropriate country- or region-specific data and assumptions from local sources and adequate representation of the dynamics for Article 3.3 activities, such as keeping track of the areas and stocks by species or forest type and by age of stands.</p>
<p>Page 5.13 (regions, species etc.) Users are encouraged to carry out the GHG emissions inventory calculations at a finer level of detail, if possible.</p>	<p>Users should carry out the GHG emissions inventory calculations at an appropriate level of geographic detail with respect to subdivision into subcategories reflecting important differences in forest management type, species, soil type etc.</p>
<p>Page 5.18 (conversion factors) The recommended unit of calculation is tonnes of dry biomass, and it is necessary to convert to carbon for emission estimates. A general default value of 0.50 tonnes-C/tonne dry biomass is recommended for all biomass calculations. If more accurate conversion values are available for the particular system, these should of course be used.</p>	<p>Conversion factors appropriate to categories of forests should be considered to be used for the calculation of the tonnes C per tonne dry biomass.</p>
<p>Page 5.22 (densities of tree species) There is considerable variation in average densities for different tree species. It is much better to use actual measured average values if available, or literature values specific to the dominant species in a particular forest.</p>	<p>Densities appropriate to the mix of species in the growing stock of a particular region or forest, should be used, based on literature data or field measurements.</p>
<p>Page 5.25, footnote 20 Level of detail (calculations for each relevant forest type) The calculation (annual forest area multiplied by the net change in aboveground biomass) is carried out for each relevant forest type and, if appropriate, by region</p>	<p>The calculation of the net change in aboveground biomass has to be carried out for each relevant forest type and, if appropriate, by region within a country. The areas have to be estimated on the basis of</p>

within a country. Defining regions will require balancing data availability, biological and land-use heterogeneity, and practical considerations as available time and effort. Furthermore, developing adequate land use and land-use change data is a central issue.

Page 5.30 (own values reflecting practices and burning conditions in the regions of interest)

A portion of the biomass that is cleared is usually burned on site. Some estimates in the literature suggest that a global average of about 50 per cent of the cleared biomass is burned in the first year with the remaining 50 per cent left to decay. There are certainly wide variations in burning practices between and within regions.

Users should provide their own values on the portions of the immediate fates of biomass that is cleared reflecting practices and burning conditions in the country or region.

Page 5.31 (decay period)

Emissions from decay: The 10-year period is a recommended default value, as a reasonable historical horizon in light of the twin realities of data availability and biological dynamics. This can be varied if the user has data or a strong rationale to suggest that a longer or shorter average decay time is more representative of local conditions.

The emissions from decay should be calculated using a time period appropriate to the Article 3.3 categories and the commitment period in light of local conditions.

Page 5.45 (soil carbon data based on field studies in the specific region)

Where available, information from country soil surveys, field studies and long term agricultural experiments, as interpreted by knowledgeable soil scientists and agronomists, will provide the best estimate for soil carbon stock estimates.

Dynamic calculations should be made with data which are based on information from country soil surveys and field studies.

Page 5.11 (LUCF activities over sufficient time scales)

The methodology attempts the flux to or from the atmosphere in the Inventory Year. To do this it is necessary to obtain estimates of land-use change activities for many years

### **Completeness of inventory**

The guidelines for supplementary information should specify for any activity included under Art.3.3 the number of years prior to the Inventory Year for which data on land-use change activities should be available

prior to the Inventory Year.

taking definitions and regional differences into account.

Page 5.12 (Full carbon stock accounting including belowground biomass)

The fate and amount of belowground biomass (roots, etc.) is currently ignored in the calculation.

The fate and amount of belowground biomass (roots, etc.) should be considered to be taken into account for the calculations of the emission inventory.

Page 5.32 (Soil carbon)

For calculating the annual CO<sub>2</sub> flux associated with the loss of soil organic carbon following forest clearing or grassland conversion, the methodology described in Section 5.3 for all types of transitions, and will not be described further here.

In any calculation of changes in soil carbon stocks associated with the Art.3.3 activities, dynamic calculation methods should be used.

Page 5.23, footnote 15 (include all forest clearing activities)

Conversion of tropical forests to pasture and cropland accounts for the largest share of global forest clearing and resulting CO<sub>2</sub> emissions. The discussion and default information focus on this case, as it is most important that national inventories account for the largest contributions to emissions first. Forest clearing for other purposes (e.g. urban development) should also be accounted for to the extent possible.

All forest clearing activities (e.g. for the purpose of urban development) should be accounted for.

### **Precision**

Page 5.16 (Precision of assessment of biomass stocks)

A number of countries with highly developed commercial forestry industries routinely collect forest biomass data at a detailed inventory level which allows for relatively precise and direct assessment of the changes in biomass stocks, and equivalent carbon fluxes.

Annual change in average aboveground biomass uptake and equivalent carbon fluxes should be estimated with the help of statistically sufficient forest inventory data.

### **Transparency**

The requirements for transparency should include separate data reporting for the three direct human-induced activities afforestation, deforestation and reforestation since 1 January 1990.

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In the context of the uncertainties and the proportion of the net changes in greenhouse gas emissions by sources and removals by sinks according to Art.3.3 and the aggregate anthropogenic carbon dioxide equivalent emissions of the GHGs listed in Annex A of a Party, the SR should consider thresholds above which the calculations of the Art.3.3 activities following the refined guidelines should be used.

Additional methodological work may also be needed with respect to a number of other issues relevant to the SR including:

- a.) Prescribed Burning of Forests (What is human induced? Release of non-CO<sub>2</sub> trace gases in years after burning).
- b.) Carbon Stock in Dead Organic Matter (excluding soil) of Forests (Quantity of carbon in woody debris, belowground remains and dry standing stems excluded in the present methodology).
- c.) Forest and Grassland Conversion (Subsequent burns in years after clearing; non-CO<sub>2</sub> trace gases released after burning; delayed release of non-CO<sub>2</sub> trace gases after land disturbance; methane from termites attributable to biomass left to decay; fate of roots in cleared forests; aboveground biomass after conversion).
- d.) Burning of forests; emission ratios of non-CO<sub>2</sub> trace gases (see also page 5.32, footnote 24). Emission ratios should be estimated to represent as closely as possible the ecosystem type being burned, as well as the characteristics of the fire.

(See also pages 5.50 to 5.53 of the Reference Manual).

The EU was not commenting on the treatment of harvested wood pending the outcome of further work by the IPCC.