

## Data on Forest Management: Submission by New Zealand November 2009

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
	1990 emissions removals	Proposed reference Level	Forecast for CP1 (no cap)/yr	Forecast for 2013-2020/yr	Forecast based on 1990 (E=D-A)	Forecast based on reference level (F=D-B)	Forecast based on CP1 (G=D-C)
New Zealand	-19.18	17.05	-2.38	17.05	36.23	0.00	19.42

In line with the Common Reporting Format, a negative number is net sink while a positive number represents a net emission or emissions accounting liability. All values are in Mt CO<sub>2</sub>e.

### Assumptions used.

The scenario present here is equivalent to that used in New Zealand's Fifth National Communication to the UNFCCC, pre-1990 (article 3.4 forest management) forests harvested at age 28, and post-1989 (article 3.3) harvested at age 30.

The proposed reference level is based on an analysis of business-as-usual forest management. New Zealand's natural forests are not harvested and are modelled on the assumption of static carbon stocks. This is consistent with New Zealand's best available data.

Exotic forests (plantations for commercial production) are modelled based on business-as-usual harvesting and management intentions. These projections are derived from the well established Forestry-Oriented Linear Programming Interpreter (FOLPI) model of estate management. The structure and use of FOLPI is described in Garcia, 1984<sup>1</sup>, while the 'crop types' (age and species types) are defined using the latest areas from New Zealand's Land Use Carbon Analysis System<sup>2</sup>. Significant improvements in the separation of pre-1990 and post-1989 have been made. National sequestration tables, as used to assess carbon allocated to forests within the domestic Emissions Trading Scheme, can be found on the Ministry of Agriculture and Forestry's Webpage<sup>3</sup>.

Further information, including modelling beyond 2020 is provided in New Zealand's informal submission to the UNFCCC of September 2009.

New Zealand has not provided an estimate of **OPTION B**. This is because we currently do not have the data necessary to make robust projections of carbon stock changes in croplands, grazing lands and other non-forest managed lands to the level of certainty needed for an accounting approach. New Zealand has established a comprehensive Land

<sup>1</sup> <http://web.unbc.ca/~garcia/publ/folpi.pdf>

<sup>2</sup> <http://www.mfe.govt.nz/issues/climate/lucas/>

<sup>3</sup> <http://www.maf.govt.nz/climatechange/reports/sequestration/>

Use Carbon Analysis System (LUCAS) that includes pair sample plots to establish changes in soil carbon. However, these plots have only been measured once and due to the small changes in soil carbon stocks over time, reliable data to establish forward projections will not be available for many years.

**Comparison to the September 2009 submission**

The data presented here is consistent with New Zealand's September 2009 submission. The principal difference is the lower forecasted sequestration in the first commitment period (~1.75MT per year) and slightly higher forecast emissions in the period 2013-2020. This increase in emissions results from a slight increase in expected harvesting in Pre-1990 forests to account for the intentions of post-1989 forest owners.