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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 document FCCC/CP/1998/MISC.9, two further submissions have been received.
2. In accordance with the procedure for miscellaneous documents, these submissions are attached and reproduced in the language in which they were received and without formal editing.

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

FCCC/CP/1998/MISC.9/Add.1

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PAPER NO. 1: AUSTRALIA

AUSTRALIAN SUBMISSION ON ARTICLE 3.4 OF THE KYOTO PROTOCOL

Art. 3.4 of the Kyoto Protocol requires that “the Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session or as soon as practicable thereafter, decide upon modalities, rules and guidelines as to how, and which, additional human-induced activities related to changes in greenhouse gas emissions by sources and removals by sinks in the agricultural soils and the land-use change and forestry categories shall be added to, or subtracted from, the assigned amounts for Parties included in Annex I, taking into account uncertainties, transparency in reporting, verifiability, the methodological work of the Intergovernmental Panel on Climate Change, the advice provided by the Subsidiary Body for Scientific and Technological Advice in accordance with Article 5 and the decisions of the Conference of the Parties. Such a decision shall apply in the second and subsequent commitment periods. A Party may choose to apply such a decision on these additional human-induced activities for its first commitment period, provided that these activities have taken place since 1990.”

How should “additional activities” for inclusion under Article 3.4 be selected?

Australia continues to support the comprehensive approach as required by the Framework Convention.

As a first step, Article 3.3 requires countries to count a limited range of land use change and forestry activities towards meeting their Kyoto commitments under Article 3. Article 3.4 provides a process for the inclusion of additional activities which will lead to a more comprehensive treatment of activities in the areas of agriculture, land use, land use change and forestry.

Decisions on the inclusion of additional activities should be guided by the comprehensive approach. These decisions should be based on sound scientific and technical understanding and take into consideration the advancing nature of scientific knowledge related to agriculture, land use, land use change and forestry. In this context, outcomes from the IPCC Special Report on Land Use, Land Use Change and Forestry will play a key role.

Australia considers that activities that Parties agree to include as a result of the Article 3.4 process will need to be subject to full accounting of relevant carbon pools measured as changes in carbon stocks.

Parties should agree on a process for determining what activities should be included under Article 3.4. With reference to relevant UNFCCC and IPCC definitions and other related articles of the Protocol, this process should:

- build on current submissions from Parties to develop guidelines for selecting additional activities under Article 3.4
- recognise the value in progressively agreeing on guidelines while accepting that

decisions on some guidelines may not be possible until the findings and recommendations in the IPCC Special Report are available

- consider potential activities for inclusion under 3.4 with reference to these agreed guidelines.

In this context, Australia suggests the following guidelines for selecting additional activities for inclusion under Article 3.4:

- The activity contributes to the overall objective of the Convention and the Kyoto Protocol.
- The effects of the activity, on the basis of sound definitions and science, can be adequately identified, measured and verified.
- The activity (or changes to existing activities) take into account requirements of other international environmental agreements.
- The inclusion of the activity is consistent with the overall functioning and objectives of Article 3 and other relevant provisions of the Kyoto Protocol and UNFCCC.

Initially, these guidelines and potential activities could be considered at SBSTA9/COP 4 and be progressed at the SBSTA workshop on Article 3.4 in early 1999. Results of the workshop should inform further SBSTA consideration of processes related to Article 3.4 in June 1999.

PAPER NO. 2: JAPAN

**INFORMATION RELATED TO THE IMPLEMENTATION OF ARTICLE 3.4
OF THE KYOTO PROTOCOL**

1. Basic Perspectives

To decide the details of Article 3.4, it is important to take into account the following basic perspectives.

- Contribute not only to the short term goal but also to the achievement of the ultimate objective of the Convention

As the ultimate objective of the UN Framework Convention on Climate Change is to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, it is necessary to contribute not only to achieve the reduction commitments of each Party articulated in the Kyoto Protocol but also to achieve the ultimate objective of the Convention in the long run.

- Maintain consistency among activities with regard to the estimation of the amount of changes in carbon stocks

It is important not to appreciate certain activities too much (or too little) or not to appreciate only a part of the activities related to carbon removal in a series of silvicultural activities when estimating their short-term effect on greenhouse gas removal. For example, in the case of sustainable forest management, which has an equal balance between emissions and removals of CO₂ in the long run, it is necessary not to overestimate the temporal carbon removals/emissions on the short term carbon balance.

- Be human-induced activities

According to the provisions of Article 3.4, the estimate of carbon stock changes is limited to human-induced activities. Since there is no term "direct" in Article 3.4 as there is in Article 3.3, with respect to human-induced activities, various human-induced activities could be included. However, some activities such as CO₂ fertilization by atmosphere should be excluded, respecting the objectives of the Convention which is to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

- Prevent large uncertainties

It is necessary to exclude large uncertainties. Some examples of uncertainty include the following:

(a) Uncertainty related to definitions, i.e. differing interpretations of source and sink categories, other terms or units, and the ambiguity in the assumptions used for estimating the amount of CO₂ emissions or removals.

(b) Uncertainty related to estimation methodologies which are caused by the use of simplified formulas with "default" values, especially emission factors as well as related assumptions that represent characteristics of a given population.

(c) Uncertainty in the data on basic socio-economic activities.

(d) Inherent uncertainty in the scientific understanding of the basic processes leading to emissions and removals, i.e. the uncertainty caused by lack of data and analysis, observational error, data provided by methodologies in which the uncertainties of the data are impossible to estimate.

(e) Uncertainty related to institutional accountability of organizations conducting the activities.

However, special attention should be paid to the fact that the term "uncertainty" is mentioned only in Article 3.4 and not in Article 3.3. Uncertainties whose levels are at least similar to those of the afforestation, reforestation and deforestation in Article 3.3 should be allowed.

- Keep high levels of transparency in reporting and verifiability

It is necessary to keep high levels of transparency in reporting. Sufficient data and information should be provided to allow a third party or international experts to understand the report properly. Thus to avoid bias in understanding and interpretation. The following are the minimal requirements for transparency in reporting:

- Basic activity data used in the calculations with the list of reference documents
- The Emission factors used in the calculations with the list of reference documents
- Descriptions of the major assumptions

In order to secure high verifiability, a third party or a team of international experts should be able to do the following:

- Review data, documentation, procedures and methodologies used;
- Repeat sampling and measurements
- Execute comparative analyses on procedures and methods.

- Respect the implications of achieving the quantified emission limitation for each nation.

Each nation has different forests with regard to scale, age, and type of forest, as well as other land use. Therefore it is necessary to pay attention to the fact that selection of certain additional human-induced activities in accordance with Article 3.4 could have different implications to different countries.

- Prevent generating disincentives for sustainable management of the natural environment

Forests have many roles such as timber production, preservation of biodiversity, cultivation of water source, conservation of the soil, and supply of recreation fields. In addition, there are various types of natural environments which are quite valuable from viewpoints other than the mitigation of climate change.

In defining the activities articulated in Article 3.4, it is important not to provide disincentives for sustainable management of the natural environment. In this way the health and vitality of the natural environment is maintained, while at the same time various human needs are met sustainably.

2. List of Potential Human-induced Activities to be Discussed

The following are a list of human-induced activities related to Article 3.4 which deserve scientific assessment.

I. Afforestation, reforestation and deforestation excluded from the sink activities by Article 3.3

II. Forestry management practices

- (1) Silvicultural practices
- (2) Changes in rotation periods
- (3) Low impact harvesting practices

III. Forest degradation and countermeasures

- (1) Forest fire / forest fire control
- (2) Forest degradation caused by pests / pest control
- (3) Forest degradation caused by acid precipitation / countermeasures to acid precipitation
- (4) Activities which cause soil erosion leading to forest degradation / countermeasures to soil erosion

IV. Conservation / destruction of natural ecosystems

- (1) Forest conservation
- (2) Conservation / destruction of natural ecosystems other than forests

V. Activities related to other wooded lands

VI. Harvested wood

- (1) Use of wood as substitutes for energy intensive materials and fossil fuel
- (2) Utilization of wood products and increased wood product lifetimes

VII. Other human-induced activities

- (1) Agrarian and pastoral practices
- (2) Land-clearing for agriculture
- (3) Other land-use changes

3. General Issues

It should be noted the following discussion is not to present the position which Japan supports, but to present suggestions for further discussion.

- General method of estimating CO₂ removals/emissions

First, areas where relevant activities are to be taken should be specified. Second, the baseline should be established through estimating changes in carbon stocks assuming that no relevant activities are taken. Then the amount of CO₂ removals/emissions brought about by the relevant activities should be estimated through the comparison between the actual emissions and baseline figures.

- It remains unclear how to evaluate the baseline carbon stocks that are necessary to account for the changes brought about by human-induced activities in carbon stocks. This is

especially true when evaluating the effects of activities that do not cause CO₂ removals but prevent CO₂ emissions.

Only the effects of changes in carbon stocks resulting from human-induced activities should be evaluated as emissions or removals. In order to calculate emissions/removals, it is necessary in some cases to set the baseline against which the actual figures would be compared.

Nevertheless, to set the baseline entails some problems. When evaluating the effects of activities such as fire prevention that do not cause CO₂ removal but prevent CO₂ emission, this issue is significant.

In addition, there is the argument of whether certain activities would be conducted in the event the Protocol/Convention did not exist.

- There are not any incentives for reporting activities that cause CO₂ emission.

There are incentives for reporting activities that cause CO₂ removal because they can be used to meet commitments. On the other hand, there are no incentives for reporting activities that cause CO₂ emission. Consequently, efforts to monitor activities that cause CO₂ emissions may not be made in many countries. This will have adverse effects on the attainment of the ultimate objective of the Convention.

- It is necessary to establish an evaluation mechanism that takes into account uncertainties, such as capping and discounting.

It is important not to overestimate CO₂ removal by sinks in light of large uncertainties associated with sinks. Because the uncertainties of activities under Article 3.4 are considered larger than those of the activities in the other sectors related to CO₂ emission, this issue takes on significant importance.

Uncertainties should be taken into account during the evaluation process. Capping and discounting mechanisms could be considered in this respect.

It is very important to discuss these issues in the IPCC Special Report.

- It is necessary to clarify the relationship and to maintain consistency between the FCCC, the Convention on Bio-diversity Conservation and the IFF process.

4. Evaluation of Activities to be considered

I. Afforestation, reforestation and deforestation excluded from the sink activities by Article 3.3

The definitions of the terms "afforestation, reforestation and deforestation" should be the same as those in Article 3.3.

The last sentence of Article 3.4 states "A party may choose to apply such a decision on these additional human-induced activities for its first commitment period, provided that these activities have taken place since 1990." Activities which have taken place before 1990 could be taken into account for the second and subsequent commitment periods. In this way afforestation, reforestation and deforestation excluded from the sink activities by Article 3.3 could be considered as additional human-induced activities under Article 3.4 for the second and subsequent commitment periods.

[Evaluation of this activity in the light of basic perspectives]

The evaluation of afforestation, reforestation and deforestation in this section is the same as those in the case of Article 3.3.

II. Forestry management practices

(1) Silvicultural practices

The following activities should be considered as silvicultural practices.

Activities which contribute to the health of forests, such as release operations, improvement cutting, pruning, thinning, salvage cutting and fertilization. In addition, selective cutting of overmatured trees with decreased CO₂ removal capacity should also be considered in this context, since it enhances regeneration of forest and contributes to CO₂ removal.

The distinction between some of these activities and deforestation depends on the definitions for the terms "reforestation and deforestation" under Article 3.3.

[Evaluation of this activity in the light of basic perspectives]

- Does it contribute not only to the short term goal but also to the achievement of the ultimate objective of the Convention?

Thinning itself causes CO₂ emissions in the short term. However silvicultural practices are considered to contribute to the achievement of the ultimate objective of the Convention, because they will enhance the health of the forest in the long term. Consideration should be given to this important point during the establishment of the evaluation methods.

- Is consistency maintained among activities with regard to the estimation of the amount of changes in carbon stocks?

Thinning is an important activity to maintain the health of the forest. However, it is possible that there might be inconsistency in the evaluation of carbon stock change, depending on how the evaluation period is determined.

- Are these human-induced activities?

Silvicultural practices are definitely human-induced activities. However, estimating changes in carbon stocks after certain silvicultural practices are conducted may include the natural growth of forests.

- Does it prevent the introduction of large uncertainties?

There are two uncertainties associated with these activities. The first is the uncertainty in estimating their effects and in setting the baseline. The second is the uncertainty associated with the actual measurement of the changes in carbon stocks.

- Does it keep high levels of transparency in reporting and verifiability?

With regard to the above-mentioned uncertainties, a problem would remain concerning transparency in reporting and verifiability.

- Does it respect the implications of achieving the quantified emission limitation for each nation?

Due attention should be paid to large differences in the forests and in the silvicultural practices among countries.

- Does it prevent generating disincentives for sustainable management of the natural environment?

Silvicultural practices may generate disincentives for sustainable management of the natural environment for the sake of acquiring CO₂ reduction credits. On the other hand, secondary forests which were traditionally managed in connection with village life in order to collect firewood for example, but are poorly managed today, need to apply silvicultural activities.

(2) Changes in rotation periods

This activity can be regarded both as a source and sink because the average amount of carbon stock varies with rotation periods in forestry practices. The longer the rotation periods of forests are, the larger the carbon reservoir is. On the other hand, the shorter the rotation periods of forests are, the higher the rate of carbon sequestration is.

[Evaluation of this activity in the light of basic perspectives]

- Does it contribute not only to the short term goal but also to the achievement of the ultimate objective of the Convention?

It is necessary to be aware that if an option of making rotation periods longer is taken, solely for increasing the carbon stocks of forests, it could lead to a decline in the lumber supply. The decline of lumber supply could have a negative impact to mitigating climate change in the long run through the possible use of more energy intensive materials and fossil fuels to substitute for wood products.

- Is consistency maintained among activities with regard to the estimation of the amount of changes in carbon stocks?

Inclusion of changes in rotation periods in the additional human-induced activities may not create any bias in evaluating removals/emissions of CO₂.

- Are these human-induced activities?

Adoption of longer/shorter term rotation periods are definitely human-induced activities.

- Does it prevent the introduction of large uncertainties?

There may be an issue of uncertainty associated with actual measurement of the changes in carbon stocks.

- Does it keep high levels of transparency in reporting and verifiability?

A high level of transparency in reporting and verifiability may be kept by using the forest statistics published by governmental agencies in each country.

- Does it respect the implications of achieving the quantified emission limitation for each nation?

Due attention should be paid to large differences in forests and forestry practices among countries

- Does it prevent generating disincentives for sustainable management of the natural environment?

This activity does not generate disincentives for sustainable management of the natural environment.

(3) Low impact harvesting practices

These activities mean harvesting practices which can avoid unnecessary felling of trees or soil disturbance in the logging process. For example, selective cutting with properly arranged skidding trucks may be included in these activities. These activities could reduce CO₂ emissions.

[Evaluation of this activity in the light of basic perspectives]

- Does it contribute not only to the short term goal but also to the achievement of the ultimate objective of the Convention?

Low impact harvesting practices may provide incentives to prevent the decrease of the carbon stocks in forests and CO₂ emissions to the atmosphere. Therefore, it contributes to the achievement of the ultimate objective of the Convention.

- Is consistency maintained among activities with regard to the estimation of the amount of changes in carbon stocks?

Inclusion of low impact harvesting practices in the additional human-induced activities may not create any bias in evaluating removals/emissions of CO₂.

- Are these human-induced activities?

Low impact harvesting practices are considered as human-induced activities.

- Does it prevent the introduction of large uncertainties?

There may be uncertainties in terms of 1) criteria for these activities, 2) coverage, 3) preconditions when setting the baseline, and 4) measurement of changes in carbon stock

- Does it keep high level of transparency in reporting and verifiability?

In relation to the above-mentioned uncertainties, problems would remain concerning transparency in reporting and verifiability.

- Does it respect the implications of achieving the quantified emission limitation for each nation?

Due attention should be paid to large differences in forests and forestry practices among countries, which may cause uncertainty in the setting of the baseline.

- Does it prevent generating disincentives for sustainable management of the natural environment?

These activities do not generate disincentives for sustainable management of the natural environment

III. Forest degradation and countermeasures

(1) Forest fire / forest fire control

There are many levels of anthropogenicity among the activities related to forest fires from natural fire to arson. Forest fires with high levels of human involvement should be treated in the same way as deforestation, while natural forest fires should not be regarded as emissions. As for forest fires with low levels of human involvement, the effects of forest fire controls such as fire fighting and fire prevention activities should be considered. Forest fire control reduces CO₂ emissions.

In the case of forest fires with high levels of human involvement, the decrease of carbon stocks should be calculated as human induced emissions.

In the case of natural forest fires, one evaluation method is as follows:

(i) Identify the areas which were burned.

(ii) Estimate the areas which could have been burned if no fire prevention activities had been taken.

(iii) Calculate the difference between the actual affected areas (see above 1) and the presumably affected areas (see 2 above).

(iv) Estimate the amount of carbon stock which was saved due to fire prevention activities based on the areas calculated above.

[Evaluation of the activity in the light of basic perspectives]

- Does it contribute not only to the short term goal but also to the achievement of the ultimate objective of the Convention?

Forest fire control may provide incentives to prevent the decrease of carbon stocks in forests and CO₂ emissions to the atmosphere. Therefore, it is considered to contribute towards the achievement of the ultimate objective of the Convention.

- Is consistency maintained among activities with regard to the estimation of the amount of changes in carbon stocks?

Inclusion of forest fire with high level of human involvement and forest fire control activities in the additional human-induced activities may not create any bias in evaluating removals/emissions of CO₂.

- Are these human-induced activities?

It is rather difficult to distinguish human-induced forest fires from natural forest fires in a practical sense.

- Does it prevent the introduction of large uncertainties?

There are three uncertainties associated with this activity; 1) the uncertainty in distinguishing human-induced forest fires from natural forest fires; 2) the uncertainty in estimating their effects and in setting the baseline; and 3) the uncertainty associated with the actual measurement of the changes in carbon stocks.

- Does it keep high levels of transparency in reporting and verifiability?

With regard to the above-mentioned uncertainties, problems would remain concerning transparency in reporting and verifiability.

- Does it respect the implications of achieving the quantified emission limitation for each nation?

Due attention should be paid to large differences in the characteristics of forests and forest fires among countries.

- Does it prevent generating disincentives for sustainable management of the natural environment?

Forest fire control has a possibility to prevent the natural regeneration of some tree species.

(2) Forest degradation caused by pests / pest control

The focus of evaluation in this category should be on pest control measures which include the applications of pesticides. This is so because unlike forest fires, the damage caused by pest is not considered human-induced, and is always considered natural. Pest control reduces CO₂ emissions.

[Evaluation of the activity in the light of basic perspectives]

- Does it contribute not only to the short term goal but also to the achievement of the ultimate objective of the Convention?

Pest control could provide incentives to prevent the decrease of carbon stocks in forests and CO₂ emissions to the atmosphere. Therefore, it contributes towards the achievement of the ultimate objective of the Convention.

- Is consistency maintained among activities with regard to the estimation of the amount of changes in carbon stocks?

Inclusion of pest control in the additional human induced activities may not create any bias in evaluating removals/emissions of CO₂.

- Are these human-induced activities?

Pest control activities are obviously considered to be human-induced activities.

- Does it prevent the introduction of large uncertainties?

There are two uncertainties associated with this activity. The first is the uncertainty in estimating their effect of degradation and in setting the baseline. The second is the uncertainty associated with the actual measurement of the changes in carbon stocks.

- Does it keep high levels of transparency in reporting and verifiability?

With regard to the above-mentioned uncertainties, a problem would remain concerning transparency in reporting and verifiability.

- Does it respect the implications of achieving the quantified emission limitation for each nation?

Due attention should be paid to the implications of certain methods of setting the baseline.

- Does it prevent generating disincentives for sustainable management of the natural environment?

If pesticides are not used in an appropriate manner, pest controls may have adverse effects upon the natural environment.

(3) Forest degradation caused by acid precipitation / countermeasures to acid precipitation

It is difficult to judge whether forest degradation is caused by acid precipitation or not. Even if forest degradation is regarded as the effect of acid precipitation, there still remains the possibility that the acid precipitation originated from other countries.

[Evaluation of this activity in the light of basic perspectives]

- Does it contribute not only to the short term goal but also to the achievement of the ultimate objective of the Convention?

Countermeasures to acid precipitation may provide incentives to prevent the decrease of carbon stocks in forests and CO₂ emissions to the atmosphere. Therefore, it would contribute to the achievement of the ultimate objective of the Convention.

- Is consistency maintained among activities with regard to the estimation of the amount of changes in carbon stocks?

Inclusion of forest degradation caused by acid precipitation and countermeasures to acid precipitation in the additional human induced activities may not create any bias in evaluating removals/emissions of CO₂.

- Are these human-induced activities?

Acid precipitation is a human-induced phenomenon, so this activity can be regarded as a human-induced activity.

- Does it prevent the introduction of large uncertainties?

There are three uncertainties associated with these activities; 1) the uncertainty in distinguishing forest degradation caused by acid precipitation; 2) the uncertainties in estimating their effects and in setting the baseline; and 3) the uncertainty associated with the actual measurement of the changes in of carbon stocks.

- Does it keep high levels of transparency in reporting and verifiability?

With regard to the above-mentioned uncertainties, a problem would remain concerning transparency in reporting and verifiability.

- Does it respect the implications of achieving the quantified emission limitation for each nation?

Acid precipitation which causes forest degradation may have originated from other countries. Due attention should be paid to the inappropriateness of attributing all CO₂ emissions brought about from forest degradation due to acid rain to the country where it is observed.

- Does it prevent generating disincentives for sustainable management of the natural environment?

Forest degradation caused by acid precipitation may prevent disincentives for sustainable management of the natural environment.

(4) Activities which cause soil erosion leading to forest depletion / countermeasures to soil erosion

This category involves the activities that will cause soil erosion of forests and the countermeasures to soil erosion. Countermeasures to soil erosion reduce CO₂ emissions.

[Evaluation of this activity in the light of basic perspectives]

- Does it contribute not only to the short term goal but also to the achievement of the ultimate objective of the Convention?

Countermeasures to soil erosion provide incentives to prevent the decrease of the carbon stocks in forest and CO₂ emissions to atmosphere. Therefore, countermeasures to soil erosion are considered to contribute towards the achievement of the ultimate objective of the Convention.

- Is consistency maintained among activities with regard to the estimation of the amount of changes in carbon stocks?

Inclusion of activities which cause soil erosion leading to forest depletion and countermeasures to soil erosion in the additional human induced activities may not create any bias in evaluating removals/emissions of CO₂.

- Are these human-induced activities?

Countermeasures should be considered as human-induced activities.

- Does it prevent the introduction of large uncertainties?

There are three uncertainties associated with these activities; 1) the uncertainty in the vague definition of these activities; 2) the uncertainty in estimating their effects and in setting the baseline; and 3) the uncertainty associated with the actual measurement of the changes in carbon stocks.

- Does it keep high levels of transparency in reporting and verifiability?

With regard to the above-mentioned uncertainties, a problem would remain concerning transparency in reporting and verifiability.

- Does it respect the implications of achieving the quantified emission limitation for each nation?

Due attention should be paid to different implications of the definitions of these activities and in setting the baseline.

- Does it prevent generating disincentives for sustainable management of the natural environment?

Countermeasures to soil erosion would not create disincentives for sustainable management of natural environment.

IV. Conservation / destruction of natural ecosystems

(1) Forest conservation

Forest conservation refers to legal and/or physical forest conservation by designating the primary forests and nature conservation areas as reserves.

[Evaluation of the activity in the light of basic perspectives]

- Does it contribute not only to the short term goal but also to the achievement of the ultimate objective of the Convention?

Forest conservation could provide incentives to prevent the decrease of the carbon stocks and CO₂ emissions to the atmosphere. Therefore, this activity is considered to contribute towards the achievement of the ultimate objective of the Convention.

- Is consistency maintained among activities with regard to the estimation of the amount of changes in carbon stocks?

Inclusion of forest conservation in the additional human induced activities may not create any bias in evaluating removals/emissions of CO₂.

- Are these human-induced activities?

These are considered as human-induced activities.

- Does it prevent the introduction of large uncertainties?

There are three uncertainties associated with these activities; 1) the uncertainty in the vague definition of these activities; 2) the uncertainty in estimating their effects and in setting the baseline; and 3) the uncertainty associated with the actual measurement of the changes in carbon stocks.

- Does it keep high levels of transparency in reporting and verifiability?

With regard to the above-mentioned uncertainties, a problem would remain concerning transparency in reporting and verifiability.

- Does it respect the implications of achieving the quantified emission limitation for each nation?

Due attention should be paid to different implications of the definition of these activities and setting the baseline.

- Does it prevent generating disincentives for sustainable management of the natural environment?

Forest conservation measures do not provide disincentives for sustainable management of the natural environment.

(2) Conservation / destruction of natural ecosystems other than forests

The conservation of natural ecosystems refers to legal and/or physical protection by designating nature conservation areas as reserves and thus control development of these areas.

The destruction of natural ecosystems other than forest is, for example, to exploit natural ecosystems holding large carbon stocks for urban use.

These activities are associated with land use changes. The section on "Other land use changes" should also be referred to.

V. Activities related to other wooded lands

The activities shown below can be taken into account.

- 1) establishment of other wooded lands
- 2) depletion of other wooded lands
- 3) conservation of other wooded lands
- 4) management of other wooded lands

Here, other wooded lands are defined as the green coverage other than forests which contain woody plants. Other wooded lands may include, for example, urban and other parks, wooded lands alongside a river, roadside trees, tree gardens agroforestry, fruit orchards, and tea plantations.

In the case of the establishment of other wooded lands, one method of estimation would be to apply similar methods to that used for afforestation or reforestation under Article 3.3. The depletion of other wooded lands could be evaluated by similar methods to that used for deforestation under Article 3.3. The conservation of other wooded lands could be evaluated by similar methods to that used for forest conservation mentioned previously. The management of other wooded lands could be evaluated by similar methods to that used for silvicultural practices mentioned previously.

[Evaluation of this activity in the light of basic perspectives]

- Does it contribute not only to the short term goal but also to the achievement of the ultimate objective of the Convention?

Activities related to other wooded lands could provide incentives to prevent the decrease of the carbon stocks and CO₂ emissions to the atmosphere. Therefore, they would contribute to the achievement of the ultimate objective of the Convention.

- Is consistency maintained among activities with regard to the estimation of the amount of changes in carbon stocks?

It is impossible that the inclusion of these activities could create loopholes in the same manner as with Article 3.3. It is necessary to introduce the same mechanism as that for Article 3.3 to prevent loopholes.

- Are these human-induced activities?

Activities shown above are considered as human-induced activities.

- Does it prevent the introduction of large uncertainties?

As for the establishment and depletion of other wooded lands, uncertainties are not considered to be significant.

As for conservation, there are three uncertainties similar to those in forest conservation; 1) the uncertainty in the definition of human-inducedness of conservation; 2) the uncertainty in estimating their effects and in setting the baseline; and 3) the uncertainty associated with actual measurement of the changes in carbon stocks.

As for management, there are two uncertainties like those in silvicultural practices. One is the uncertainty in estimating their effects and in setting the baseline. The second is the uncertainty associated with the actual measurement of the changes in carbon stocks.

- Does it keep high levels of transparency in reporting and verifiability?

As for the establishment and depletion, high levels of transparency in reporting and verifiability may be expected because the wooded lands in question are often located in accessible areas, thus considered easy to be observed and monitored.

As for conservation and management, there may remain some issues relating to uncertainties.

- Does it respect the implications of achieving the quantified emission limitation for each nation?

With regard to the above-mentioned uncertainties, a problem would remain concerning transparency in reporting and verifiability.

- Does it prevent generating disincentives for sustainable management of the natural environment?

Some of the activities related to other wooded lands may generate disincentives for sustainable management of the natural environment. However, this could be countered by strengthening appropriate management of nature conservation areas.

VI. Harvested Wood

There are 3 factors to be taken into consideration when discussing the relation between the relationship between the mitigation of climate change and wood use. They are :

- A) Wood materials as carbon stocks,
- B) Substitute for energy intensive materials,
- C) Substitute for fossil fuels as a biomass energy

(1) Use of wood as substitutes for energy intensive materials and fossil fuel

According to the IPCC Second Assessment Report (SAR 24.3.3), substitution management (i.e. factors B and C above), which views forests as renewable resources, has the

greatest mitigation potential in the long term. Woody biomass used as a renewable energy is considered to be the most significant (SAR19.2.5).

This activity contributes to the reduction of GHG emissions by reducing fossil fuel consumption.

(2) Utilization of wood products and increased wood product lifetimes

Carbon stock in wood products can be considered a type of sink because it prevents the immediate emission of CO₂ to the atmosphere.

Increasing wood product lifetimes can also be considered as a type of sink because it corresponds to reducing woody waste and therefore reducing carbon emission to the atmosphere. On the other hand, shortening wood product lifetimes may be considered as a source. Both increasing and shortening of wood product lifetimes should be taken into account. Recycling of wood products are included in these activities.

Wood products are presently under consideration at IPCC in terms of the application of three options (i.e. atmospheric flow approach, stock-change approach and production approach). The basic perspectives of this submission should be considered when these three options are examined in the IPCC Special Report on LUCF.

VII. Other human-induced activities

(1) Agrarian and pastoral practices

Activities related to agriculture and stock farming can lead to an increase, decrease, or no change in carbon levels in soil. In this category, the following activities can be considered

1) Activities which keep the soil environment good and increase soil carbon by various agricultural methods: manuring, rotation of crops, leaving the harvest residue on the soil surface, etc.

2) Acid soil improvement: liming

3) Activities for prevention of soil erosion: fallowing, mulching, etc.

[Evaluation of this activity in the light of basic perspectives]

- Does it contribute not only to the short term goal but also to the achievement of the ultimate objective of the Convention?

Inclusions of these activities will more properly reflect the actual conditions of emissions/removals of CO₂. Therefore, the inclusion of these activities does contribute to the achievement of the ultimate objective of the Convention.

- Is consistency maintained among activities with regard to the estimation of the amount of changes in carbon stocks?

Inclusion of other human-induced activities may not create any bias in evaluating removals/emissions of CO₂

- Are these human-induced activities?

These are clearly human-induced activities.

- Does it prevent the introduction of large uncertainties?

In these activities, there is a problem of uncertainties with respect to the following.

- 1) Ambiguity of the definitions (the range of activities).
- 2) Uncertainties in the case of considering default values, such as discharge coefficients.
- 3) Uncertainties in the measurement of actual carbon stock changes.

- Does it keep high levels of transparency in reporting and verifiability?

With regard to the above-mentioned uncertainties, a problem would remain concerning transparency in reporting and verifiability.

- Does it respect the implications of achieving the quantified emission limitation for each nation?

Due attention should be paid to the uncertainties associated with the methods of evaluation and the difference in the agricultural practices in each country.

- Does it prevent generating disincentives for sustainable management of the natural environment?

Some evaluation methods may increase incentives for increasing agricultural areas, which could have an influence upon sustainable management of natural environment.

(2) Land-clearing for agriculture

The activities of this category include the removal of vegetation for agricultural purposes. (Land-clearing by means of deforestation is not included in this category.)

First, not evaluating the CO₂ emissions of land-clearing is appropriate, since the biomass reproduces in a short period. On the other hand, land-clearing could result in the disappearance of soil carbon over a long period of time. When evaluating soil carbon emissions, notice should be made of the kind of plants which existed before, climate, soil type, method of land-clearing, and subsequent management method.

[Evaluation of this activity in the light of basic perspectives]

- Does it contribute not only to the short term goal but also to the achievement of the ultimate objective of the Convention?

Inclusions of these activities will more properly reflect the actual conditions of the emissions or removals of CO₂. Therefore, inclusion of these activities does contribute to the achievement of the ultimate objective of the Convention.

- Is consistency maintained among activities with regard to the estimation of the amount of changes in carbon stocks?

Inclusion of land-clearing for agricultural in the additional human-induced activities may not create any bias in evaluating removals/emissions of CO₂.

- Are these human-induced activities?

Land-clearing is clearly a human-induced activity.

- Does it prevent the introduction of large uncertainties?

In these activities, there is a problem of uncertainties with respect to the following.

- 1) Ambiguity of the definitions (the range of activity).
- 2) Uncertainties in the case of considering default values, such as discharge coefficients.
- 3) Uncertainties in the measurement of actual carbon stock changes.

- Does it keep high levels of transparency in reporting and verifiability?

With regard to the above-mentioned uncertainties, a problem would remain concerning transparency in reporting and verifiability.

- Does it respect the implications of achieving the quantified emission limitation for each nation?

Due attention should be paid to the uncertainties associated with the methods of evaluation and the difference in the agricultural practices in each country.

- Does it prevent generating of disincentives for sustainable management of the natural environment?

Inclusion of land clearing for agriculture does not provide disincentives for sustainable management of the natural environment.

(3) Other land-use changes

All land-use changes should be taken into account. As the average amount of soil carbon per unit area in the long term varies with its land-use type, any land-use changes may cause substantial changes in carbon stocks corresponding to a CO₂ source or sink.

Some countries have added up the amount of emissions accompanied by the cultivation of swamps or a grasslands in their calculation of the amount of emissions for the year 1990.

Many projects in this category are planned in many areas and extensive emission of greenhouse gases will be expected, thus it is important to evaluate the appropriateness to include these activities as the additional human-induced activities.

[Evaluation of this activity in the light of basic perspectives]

- Does it contribute not only to the short term goal but also to the achievement of the ultimate objective of the Convention?

Inclusions of these activities will more properly reflect the actual conditions of the emissions or removals of CO₂. Therefore, inclusion of these activities does contribute to the achievement of the ultimate objective of the Convention.

- Is consistency maintained among activities with regard to the estimation of the amount of changes in carbon stocks?

Inclusion of these activities in the additional human induced activities may not create any bias in evaluating removals/emissions of CO₂.

- Are these human-induced activities?

Whether a particular activity is human-induced or not depends on the cause behind the land use change. If the cause of swamp development is the diversion to farmland or a city area, this is clearly a human-induced activity.

- Does it prevent the introduction of large uncertainties?

In these activities, there are uncertainties with respect to the following.

- 1) Ambiguity of the definitions (the range of activities).
- 2) Uncertainties in the case of considering a default value, such as discharge coefficients.
- 3) Uncertainties accompanied by the determination of the amount of carbon stock of every land-use form.

- Does it keep high levels of transparency in reporting and verifiability?

With regard to the above-mentioned uncertainties, a problem would remain concerning transparency in reporting and verifiability.

- Does it respect the implications of achieving the quantified emission limitation for each nation?

Due attention should be paid to different implications to various countries depending upon which activities are taken up.

- Does it prevent generating disincentives for sustainable management of the natural environment?

For example, the development of peat lands may cause enormous CO₂ emissions. So, evaluating this activity may generate incentives to preserve these lands as carbon stocks or sinks.

On the other hand, it may also generate incentives to change the land-use type to a more carbon-rich one, which may lead to the destruction of original eco-systems or natural environments.