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Bonn, 31 May - 11 June 1999

Item 5 (a) of the provisional agenda

METHODOLOGICAL ISSUES

LAND-USE, LAND-USE CHANGE AND FORESTRY (DECISION 1/CP.3, PARAGRAPH 5 (a))

Issues to be considered at the second SBSTA workshop on land-use, land-use change and forestry

Submissions from Parties on Article 3.3 and 3.4 of the Kyoto Protocol

Note by the secretariat

Addendum

1. In addition to the submissions included in document FCCC/SBSTA/1999/MISC.2, a submission from Switzerland was received on 2 February 1999.*
2. In accordance with the procedure for miscellaneous documents, this submission is attached and is reproduced in the language in which it was received and without formal editing.

* In order to make these submissions available on electronic systems, including the World Wide Web, these contributions have been electronically scanned and/or retyped. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

FCCC/SBSTA/1999/MISC.2/Add.1

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PAPER NO. 1: SWITZERLAND

**ISSUES RELATED TO ARTICLE 3.4 TO BE CONSIDERED
AT THE SECOND SBSTA WORKSHOP**

In response to the call for comments at the fourth session of the Conference of the Parties concerning issues related to Article 3.4 to be considered at the second SBSTA workshop, Switzerland presents the following views.

1. At the outset, Switzerland would like to point to its initial observations concerning the implementation of Article 3.4 which are documented in FCCC/CP/1998/MISC.9. The present submission relies on the fact that many carbon pools can be estimated only with considerable uncertainty. The quantification of soil carbon is one important example in this respect. With the following comments and on the basis of ongoing research, Switzerland would like to contribute to the discussion on estimating soil carbon and would be prepared to present the results at a workshop dedicated to Article 3.4.
2. According to scientific literature, soils are the most important global terrestrial carbon reservoirs. In the light of this fact it seems obvious that they need to be taken into account in any land use change activity according to Art. 3.3 and 3.4.. At the same time, the usefulness of changes in soil carbon stock as an indicator for the sustainability of land use practices could be considered more closely.
3. Given the high C sequestration in soils and their sensitivity with respect to changes in climate or management practices, practicable methods have to be identified and tested to assess soil organic carbon stocks for different soil types. In forests, this includes in particular estimation of coarse woody litter and organic layers in the soils, but also the determination of belowground plant biomass and the measurement of soil bulk density. More details in methods have to be specified to come to a transparent and standardised approach allowing comparisons of cultivated and native soils and the effects of a change from one land use class to another. A special challenge is the high spatial variability of soils and consequently of soil carbon. Thus, there is a need for methods that are adapted to the situation of a country or a specific region.
4. The need to establish stock change data for short time intervals such as the first commitment period under the Kyoto Protocol entails particular problems. In a five year period, uncertainty ranges in the assessment of the stocks might be greater than the factual stock changes. Under these circumstances, measuring the fluxes is likely to be a more appropriate method to get reliable data. Switzerland has applied a simple model-based approach to estimate changes in C stocks or fluxes in forest soils. The model allows the estimation of soil organic compound fluxes using inventory and growth trend data. It can be used to estimate trends of soil carbon caused by a certain management practice and could be further developed to assess the effects of land-use change on soil organic carbon stocks. At present, a project is under way to apply the model at the international level.

5. Methodological issues that need to be addressed in more detail in the forthcoming discussion of activities included under articles 3.3 and 3.4 include, i.a.,
 - properties of different soil types with respect to carbon storage as well as net CH₄ and N₂O flows
 - sensitivity of soil organic matter to changes in moisture and temperature
 - development of soil carbon reservoirs after harvesting of biomass
 - comparison of cultivated and native soils (equivalent soil mass vs. fixed soil depth approach)
 - spatial resolution of statistical models
 - general assessment of strengths and weaknesses of different inventory methods.

6. Finally, Switzerland deems it important to reiterate that the promotion of sustainable management of sinks and reservoirs is amongst the commitments listed in Article 4.1c of the FCCC. Comprehensive accounting of GHG flows is seen as an important means to incite the use of sustainable sink/reservoir management practices.

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