28 September 2005

ENGLISH ONLY

UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE
Twenty-third session
Montreal, 28 November to 6 December 2005

Item 5 (a) of the provisional agenda
Methodological issues under the Convention
Harvested wood products

Data and information on changes in carbon stocks and emissions of greenhouse gases from harvested wood products and experiences with the use of relevant guidelines and guidance of the Intergovernmental Panel on Climate Change

Submissions from Parties

Addendum

1. In addition to the four submissions contained in document FCCC/SBSTA/2005/MISC.9, one further submission has been received (on 23 September 2005).

2. In accordance with the procedure for miscellaneous documents, this submission is reproduced* in the language in which it was received and without formal editing.

* This submission has been electronically imported in order to make it available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the text as submitted.

SUBMISSION FROM AUSTRALIA

Land use, Land-use change and forestry: Harvested Wood Products

At its 21st session, the SBSTA decided to continue, at its 23rd session, its consideration of issues related to harvested wood products (HWP). To assist in this consideration, the SBSTA invited Parties to submit information and experiences relating to reporting of emissions from harvested wood products.

Australia welcomes the opportunity to submit this information, and looks forward to a constructive discussion of HWP at SBSTA 23. Australia's submission is in two parts:

1. A perspective on the treatment of HWP in national inventories under the UNFCCC; and

2. Australia's method on HWP.

1. A perspective on the treatment of HWP in national inventories under the UNFCCC

Australia considers it is now time to bring HWP reporting into line with the rest of inventory practice by including appropriate methodologies in the 2006 IPCC guidelines. To do otherwise would establish a precedent that reporting of emissions need not be consistent with the UNFCCC – a situation Australia would be reluctant to accept.

The distinction between inventory reporting under the UNFCCC, and allocation of emissions obligations under a future policy framework

It is important to distinguish between the concepts of HWP reporting in national inventories under the UNFCCC, and possible approaches to allocating HWP emissions obligations under a future policy framework.

Australia is concerned that Appendix 3a.1 to the 2003 *IPCC Good Practice Guidance for Land Use, Land-use Change and Forestry* confuses these concepts. By suggesting approaches to allocation of emissions obligations, Appendix 3a.1 clearly strays into a political discussion. This should not be perpetuated in the proposed 2006 IPCC National Greenhouse Gas Inventory Guidelines. The 2006 Guidelines should guide Parties to report in a manner that is consistent with the principles and requirements of the UNFCCC.

Inventory reporting under the UNFCCC provides information on which policy decisions can be based. Merely reporting this information has no economic consequences. Economic consequences only occur as a result of political decisions about allocation of emissions obligations to Parties, and decisions by governments about national policy responses.

Australia recognises Parties' concerns about the possible trade or sectoral consequences of an as yet undefined future agreement on allocation of HWP emissions obligations. However, these concerns should not and need not compromise the elaboration of technically robust and objective reporting guidelines for UNFCCC inventories.

Policy issues that need to be considered by the SBSTA in relation to inventory reporting include the handling of non-CO_2 gases in HWP reporting, and the start year for historical inputs into national HWP reservoirs. The release of methane from decaying HWP, including in landfill, means that there may not be a simple correlation between carbon stocks lost from HWP reservoirs and actual emissions. The start year for historical data on HWP is important because under some methodologies, emissions from HWP that entered into use in years prior to the start year for inventory purposes may be overlooked in the national inventory.

The basis of inventory reporting under the UNFCCC

Under the UNFCCC, Parties report emissions and removals that occur within their national boundaries, in the year in which they occur. With coal, for example, emissions that occur during the mining of coal are reported in the country in which the coal is mined and in the year in which it is mined, while emissions that occur when the coal is burned are reported in the country in which it is burned and in the year in which it is burned. Similarly, the producing country reports emissions from the production of emissions intensive goods, such as aluminium, even when the goods are exported.

This fundamental approach to reporting greenhouse gas emissions under the UNFCCC has arisen from the agreed text of the Convention. Article 4 (*Commitments*), paragraph 1, of the UNFCCC, requires that:

- "All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:

    (a) Develop, periodically update, publish and make available to the Conference of the Parties, in accordance with Article 12, national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the Conference of the Parties."

In Australia's view, this fundamental approach is sound. By periodically reporting anthropogenic emissions and removals on a national basis, Parties report all of those emissions and removals over which they have control, and none of those over which other Parties have control.

Several key terms used in Article 4.1(a), which are relevant to HWP, are defined in Article 1 of the UNFCCC. These are:

- Article 1. 4: "Emissions means the release of greenhouse gases and/or their precursors into the atmosphere over a specified area and period of time."

- Article 1.8: "'Sink means any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere."

- Article 1.9: "Source means any process or activity which releases a greenhouse gas, an aerosol or a precursor of a greenhouse gas into the atmosphere."

HWP in the context of the UNFCCC text

From the definitions agreed in Article 1 of the UNFCCC it is clear that:

- HWP cannot be a sink (Article 1.8), because, once the wood is dead (ie harvested), there cannot be any process, activity or mechanism by which it removes a greenhouse gas from the atmosphere

  - Any removals associated with wood production will already have been reported in association with the growing forest.

  - Although "removals" is not defined, under Article 4.1 the only removals reported in national inventories are removals by sinks (Article 4.1(a)), which clearly precludes reporting of "removals" by HWP, as is sometimes suggested.

- HWP are a potential source of emissions (Article 1.9), because the eventual decay or burning of HWP is a process or activity which releases a greenhouse gas into the atmosphere.

  - There is ample precedent for the treatment of transfers between countries of potential sources in UNFCCC inventories, eg imports and exports of coal and natural gas

There is one further definition in Article 1 of the UNFCCC which could be applied to HWP:

- Article 1.7: "Reservoir means a component or components of the climate system where a greenhouse gas or a precursor of a greenhouse gas is stored."

This submission refers to HWP as a carbon reservoir. Alternatively, the IPCC term "carbon pool" could have been used. This submission also refers to forests as a carbon reservoir, which is intended to incorporate the IPCC concept of the five forest carbon pools."

Inconsistency between the current treatment of HWP under the IPCC Guidelines and the requirements of the UNFCCC

Under the revised 1996 IPCC Guidelines, the default assumption is that all carbon removed in wood and other biomass from forests is oxidised in the year of removal. Parties that report under this assumption therefore report emissions from HWP as if all the carbon embodied in harvested wood had been emitted in the year of harvest and in the country of harvest. Exception from the default assumption is allowed for those Parties that demonstrate that storage of carbon in forest products is increasing.

Reporting of HWP emissions based on the default assumption clearly does not represent the actual pattern (place and time) of greenhouse gas emissions into the atmosphere and is inconsistent with the reporting requirements of the UNFCCC (Article 4.1). The extraction of wood from a forest does not necessarily lead to an emission in the year and country of harvest – the carbon may in fact be emitted years or decades later and in a different country. Furthermore, this approach offers no means to quantify the effectiveness of Parties' efforts to reduce emissions from HWP; or in other inventory reporting circumstances (eg waste management) can lead to double counting of emissions.

This inventory approach to HWP was an interim solution that reflected a technical reality of its day, which was that it was considered too complicated to track emissions from HWP over time. However, several Parties, including Australia, have already demonstrated that robust estimates of emissions from HWP can be made.

Calculating national emissions from HWP

Figure 1, below, illustrates the basic fluxes of emissions and removals, and transfers of carbon between reservoirs, relevant to reporting of HWP emissions under the UNFCCC. It conveys Australia's understanding of the relationship between emissions and removals from the LULUCF carbon reservoir

and emissions from HWP, and the effect of export and import of HWP across national boundaries on national inventory reporting.

Key to Figure 1

In Figure 1:

- The dashed line labeled 'National inventory boundary' represents the limits to each Party's reporting requirements: any emissions or removals occurring outside of this boundary (including emissions from HWP represented by the arrow EF) would not be reported in that Party's national inventory.

- The ovals labeled A, D and F represent the atmosphere.

- The rectangles B, C and E represent carbon reservoirs. (In Australia's view, once wood is removed from the physical location of the forest it is fundamentally separate from the forest reservoir.)

- The full black arrows represent fluxes of emissions and removals between carbon reservoirs and the atmosphere.

    - The black arrow AB represents net removals by the sink associated with the forest carbon reservoir (to simplify the diagram, this has been represented as a net figure rather than simultaneous emission and removal processes).

    - The black arrow CD represents emissions to the atmosphere from the HWP carbon reservoir within that country.

    - The black arrow EF represents emissions to the atmosphere from HWP carbon reservoirs in other countries.

- The dotted arrows represent transfers between different carbon reservoirs.

    - The dotted arrow BC represents transfers from the forest carbon reservoir to the HWP carbon reservoir in the same country.

    - The dotted arrows EC and CE represent transfers between HWP carbon reservoirs in different countries (ie imports and exports of HWP).

Emissions from and removals by the forest carbon reservoir

Net removals by the forest carbon reservoir can be calculated as

$$AB = \Delta B + BC$$

where ΔB represents the net change in carbon stocks in the five forest carbon pools (ie above ground biomass; below ground biomass; dead wood; litter; and soil organic matter).

This equation would give a positive result if net removals occurred or a negative figure if net emissions occurred. The addition of the dotted arrow BC is necessary to avoid the treatment of harvested biomass removed from the forest as an emission in the year of harvest.

Emissions from HWP

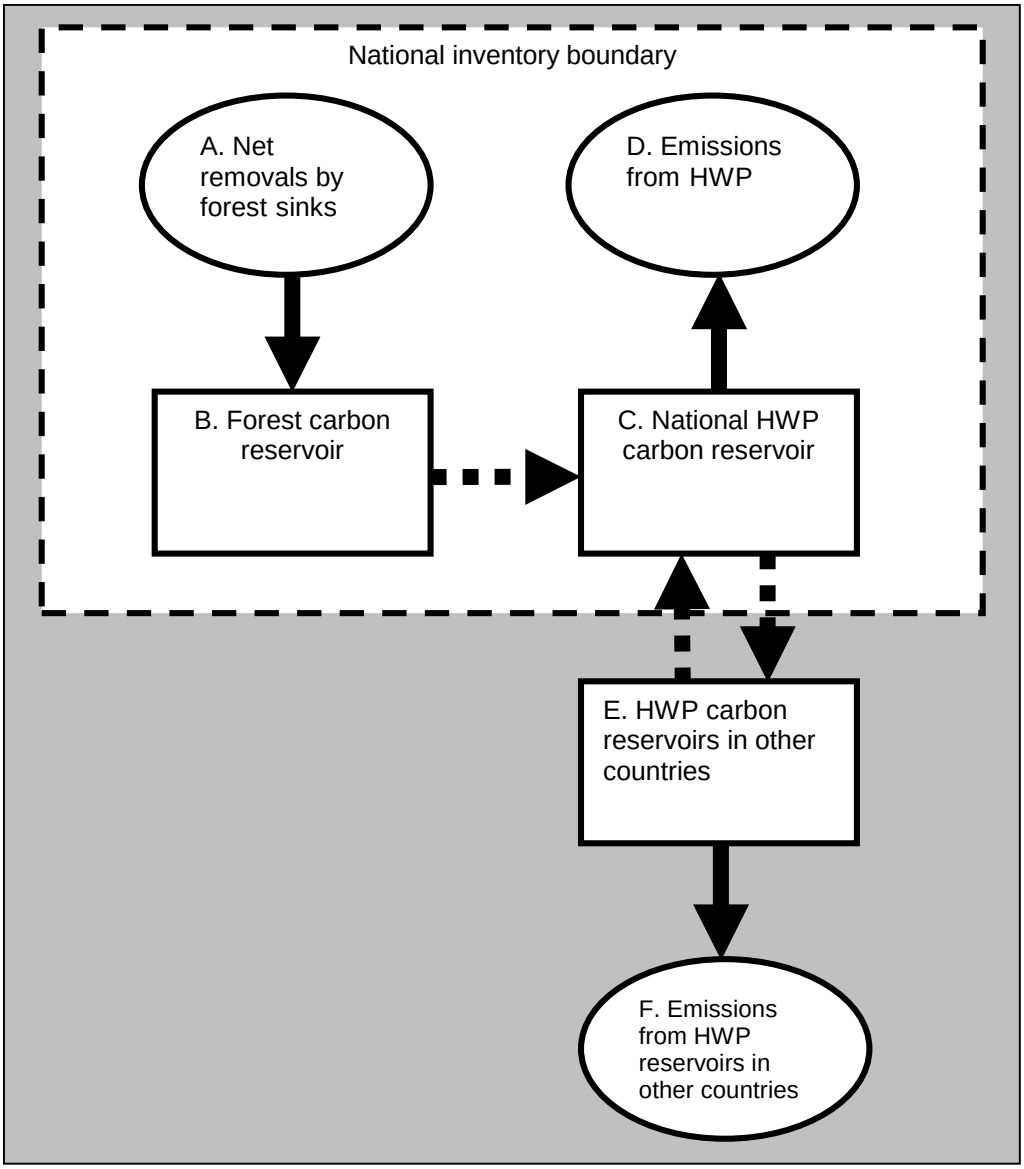
Emissions from HWP in the reporting country can be calculated as

$$CD = BC + EC - \Delta C - CE$$

where ΔC represents the net change in carbon stocks in the HWP carbon reservoir.

Logically, this equation can only result in a positive number for CD, as harvested wood cannot remove any further CO_2 from the atmosphere.

Figure 1: Flows of carbon emissions and removals to and from the atmosphere, and transfers between carbon reservoirs relevant to reporting of HWP emissions (effects of carbon emissions in the form of non-CO_2 gases is excluded for simplicity).



Relationship between HWP and emissions in the waste and energy sectors

Figure 2, below, shows the possible allocation of emissions from HWP to the different sectors within a national inventory. In Australia's view, it is logical to report emissions in the sector in which they occur. This would require a change in the way bioenergy emissions are reported (ie currently emissions from bioenergy are reported at the time and place of harvest rather than at the time and place of combustion).

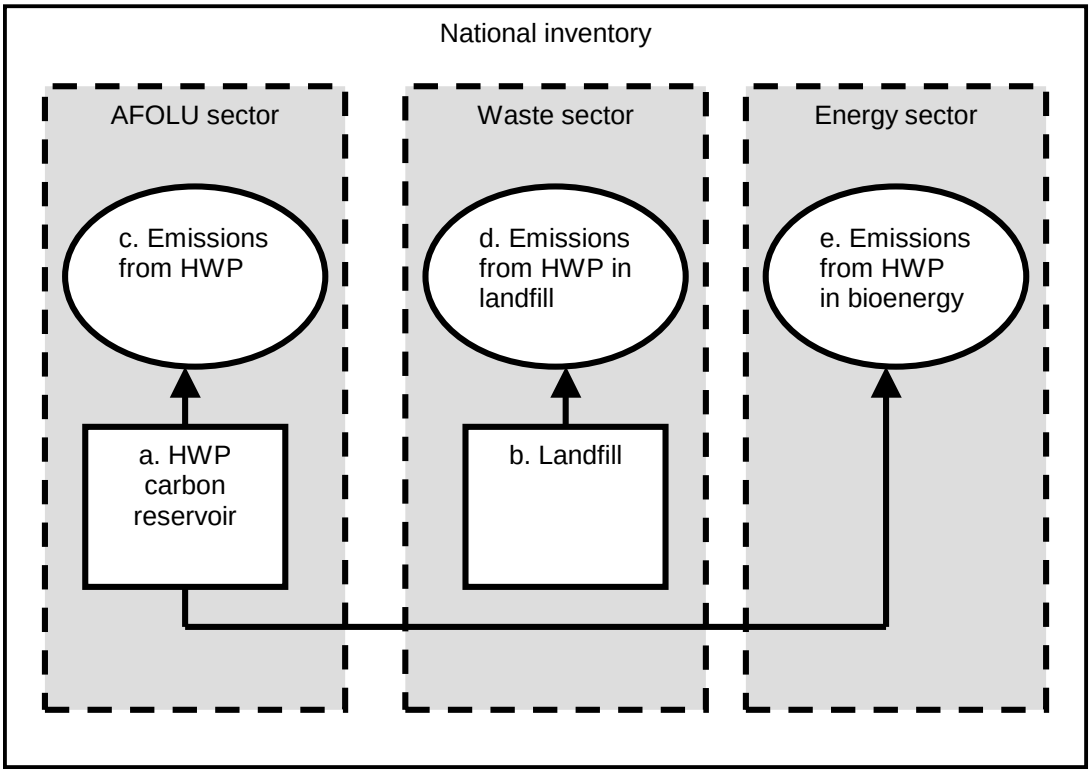
Key to Figure 2

In figure 2:

- The shaded rectangles represent different reporting sectors within the national inventory.
- The ovals labeled c, d and e represent the atmosphere.
- The rectangles a and b represent carbon reservoirs (HWP in landfill could be regarded either as part of the HWP reservoir or as part of a separate landfill reservoir).
- The dotted arrow ab represents transfers from HWP in-use to landfill.
- The full black arrows represent emissions from carbon reservoirs to the atmosphere.
    - The black arrow bd represents emissions from HWP stored in landfill.
    - The black arrow ae represents emissions from the burning of HWP for bioenergy.

The black arrow ac represents emissions from HWP in use (ie losses from the HWP reservoir not accounted for by emissions in the waste or energy sectors or by exports of HWP).

Figure 2: Possible allocation of carbon emissions from HWP to different sectors within a national inventory (effects of carbon emissions in the form of non-CO_2 gases is excluded for simplicity).



Australia's method on HWP

Australia's national wood products accounting model

Australia has developed a national wood products carbon accounting model beyond that currently used in inventory reporting. The model uses available statistics on log flows from the forests and estimates the carbon content of the various wood products processed (eg sawn timber, plywood, pulp and paper and woodchips) to determine carbon inputs to wood products. A national database of domestic wood production, including import and export quantities, has been maintained since 1944.

Estimates of the decay period of each class of wood product have been made and methods developed for estimating the pool of carbon in wood products. Import and export quantities are also considered in the model. The processes considered are those after removal from the forest, including storage and emissions effects of processing, service life storage, recycling, use for Bioenergy and storage in landfill.

Wood products that are in use are assigned to young, medium and old age pools. The loss of wood products from their service life is simulated as partial losses from each of the young, medium and old age pools. Material leaving the service life may either be used for Bioenergy, added to landfill, recycled or emitted to the atmosphere. Losses of carbon can also occur from the landfill pool.

Model outputs include: emissions assumed to occur at harvest; life cycle flow analysis based on Australian wood production no matter where they are at time of emissions; and life cycle flow analysis based in wood products in Australia no matter where they originated. Sensitivity analyses have been applied via Monte Carlo analyses to test the impacts of uncertainty in model inputs and parameters. Such analyses can also be used to point to priority areas where refinement can be best targeted to reduce uncertainty.

Priority areas for further research and development include: refining the lifespan of timber products, both long term products such as framing timber in houses and products with a shorter lifespan such as paper and packaging; researching the final disposal methods of wood products, some of which (eg landfills) may significantly extend the life of products before carbon release; further research on the rate and extent of decomposition of wood and paper in landfill; refining the methodology for determining the level of carbon stored in housing and rates of recycling of various product types.

- - - - -