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Item 3 (a) of the provisional agenda

Methodological issues

Good practice guidance for land use, land-use change and forestry

(LULUCF) activities under the Kyoto Protocol, harvested wood products

and other issues relating to LULUCF

## **Future methodological issues relating to land use, land-use change and forestry**

### **Submissions from Parties**

1. The Subsidiary Body for Scientific and Technological Advice (SBSTA), at its nineteenth session, noted an aim to address the issues referred to in paragraph 1 (h) of draft decision -/CMP.1 (*Land use, land-use change and forestry*), and the need to discuss the issues referred to in paragraph 3 (d) of decision 11/CP.7. The SBSTA invited Parties to submit to the secretariat, by 15 April 2004, their views on these issues and other related LULUCF issues (FCCC/SBSTA/2003/15, para. 24 (i)–(j)).
2. The secretariat has received four such submissions. In accordance with the procedure for miscellaneous documents, these submissions are reproduced\* in the language in which they were received and without formal editing.

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**FCCC/SBSTA/2004/MISC.8**

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PAPER NO. 1: CANADA

**SUBMISSION OF CANADA**

**ISSUES RELATED TO PARAGRAPH 1(H) (“FACTORING OUT”) OF DRAFT  
DECISION -/CMP.1 (LAND USE, LAND-USE CHANGE AND FORESTRY) AND OTHER  
RELATED LAND USE, LAND-USE CHANGE AND FORESTRY ISSUES**

**15 April 2004**

**1. INTRODUCTION**

SBSTA19 invited Parties to submit views on the aim to address the issues addressed in paragraph 1(h) of draft decision -/CMP.1 (*Land use, land-use change and forestry*), the issues referred to in paragraph 3(d) of 11/CP.7, and other related LULUCF issues (paragraph 24(j), FCCC/SBSTA/2003/15).

In paragraph 3(d) of 11/CP.7 the IPCC was asked to develop practicable methodologies to factor out direct human-induced changes in carbon stocks and emissions and removals from changes in carbon stocks and emissions and removals due to indirect and natural effects and effects due to pre-reference year practices in forests. The paragraph referred to carbon dioxide fertilization and nitrogen deposition as examples of indirect effects. Paragraph 1 of draft decision -/CMP.1 (*Land use, land-use change and forestry*) affirmed a set of eight principles that govern the treatment of land use, land-use change and forestry activities. Principle 1(a) is that the treatment be based on sound science and principle 1(h) is that accounting exclude removals resulting from elevated carbon dioxide concentrations above their pre-industrial level, indirect nitrogen deposition and the dynamic effects of age structure resulting from activities and practices before the reference year.

**2. IPCC EXPERT MEETING REPORT**

In response to the invitation contained in paragraph 3(d) of 11/CP.7, the IPCC submitted to the SBSTA its Expert Meeting Report on *Current Scientific Understanding of the Processes Affecting Terrestrial Carbon Stocks and Human Influences Upon Them*. The report provided a good summary of the state of the science relevant to factoring out. While the Expert Meeting Report has not been subject to a formal IPCC review process, which is in keeping with standard IPCC practice for workshop reports, Canada believes that Parties should pay close attention to the discussion and outcomes of the expert meeting.

The experts at the meeting concluded that it was currently not possible to develop practicable methodologies within the timeframe of the 11/CP.7 request due to the state of the science, although they agreed that it was possible to elaborate on the science and outline a framework for developing methodologies. The experts agreed that

*“The scientific community cannot currently provide a practicable methodology that would factor out direct human-induced effects from indirect human-induced and natural effects for any broad range of LULUCF activities and circumstances”.*

**3. FACTORING OUT AS A POLICY ISSUE**

Canada’s firm view remains that factoring out is not a policy issue relevant for the purposes of the first commitment period. The Bonn Agreement (5/CP.6) clearly states that the forest management cap is

meant to pragmatically implement the guiding principles for LULUCF, including principle 1(h). The LULUCF decision in 11/CP.7 (paragraph 11) and the Article 7 decision in 22/CP.7 (paragraph 7) reinforce the intent of the forest management cap.

Canada acknowledges that the factoring out issue may be relevant for negotiations for the treatment of LULUCF post-2012. In this regard, Canada supports the conclusions in the IPCC Expert Meeting Report and believes that further work by IPCC on this issue would not be useful until Parties, within the SBSTA process, have identified and discussed the key policy questions around factoring out. The following observations should help guide SBSTA discussions.

- 1) The issue of factoring out is broader than that expressed in principle 1(h) of -/CMP.1 (Land use, land-use change and forestry), as Parties made clear in their request to IPCC for a wide-ranging look at factoring out natural and indirect human-induced effects. Discussion of factoring out must be balanced, comprehensive and guided by the objective of correctly attributing emissions and removals.
- 2) Natural and indirect human-induced influences result in emissions as well as removals. Natural fires, insect infestations, disease and windstorms can result in significant emissions. Through human-induced climate change the incidence and severity of such effects are likely to increase. As well, temperature and precipitation changes due to climate change will affect growth and decomposition processes.
- 3) Activities and practices before the reference year can affect the forest age-class structure such that future emissions and removals are affected. When considering the dynamic effects of age-class structures both enhanced removals and emissions should be discussed.
- 4) The relevance of factoring out depends on the spatial scale, magnitude and timing of the emissions and removals due to natural effects, indirect human-induced effects and pre-reference year practices and activities. Both landscape-level and local effects have an impact on national accounting of emissions and removals. The potential magnitudes and timing may vary greatly depending on which effects are under discussion. The relevance also will vary depending on which LULUCF activity is being considered.
- 5) The practicality of factoring out depends on scientific understanding, delineation of acceptable levels of precision and error, and the cost of factoring out.
- 6) Development of practicable methodologies for factoring out will need to involve policy discussions but should be based on sound science. For example one policy question is whether any future factoring out must involve separately accounting for various natural and indirect emissions and removals, and the corresponding scientific question is whether this separation is possible.
- 7) There is variable scientific understanding about the attribution, magnitude, timing, and interaction among the different natural effects, indirect human-induced effects and effects of pre-reference year activities and practices. The implications of this uncertainty for any future methodological decisions on LULUCF need to be considered.
- 8) Any future request to IPCC for scientific advice on factoring out will need to be clear and focussed. During SBSTA discussions Parties should identify what types of advice from IPCC would be helpful.

#### **4. NEXT STEPS**

Canada believes that Parties need to continue discussions on factoring out to better understand the key policy questions and to understand what direction to provide in the future to IPCC for work on this issue.

Canada notes the interest expressed by some Parties in future SBSTA discussions that go beyond the factoring out issue. Suggestions have been made for discussions that consider the implementation of all

the LULUCF principles affirmed in draft decision -/CMP.1 (*Land use, land-use change and forestry*), including sustainable resource use and, more broadly, the role of LULUCF in combating climate change in the post 2012 period. However, Canada cautions that it and many other Parties are still engaged in their respective domestic processes to elaborate the LULUCF components of their National Inventory Systems. Within this process, Canada is still involved with finalizing many key policy decisions (e.g. on definitions of forest, the managed forest, etc.), modeling the implications of these decisions and consulting with stakeholders. The decisions, outcomes and stakeholder feedback may significantly influence how Canada may wish to proceed with regards to a future treatment of LULUCF. Accordingly, Canada's perspective is that Parties need to formally consider whether broader SBSTA discussions on the LULUCF principles and the future role of LULUCF post-2012 should begin only when the discussion can be better informed by the experiences and lessons learned from more advanced domestic processes on the implementation of the LULUCF system for the first commitment period.

PAPER NO. 2: IRELAND ON BEHALF OF THE EUROPEAN COMMUNITY AND ITS MEMBER STATES AND SUPPORTED BY THE FOLLOWING ACCEDING STATES AND CANDIDATE COUNTRIES: LATVIA, SLOVENIA AND ROMANIA

**SUBMISSION BY IRELAND ON BEHALF OF THE EUROPEAN COMMUNITY AND ITS MEMBER STATES ON FACTORING OUT AND THE DYNAMIC EFFECTS OF AGE STRUCTURE AND OTHER LULUCF RELATED ISSUES.**

**THIS SUBMISSION IS SUPPORTED BY THE FOLLOWING ACCEDING AND CANDIDATE COUNTRIES: LATVIA, SLOVENIA AND ROMANIA.**

**Dublin,**

**Treatment of LULUCF issues in the future**

The EU notes with satisfaction that significant progress on challenging issues related to LULUCF has been achieved for the first commitment period of the Kyoto Protocol. As a result, Parties are now able to implement these provisions. However, for the treatment of LULUCF in the future, there is a need for further work on many important issues, such as on factoring out of indirect effects, the effects of age structure, harvested wood products, degradation and revegetation, coverage of the LULUCF categories or activities, as well as rules and modalities for LULUCF. The EU believes that all these issues and their inter-linkages need consideration.

**Factoring out**

This submission provides initial views on the development of practicable methodologies to factor out direct human-induced changes in carbon stocks and greenhouse gas emissions by sources and removals by sinks from changes in carbon stocks and greenhouse gas emissions by sources and removals by sinks due to indirect human-induced and natural effects (such as those from carbon dioxide fertilization and nitrogen deposition), and effects due to past practices in forests (pre-reference year), following the request by SBSTA (FCCC/2003/SBSTA/L.22 paragraph 10).

Factoring out is an important principle relating to the treatment of sink removals and their contribution to the stabilisation of greenhouse gas concentrations in the atmosphere. The issue is to exclude indirect human-induced removals, and account only for additional, direct human-induced changes in carbon stocks and emissions resulting from land use, land use change and forestry activities. Such exclusion is important given the gross-net accounting approach used for forestry activities under the Kyoto protocol.

Factoring out is among the principles that govern the treatment of land use, land use change and forestry activities in the Marrakesh Accords (-/CMP.1 - FCCC/CP/2001/13/Add.1, paragraph 1(h)). This paragraph affirms that accounting should exclude removals from CO<sub>2</sub> fertilisation, indirect nitrogen deposition and the dynamic effects of age structure, resulting from activities and practices before the reference year. This principle was taken into account in the Marrakesh Accords where an 85% discount factor was used to arrive at the values in the appendix to decision 11/CP.7 (for forest management activities)<sup>1</sup>. The EU however, recognises the difficulty in establishing complete and practicable methodologies to factor out direct removals and to therefore account only for additional sinks under the Kyoto Protocol.

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<sup>1</sup> See also footnote 5, decision 22/CP.7.

The issues are well set out in the report of the IPCC meeting on *Current scientific Understanding of the Processes Affecting Terrestrial Carbon Stocks and Human Influences Upon Them* (IPCC-XXI/INF.1). The EU thanks the IPCC for this valuable report and notes that, among other things, it

- concludes that at this stage science cannot provide comprehensive methodologies for factoring out direct human induced changes from indirect human-induced changes in carbon stocks and greenhouse gas emissions and removals by sinks,
- discusses the large size and variability of net carbon uptake by the terrestrial biosphere compared with emissions reduction commitments under the Kyoto Protocol,
- lists processes that may be contributing to the size and variability of the terrestrial sink and suggests a framework for identifying effects and their interactions, and
- discusses possible approaches to factoring out including control plots and top-down assessments in combination with bottom-up approaches.

The Report also provides a research agenda, suggesting in the near term the need for further synthesis of existing knowledge through expert workshops and its application to pilot projects aimed at developing preliminary methods, coupled to a much longer term effort to develop comprehensive understanding.

### **Conclusions**

The EU believes that there is a need to consider the issues presented in the Report in the work of the SBSTA. However, the EU believes that issues related to factoring out should be considered as an integral part of future process of identifying issues relevant to future treatment of LULUCF. The EU suggests that during SBSTA 20 Parties should consider a process identifying elements for future treatment of LULUCF.

In this context the EU believes that Parties need to consider:

- to what extent the development of preliminary methods as identified in the IPCC's Science Statement is feasible for application during the future commitment periods under the Kyoto Protocol,
- what programme of work should be embarked upon to develop such methods,
- the implications of such developments for the future treatment of sinks under the Protocol,
- the implications if such methods are not regarded as feasible,
- recommendations necessary for longer term scientific work to ensure that terrestrial carbon pools and ecosystems contribute towards the achievement of Article 2 of the UNFCCC.

The EU believes that these matters need to be considered by Parties when considering next steps on this issue at SBSTA 20, in accordance with the conclusions reached at SBSTA19.

PAPER NO. 3: SWITZERLAND

**Methodologies to factor out indirect human-induced and natural effects in the LULUCF sector**

In response to the call for comments at the 19<sup>th</sup> session of the SBSTA concerning the issues referred to in paragraph 1 (h) of draft decision -/CMP.1 (*Land use, land-use change and forestry*), Switzerland presents the following views:

1. During the conference debate, Switzerland supported all the principles in paragraph 1 of draft decision -/CMP.1 (*Land use, land-use change and forestry*) and still stands fully by them.
2. For the first commitment period, Switzerland proposed a discount rate as a pragmatic way to exclude the effects of elevated carbon dioxide concentration, nitrogen deposition, climatic changes, and dynamic effects of age structure in forests. The conference then decided in favour of a country-specific cap for forest management, an even more pragmatic approach, which addresses factoring out only to a limited degree.
3. Switzerland has the view, that for the second and consecutive commitment periods the issue should be re-addressed. A more appropriate methodology needs to be elaborated. Given the current scientific knowledge, again only a pragmatic solution appears to be feasible. As such, a discount rate needs to be re-evaluated for application in the second and consecutive commitment periods.
4. Attention should be turned to the fact that factoring out of indirect human-induced and natural effects might be accepted by Parties only if emissions and removals are accounted by symmetrical rules. We call this the symmetry issue. If such effects are factored out from removals by sinks, an argument can be made to apply the same principle for the accounting of emissions. Moreover, arguments might be brought forward to differentiate between stocks where a factoring out was applied in its past or not. This situation arises only because no factoring out will be done in the first commitment period. For instance, one might argue that factoring out for emissions would only be allowed for those stocks for which factoring out was also applied during the build-up phase and, vice versa, factoring out of emissions would not be allowed if none was done in the stock's preceding sink phase. The result would be a highly complex accounting scheme, where one would need to keep track of stocks for which factoring out was ever applied or not.

Switzerland proposes to consider a considerably simpler solution if one wishes to address the symmetry issue:

A discount rate of [x]% [for carbon credits and [y]% for carbon debits]<sup>1</sup> shall be applied during the accounting phase for all carbon credits and carbon debits, which result from activities under articles 3.3 and 3.4 beginning with the onset of the second and subsequent commitment periods.

5. Depending on how complex a factoring out accounting scheme is designed, Switzerland proposes to examine whether a full carbon accounting system would not become preferable, which incidentally could include also inter alia harvested wood products. Cognizant of the ultimate goal of the UNFCCC, the closer a carbon accounting system is able to reflect the true effects of removals of GHG by sinks and emissions by sources onto the atmospheric GHG-concentrations, the more preferable such an accounting system becomes and the better can it really serve the goals of the convention.

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<sup>1</sup> Perfect symmetry might not be the only option. Thus Switzerland proposes to consider above legal text for negotiation.



PAPER NO. 4: UNITED STATES OF AMERICA

**United States Submission on issues related to  
the processes affecting terrestrial carbon stocks and human influences on them**

April 16, 2004

The United States does not intend to pursue the Kyoto Protocol to the Framework Convention on Climate Change and does not seek to impede any country from pursuing commitments under the Kyoto Protocol. Notwithstanding the United States position on the Kyoto Protocol, the United States has an interest in ensuring that the overall work program of the Intergovernmental Panel on Climate Change and the subsidiary bodies to the Framework Convention on Climate Change are efficient and productive. We note that in the context of the Kyoto Protocol, parties invited the Intergovernmental Panel on Climate Change (IPCC) to:

“Develop practicable methodologies for factoring out direct human-induced changes in carbon stock and greenhouse gas emissions by sources and removals by sinks from changes in carbon stocks and greenhouse gas emissions by sources and removals by sinks due to indirect human-induced and natural effects (such as those from carbon dioxide fertilization and nitrogen deposition), and effects due to past practices in forests (pre-reference year)”.

The IPCC concluded in their July 21-23, 2003 expert meeting report that “the scientific community cannot currently provide a practicable methodology that would factor out direct human-induced effects from indirect human-induced effects and natural effects for any broad range of land use, land use change, and forestry activities and circumstances”.

We concur with the findings of the IPCC. The conclusions of the IPCC experts meeting call into question the concept of developing separate accounting of direct- and indirect-human induced emissions and sinks from land uses and separate accounting for the influences of past practices. In particular, we would like to note the following findings:

- At this stage, scientific knowledge and the published literature on the subject have not advanced far enough for a comprehensive methodology to be developed;
- Limited exercises would not provide an adequate basis for a comprehensive methodology and would unduly strain the resources of the IPCC; and
- There are difficulties in engaging in the work in a non-policy prescriptive way.

Given the state of the science, the concerns over engaging the IPCC on a policy-prescriptive exercise, and limited resources and multiple demands on the IPCC, we would not support efforts to further engage the IPCC on this issue. We believe that some progress on this issue could be made and an improved understanding among the parties could be gained by having an open-ended discussion within the SBSTA on the issue, without focusing on a new plan of work or procedural recommendations at this time. This discussion could be focused around a series of questions, including the ones provided below.

Questions of a technical nature:

- Will methodologies for factoring out the indirect-human effects and effects of past practices alter the incentives for protecting and enhancing greenhouse gas sinks and reservoirs?
- Do indirect human influences affect the timing or magnitude of emissions and removals, or both? Will this have implications for a carbon accounting system?
- At what geographic scales are different indirect effects (e.g., CO<sub>2</sub> fertilization, tropospheric zone, climate variability) most important?
- Are different sequestration activities in forestry and agriculture affected differently by indirect effects?
- What are the implications for the functioning of the inventory system if indirect human influences are factored out? Does factoring-out indirect human effects and the effects of past practices change the resources required to prepare greenhouse gas inventories?

Questions of a policy nature:

- Should decisions to continue management strategies and approaches in place prior to the reference year be considered “current practices” or “past practices”?
- How should emissions from carbon sequestered by indirect human influences be treated?

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