Submission by Australia to the UNFCCC

23 February 2007

Reducing emissions from deforestation in developing countries

At its twelfth session, the Conference of the Parties invited Parties to submit updated information and data from Parties not included in Annex I to the Convention that are in a position to do so, and on a voluntary basis, additional to that provided in their latest national communications on emissions and trends in deforestation, data needs and policies and programmes in place or being considered to address deforestation and its root causes (FCCC/SBSTA/2006/L.25, paragraph 7).

Australia has extensive experience in reducing emissions from the land use, land-use change and forestry sector, including from deforestation. Australia, therefore, makes this submission in the spirit of sharing experiences, and hopes that these may be useful to Parties as they consider policy approaches and methodological underpinnings to reducing emissions from deforestation.

Summary of Australia's experience

Land based sources and sinks have typically formed a major part of Australia's emissions profile, representing around 30 per cent of Australia's greenhouse gas emissions. Since 1990, action in this sector has been an important means of limiting Australia's emissions growth. Emissions from the land use change sector, as accounted under Article 3.7 (in conjunction with elements of Article 3.3) of the Kyoto Protocol, are projected to decrease by 66 percent of 1990 levels in 2010. This will result in over an 80Mt CO_2-e reduction in emissions.

Australian Data

Consistent with United Nations Framework Convention on Climate Change and Kyoto Protocol reporting requirements, up-to-date information on Australia's national accounting systems is provided in the following documents:

- Australia's Fourth National Communication (released in December 2005) found at http://www.greenhouse.gov.au/international/publications/fourth-comm.html
  - Content on related policies and measures are listed on page 58 of the Communication.
  - National greenhouse gas emissions projections for the land use change sector are listed on page 143 of the Communication.
  - Further background information to the Communication on land use change sector greenhouse gas emissions projections and vegetation reforms can be found at http://www.greenhouse.gov.au/projections/pubs/landusechange2006.pdf

- Australia's National Inventory Reports (the most recent is the 2004 Revised) found at http://www.greenhouse.gov.au/National Inventory Report 2004 (Revised) - Volume 2 Part A
  http://www.greenhouse.gov.au/National Inventory Report 2004 (Revised) - Volume 2 Part B
  - Provides a description of Australia's National Carbon Accounting System and explain methods, monitoring and validation in the Inventory Report.

Australia's National Carbon Accounting System (brief overview)

Australia believes that robust monitoring and reporting is necessary, to track carbon emissions and removals from the land use, land-use change and forestry sector and to provide credibility to the overall policy approach.

Australia's National Carbon Accounting System (NCAS) was specifically designed to provide a robust and cost-effective means to enable greenhouse gas emissions reporting and to track emissions and removals of greenhouse gases from Australian land systems, including those from deforestation. NCAS is spatially explicit, wall-to-wall and includes time series data since about 1970. All emissions (gases, pools and activities) are estimated through a Tier 3, process based system that integrates all reporting categories and, therefore, ensures consistent treatment across all sectors with no gaps or overlaps.

Suitable remotely sensed data is available for Australia since about 1972. A fifteen part time-series of national vegetation cover has been assembled and analysed for vegetation change between 1972 and 2005. The remotely sensed data is drawn from the NASA Landsat sensor. A comprehensive national testing programme was used to derive, and test, a nationally consistent, cost-effective and robust specification. The specification describes approaches and standards for each processing step, including the sequence of quality assurance checks at each processing stage.

An independent continuous improvement and verification programme has been developed and applied. Two independent expert reviews have also been completed. Data is in wide use and is freely shared within the research community. These processes provide continual review of both methods and data from a wide base of the national and international science communities.

The extra products (to deforestation) derived from analysis of the data archive include plantation forests, sparse woody non-forest vegetation, harvest in managed native forest and woody vegetation crown cover density.

The transparency through technical reports and peer reviewed science papers, quality assurance and quality control, continuous improvement and verification, independent review, and wide use of data ensure the programme is as robust and accurate as possible. Deriving all forms of land cover change data for emissions reporting from a single national dataset means there are no gaps or overlaps is reporting of emissions and removals from different activities (for example, from forest management and reforestation).

For further detail on the development and validation of the NCAS can be found in the select publications listed in Annex I.

Annex I

Further detail on the development and validation of Australia's National Carbon Accounting System (NCAS), focusing on the land cover change program, can be found in the following select publications:

Brack, C., Richards, G.P., Waterworth, R.M. (2006) Integrated and comprehensive estimation of greenhouse gas emissions from land systems. Sustainability Science 1, 91-106.

Cacetta, P.A., Bryant, G., Campbell, N.A., Chia, J., Furby, S., Kiiven, H.J., Richards, G.R., Wallace, J. and Wu, X. (2003) *Notes on mapping and monitoring forest change in Australia using remote sensing and other data*. 30th International Symposium of Remote Sensing and the Environment, Hawaii, October 2003.

Caccetta, P.A. and Chia, J. (2002). *Remote Sensing Methods for Plantation Attribution – Experiments and results for map sheet SI50*. CMIS Technical Report 04/31.

Caccetta, P.A. and Furby, S. (2004) *Monitoring sparse perennial vegetation cover*. Proceedings of the 12th Australian Remote Sensing and Photogrammetry Conference, Freemantle, 18-22 October 2004.

Chia, J., Behn, G., Bebbington, B. and Caccetta, P. (2004) *Derivation of a Perennial Vegetation Density Map for the South-West Region of Western Australia*. Proceedings of the 12th Australian Remote Sensing Photogrammetry Conference, Freemantle, W.A, October 2004.

Furby, S. (2002) *Land Cover Change: Specification for Remote Sensing Analysis*. National Carbon Accounting System Technical Report No. 9, Australian Greenhouse Office, Canberra.

Furby, S. and Woodgate, P. (2002) *Remote sensing analysis of land cover change - pilot testing of techniques*. National Carbon Accounting System Technical Report No. 16, Australian Greenhouse Office, Canberra.

Furby, S.L (2004). *Plantation Mapping – South Australia/ Victoria Border – SJ54 (Green Triangle)*. CMIS Technical Report 04/85.

Jones, S., Lowell, K., Woodgate, P., Buxton, L., Mager, A. and Liebchen, S. (2004) *Update on the National Carbon Accounting System continuous improvement and verification methodology*. National Carbon Accounting System Technical Report No. 46, Australian Greenhouse Office, Canberra.

Jones, S., and Buxton, L. (2004) *Report on the 2002 New South Wales Forest and Sparse Woody (interim) Mapping Using the NCAS Continuous Improvement and Verification Methodology*. School of Mathematical and Geospatial Science, RMIT University, Melbourne, Victoria, December 2004.

Lowell, K., Woodgate, P., Jones, S. and Richards, G.P. (2003) *Continuous improvement of the National Carbon Accounting System land cover change mapping*. National Carbon Accounting System Technical Report No. 39, Australian Greenhouse Office, Canberra.

Lowell, K.E., Richards, G.P., Woodgate, P., Jones, S. and Buxton, L. (2005) *Fuzzy reliability assessment of multi-period land-cover change maps*. Photogrammetric Engineering and Remote Sensing 71: 939-945

MBAC Consulting (in press) *Plantation Identification and Typing: Verification of Remotely Sensed Data*. Australian Greenhouse Office, Canberra, Australia.

Waterworth, R.M., Richards, G.P., Brack, C.L., Evans, D.M.W. (2007) A generalised process-empirical hybrid model for predicting forest growth. Forest Ecology and Management 238, 231-243.