New Zealand

A Submission to the Ad-Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP)

Land Use, Land Use Change and Forestry (LULUCF)

26 MAY 2009

Introduction

1. At its seventh session the AWG-KP encouraged Parties to share information, particularly data where available, before its eighth session (June 2009), in order to enhance understanding of the implications of the options and proposals for the treatment of LULUCF.

2. To facilitate this sharing of information, the AWG-KP invited Parties to submit relevant information to the secretariat on a voluntary and informal basis for publication on the UNFCCC website.

3. In this submission we provide the context for LULUCF in New Zealand so that others can gain a better understanding of New Zealand's national circumstances and the impacts of LULUCF rules on New Zealand's accounting under the Kyoto Protocol.

4. We have also provided some projections of the net-stock change in New Zealand's pre-1990 forests over successive commitment periods and on the basis of this, have analysed the impact of the different accounting rules on New Zealand's accounting position.

Context

5. A brief discussion of New Zealand's forest sector follows. This is to provide the context for the subsequent discussion on LULUCF accounting rules.

6. New Zealand has two main types of forest cover:

    a. Protected natural forests, consisting of indigenous species; and

    b. Planted production forest, consisting primarily of introduced species.

Protected natural (indigenous) forest

7. New Zealand retains 6.3 million hectares of natural indigenous forest cover, representing 23% of our land area. The vast majority of this is either protected as part of the Crown's conservation estate, which is not harvested or available for conversion, or privately held, which has limitations placed on harvest or conversion. Less than 1% of the volume of wood produced by New Zealand comes from privately held indigenous forests.

8. Our most recent evidence indicates that the natural indigenous forests of New Zealand are not a source of emissions and may be a slight sink, with a possible

sequestration of approximately 5 Mt per year (under 1 tonne per hectare). There is, however significant uncertainty within this figure, of the order of ±30%. These figures will be revised as New Zealand's carbon accounting system (LUCAS) re-measures the plot network over the next five years. For reporting under the Convention, and based on current information we report these forests as being in a steady state. This forest will not be considered further within this submission.

Planted production forests

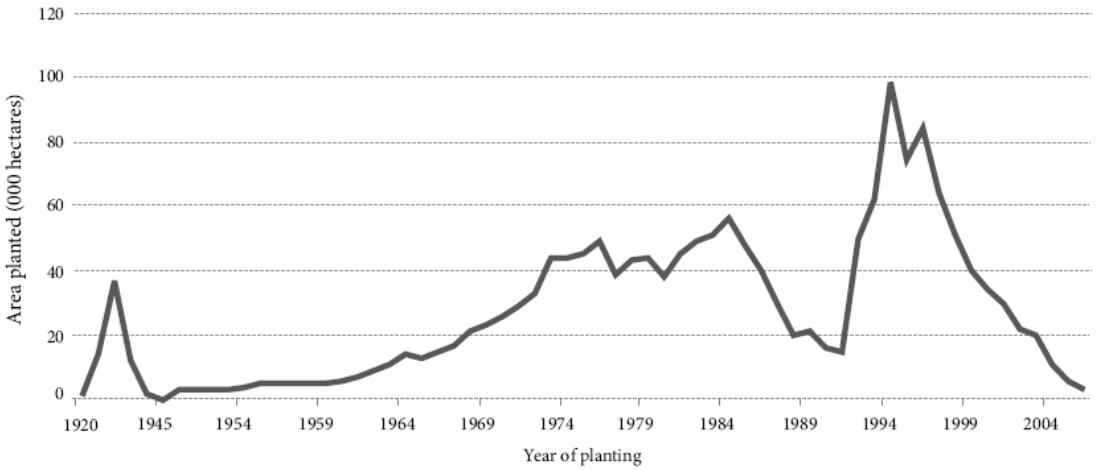
9. The widespread planting of forests for wood production began in the mid 1920s to ensure the maintenance of the timber supply. From the mid-1920s to and 1990 around 1.2 millions hectares of planted production forests were established, predominately on pastoral farmland. Since 1990 it is estimated a further 0.6 million hectares have been established, almost exclusively on pastoral land.

10. Today the total cover of planted production forests is 1.8 million hectares (7% of New Zealand's land area). 93% of the forests are privately owned with 65% of the total area controlled by large companies, Maori entities[1] or local government bodies. The remaining forests are managed by a wide variety of small companies, local government, partnerships, joint ventures and thousands of small-scale forest owners. *Pinus radiata* (radiata or Monterey Pine) dominates the planted production forests (89% by area), followed by Douglas-fir (6% by area).

Three planting booms

11. New Zealand has experienced three periods of significant afforestation. In the late 1920s to the 1940s exotic forests were established with a view to developing and utilising a plantation forest resource to substitute for indigenous timbers. A second planting boom occurred during the 1970s and 1980s, seeking to create export-oriented forest industries. A final planting boom occurred in the early 1990s in response to continued global demand for sustainably produced wood products. These periods of increased afforestation have created a large age class legacy that will continue to affect New Zealand's planted production forests well into the future.

[1] Maori are New Zealand's indigenous people. These entities hold land and assets on behalf of the Maori owners to promote and facilitate the use and administration of the land in the interests of the owners.



Afforestation/Reforestation of New Zealand's planted production forests

New Zealand forestry and its economic importance

12. About 70 percent of the harvested volume is exported; contributing about 10 percent of the total value of New Zealand's export trade. The forestry sector also directly contributed 3.2 percent to New Zealand's gross domestic product (GDP) for the year ended March 2007. Disrupting this trade would have significant impacts on New Zealand's economy.

Discussion of LULUCF rules

13. Two proposed rules changes that will have a material and immediate impact on New Zealand's accounting position are:

    a. the continuation of the Afforestation/Reforestation (A/R) Debit Credit rule; and

    b. the accounting framework for pre-1990 forest.

The A/R debit credit rule

14. Parties to the Kyoto Protocol receive credits for the increases in the carbon stock in trees planted after 1990, but also have to take responsibility for greenhouse gas emissions as these trees are subsequently removed via harvesting or deforestation.

15. Under the rules of the Kyoto Protocol, Parties are only credited for the amount of carbon that is removed by these additional forests since the start of the first commitment period (2008) and not for all the carbon that has accumulated in the forest since their establishment.

16. The Afforestation/Reforestation (A/R) Debit-Credit rule acts to limits liabilities that a Party faces as a result of harvesting activities in forests established since 1990. Without this rule, liabilities from these post-1990 forests could be greater than the amount of credits that are received for carbon stored in these forests.

    For New Zealand the embodied, non-credited carbon in its post-1989 forests is projected to be 164Mt.

Accounting framework for pre 1990 (Article 3.4) forests

17. The accounting treatment of pre-1990 (Article 3.4) forests is a key determinant of New Zealand's accounting position. There is currently a range of accounting approaches proposed for pre-1990 forest for the second commitment period. Options include:

    a. Gross-net with caps (assumed existing caps)

    b. gross-net;

    c. net-net ; and

    d. The Bar.

Cross-net with caps

18. This considers the change in carbon stock in the forests over the accounting period. However before the commitment period begins Parties, via a CMP decision, have a limit (cap) placed on the total removals that can be credited or emissions that can be debited. . It rewards all removals and creates a liability if there are net emissions up to this cap.

19. Gross-net with caps is the current approach to Forest Management accounting of pre-1990 forests.

Gross-net

20. This considers the change in carbon stock in the forests over the accounting period. It rewards all removals and creates a liability if there are net emissions.

Net-net

21. This considers the change in carbon stock in the forests over the accounting period compared to a base year or period. In New Zealand's case this is the sequestration occurring in 1990.

22. As part of the continued inventory improvement New Zealand has refined the estimates of our 1990 removals. The most recent estimate, published in our 2009 National Inventory Report is that our Net Sequestration in Forests in 1990 was 18,673Gg CO_2eqv.

The Bar

23. New Zealand considers the Bar should represent the best estimate of carbon stock change (net emissions and removals) in the pre-1990 forest still in existence at 31 December 2012 that can be expected to occur over the next (and possibly subsequent) commitment period(s) under business as usual management.

24. As this would reflect the harvesting of these forests as business as usual management, the bar would be set as an emission for some periods. The carbon stock would be restored in subsequent periods as sequestration occurs in newly planted trees, meaning that in future periods the bar could be a sequestration.

25. In the case of New Zealand we would expect that the net result of crediting and debiting would be close to zero across multiple periods, unless there was some significant management change.

Impact of different accounting rules on New Zealand's accounting

26. To illustrate the effect that different accounting approaches will have on New Zealand's accounting position we have provided the following analysis. Table 1 is a projection of the net-stock change in New Zealand's pre-1990 forests over successive commitment periods; Tables 2, 3 and 4 combine this projection with the different accounting approaches to assess the impact on New Zealand's accounting position. We also provide New Zealand's first commitment period AAUs as a useful comparison with which to measure the magnitude of the impacts.

Table 1: Projected net stock change in pre-1990 forests by Commitment Period (Mt CO_2)

Period	Projected change in carbon stock
2008-2012	-23.8[2]
2013-2017	-86.5
2018-2022	-6.5
2023-2028	68.0

Table 2: Impact of different accounting rules on New Zealand's accounting position over the period 2013 to 2017 arising from pre-1990 forests

Rule	Gross-net with caps (Mt) (assuming status quo continues)[3]	Gross net (Mt)	Net-Net (Mt)	Bar (Mt)
Projected change in carbon stock in pre-1990 forest	-86.5	-86.5[4]	-86.5	-86.5
Change to Assigned Amount due to shift to net-net	NA	NA	-93.4[5]	NA
Allowance for BAU carbon stock change under the bar	NA	NA	NA	-86.5[6]
Pre-1990 forest accounting	-3.67	-86.5	-179.9	0
New Zealand's AAUs in CP1 (for comparison)	309	309	309	309
Percent of CP1 AAUs	1%	28%	58%	0%

[2] Reduction in Carbon stock, therefore an emission under reporting rules.
[3] In the Appendix to 16CMP1 New Zealand's cap is 0.2 Mt of Carbon per year. This equates to the 3.67Mt of CO_2eqv
[4] Reduction in Carbon stock, therefore an emission under reporting rules.
[5] Reduction in AAUs
[6] An allowed reduction in the carbon stock of -86.5Mt

Table 3: Impact of different accounting rules on New Zealand's accounting position over the period 2018 to 2022 from pre-1990 forests

Rule	Gross-net with caps (Mt) (assuming status quo continues)	Gross net (Mt)	Net-Net (Mt)	Bar (Mt)
Projected change in carbon stock in pre-1990 forest	-6.5	-6.5	-6.5	-6.5
Change to Assigned Amount due to shift to net-net	NA	NA	-93.4	NA
Allowance for BAU carbon stock change under the bar	NA	NA	NA	-6.5
Pre-1990 forest accounting	-3.67	-6.5	-99.9	0
New Zealand's AAUs in CP1 (for comparison)	309	309	309	309
Percent of CP1 AAUs	1%	2%	32%	0%

Table 4: Impact of different accounting rules on New Zealand's accounting position over the period 2023 to 2028 from pre-1990 forests

Rule	Gross-net with caps (Mt) (assuming status quo continues)	Gross net (Mt)	Net-Net (Mt)	Bar (Mt)
Projected change in carbon stock in pre-1990 forest	68	68	68	68
Change to Assigned Amount due to shift to net-net	NA	NA	-93.4	NA
Allowance for BAU carbon stock change under the bar	NA	NA	NA	68
Pre-1990 forest accounting	3.67	68	-25.4	0
New Zealand's AAUs in CP1 (for comparison)	309	309	309	309
Percent of CP1 AAUs	1%	22%	8%	0%

27. In CP2 moving to net-net accounting would increase New Zealand's international obligations by 305.2Mt, with no corresponding benefit to the atmosphere. The Bar approach would enable New Zealand to account more appropriately for cyclical fluctuations in emissions and removals associated with harvesting and replanting.

Other Article 3.4 activities

28. New Zealand has little ability to make projections about other, non-forest, Article 3.4 Activities (grazing land management, cropland management and revegetation) within the current framework. This is due to two reasons:

a. Lack of information about the effect of activities and areas; and

b. Lack of information on historical, baseyear, emissions.

29. We discuss this more fully in the next section where we discussion Option Two – land based accounting.

Option two – land based accounting

30. As stated in our previous submission (contained in FCCC/KP/AWG/2009/MISC.11), New Zealand does not support land-based accounting in CP2 for a number of reasons, including:

    a. It would arbitrarily penalise Parties that were sequestering carbon in 1990/baseyear; and

    b. The information requirements are large, and often unobtainable.

31. New Zealand uses a Tier 1 approach for all land use that is not planted forest. Currently the land areas are calculated using a two existing land-cover maps of New Zealand. These land-cover databases were mapped are for 1997 and 2002. Data for all other years was extrapolated from the changes observed between 1997 and 2002.

32. The databases are a wall-to-wall mapping[7] of New Zealand, but they were not specifically developed for use in UNFCCC reporting. Currently they are the only national land-cover/land-use spatial databases available that provide recent information and that can be adapted for this purpose.

33. At the time of compiling this submission, New Zealand is working on producing land use maps for 1990 and 2008 based on satellite data which are more suitable for UNFCCC reporting. This work is being completed as part of the Land Use and Carbon Analysis System (LUCAS)

34. LUCAS is a programme of work to measure and monitor the ongoing changes to carbon stocks in New Zealand's forests (both natural and plantation), land undergoing conversion and changes in soil following land conversion.

35. LUCAS will be operational by early 2010, when the first greenhouse gas inventory report under the Kyoto Protocol is due. From 2008 to 2012, New Zealand will continue to add data to the LUCAS database to improve its carbon stock estimates. The final report for the first commitment period of the Kyoto Protocol will be submitted in April 2014.

36. Despite the increase in the availability of information on land use in 1990 it is unlikely that New Zealand will have sufficient data to calculate the actual soil carbon stock change in for all land uses. It is also clear that New Zealand cannot create data for a 1990 baseyear.

[7] Approach 3 as described in GPG-LULUCF