



Australian Government

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Agency Report 2010

Hom Pant,

ABARE representative to the GTAP Advisory Board.

ABARE has been a consortium member of GTAP since its inception. The MEGABARE model, the predecessor of the Global Trade and Environment Model (GTEM) of ABARE, was an enhancement of the first version of the GTAP model. The GTAP database is the major input into the GTEM database, which also requires an elaborate population database, energy volume database, technology bundle database and an emissions database.

Currently, ABARE is updating the GTEM database using GTAP v7.1.

ABARE has noticed that international transport cost per unit of exports at fob prices of a commodity from a source country may not have been correctly aligned with the relative distances to the destination countries. We advise that this issue be reviewed by experts in the GTAP Centre and addressed, if found correct. This part of the database is emerging as very policy relevant internationally.

ABARE is now considering using the emissions database produced by the GTAP team and would encourage its inclusion into the core database development program.

Recently, ABARE has developed a land use change and forestry module for GTEM and implemented it with a stylised database. A paper describing the module, its implementation and the results will be presented to the 13th Annual Conference on Global Economic Analysis, on Thursday, 10 June 2010. Based on the experience gained from this exercise, ABARE proposes that the forestry sector in the GTAP database be split into two sectors forest– planting and forest harvesting. Similarly, the capital goods sector be split into at least two sectors – physical capital goods sector and forestry investment sector. ABARE is more than happy to share the details of the steps taken in developing the stylised database.

ABARE has been working in the development of an integrated assessment model of global climate change. Currently we are developing the second generation of the Global Integrated Assessment Model (GIAM) in collaboration with the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

List of selected ABARE works since 2007 that relied heavily on GTAP database:

2010:

Pant, H and Yainshet, A 2010, 'Would carbon pricing reduce deforestation? Insights from illustrative simulations of GTEM augmented with a land use change module', a paper to be presented at the 13th Annual Conference on Global Economics Analysis, June 9-11, Penang, Malaysia.

Calford, E., Gurney, A., Heyhoe, E. and Ahammad, H., 2010. 'The effects of an emissions offsets scheme on Australian agriculture,' in Issues and Insights, ABARE, Canberra.

2009:

Rosegrant, M.W. et al. 2009 "Looking into the future for agriculture and AKST [Agricultural Knowledge Science and Technology]." Chapter 5 in McIntyre et al. (eds.) *Agriculture at a Crossroads*, Global Report of International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD), Island Press, (as one of the Lead Authors, Helal Ahammad from ABARE contributed GTEM based results and analysis).

Ford, M, Gurney, A, Tulloch, C, McInnis, T, Mi, R and Ahammad, H 2009, 'Agriculture and the carbon pollution reduction scheme (CPRS): economic issues and implications', in Issues and Insights, ABARE, Canberra.

Gurney, A., Ahammad, H and Ford, M 2009. "The economics of greenhouse gas mitigation: Insights from illustrative global abatement scenarios modelling." [Energy Economics](#) 31: S174–S186.

2008:

Ahammad H., 2008 "The International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) trade policy scenarios: Implications for agricultural knowledge, science and technology (AKST)", IFPRI Policy Brief, Washington DC.

Australian Government 2008, *Australia's Low Pollution Future: The Economics of Climate Change Mitigation*, Australian Government, Canberra.

Gunasekera, D., M. Ford, E. Heyhoe, A. Gurney, H. Ahammad, S. Phipps, I. Harman, J. Finnigan and M. Brede, 2008. "Global integrated assessment model: A new analytical tool for assessing climate change risks and policies." [Australian Commodities](#) 15 (1): 195-216.

Harman, I., M. Ford, G. Jakeman, S. Phipps, M. Brede, J. Finnigan, D. Gunasekera and H. Ahammad, 2008. "Assessment of future global scenarios for the Garnaut Climate Change Review: An application of the GIAM framework." Background paper to the [Garnaut Climate Change Review](#), CSIRO-ABARE.

Rose, S., H. Ahammad, B. Eickhout, B. Fisher, A. Kurosawa, S. Rao, K. Riahi and D. van Vuuren. 2008. [Land in Climate Stabilization Modeling: Initial Observations](http://www.stanford.edu/group/EMF/home/index.htm). EMF Report Number 21, Energy Modeling Forum, Stanford University. <http://www.stanford.edu/group/EMF/home/index.htm>.

2007:

Ahammad, H., Hester, S and Jakeman, G, 2007. "ABARE modelling of multilateral and unilateral emissions abatement scenarios for the Prime Ministerial Joint Task Group on Emissions Trading Modelling." Commissioned Report for the Prime Ministerial Task Group on Emissions Trading, ABARE, Canberra. Summarised as Appendix H1 in Report of the Task Group on Emissions Trading by the Prime Ministerial Task Group on Emissions Trading, Australian Government Department of the Prime Minister and Cabinet, Canberra.

Gunasekera, D, Kim, Y, Tulloh, C and Ford, M, 2007, 'Climate Change: impacts on Australian agriculture', Australian Commodities, Vol. 14 No 4, December.

Gurney, A, Ford, M, Low, K, Tulloh, C, Jakeman, G, and Gunasakera, G, 2007, 'Technology: toward a low emission future', ABARE Research Report 07.16, ABARE, Canberra.

Ford, M, Gurney, A, Heyhoe, E, Gunasakera, G, 2007, 'Energy security, clean development and climate change: addressing the future challenges in APEC' ABARE Research Report 07.14, ABARE, Canberra.