The Global Trade Analysis Project: Report, Issues and Future Directions

Compiled by
Terrie Walmsley

With contributions from Ginger Batta, Betina Dimaranan, Alla Golub, Thomas Hertel, Kavitha Muthuraman, and Robert McDougall

Center for Global Trade Analysis
Purdue University

Background Paper for the GTAP Advisory Board Meeting
Purdue University, West Lafayette, June 4-5, 2007

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PURDUE
U N I V E R S I T Y

CENTER FOR GLOBAL TRADE ANALYSIS

May 18, 2007

Dear Board Members,

This year has been a very busy year for the Center. In January 2006 the GTAP 6 Data Base documentation was sent to database users and subscribers; and then in April 2007 the first pre-release of the GTAP 7 Data Base was produced – with 101 regions, this has been dubbed the Disney Dalmatian version! Also in April, we released the first pre-release of the special African Data Base.

This year we have also seen a number of staff changes at the Center, and unfortunately it looks as though this will continue into next year. Judy Conner retired in August 2006 and Huey-Lin Lee moved to the National Institute of Environmental Studies, Japan in January 2007. Betina Dimaranan will also be joining IFPRI as a Research Fellow in July, 2007. We wish Huey-Lin and Betina all the best in their new jobs, while we remind ourselves that some staff turnover is a sign of a healthy, dynamic environment. In July 2006, Alla Golub completed here Ph.D. and joined the Center as a post-doc. She will continue the modeling work on dynamic modeling of land use and climate policy started by Huey-Lin. Kavitha Muthuraman joined us as program manager in 2006 and most recently Badri Narayanan will be joining the Center in May. We are currently looking for a replacement for Betina Dimaranan.

In this document we report on this year's accomplishments and lay out preliminary plans for next year. At the board meeting Betina Dimaranan will present recent developments and the priorities for the upcoming GTAP 7 Data Base release and Robert McDougall will present his current work on the energy and tax data. We also look forward to hearing from Mark Gehlhar on his work on the trade data and from David Laborde on the development of a user friendly program for aggregating tariff data, being undertaken by Mark Horridge and David.

As you will see in the following document, the GTAP team has continued to work towards its goals of improving the GTAP Data Base, undertaking high quality research, and educating and enlarging the GTAP Network. I hope you enjoy reading what we have done and our thoughts on the year ahead. We look forward to discussing these issues with you at the upcoming GTAP Advisory Board Meeting at Purdue University next month.

Yours Sincerely,
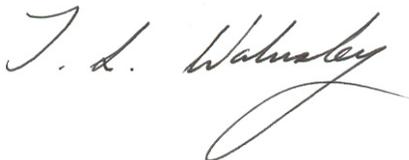
Terrie L. Walmsley,
Director, Global Trade Analysis Project (GTAP)
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Center for Global Trade Analysis Advisory Board Meeting June 4-5, 2007
Purdue University, West Lafayette

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Erasmus University, Rotterdam, The Netherlands

Monday, June 4:   *Prusiecki Banquet Room, Dauch Alumni Center*

8:15 - 9:00am   **Breakfast**

9:00 - 10:10am   **Welcome and Overview** (Chair: Thomas Hertel)
>   **• Introduce New Members and staff (10 min)**
>>   - Thomas Hertel
>   **• Overview of Agenda and Last Year's Action Plan (20 min)**
>>   - Terrie Walmsley
>   **Discussion (40 min)**

10:10 - 10:40am   **Coffee Break**

10:40 - 12:00pm   **GTAP 7 Data Base** (Chair: Frank van Tongeren)
>   **• Overview of the GTAP 7 Data Base (20 min)**
>>   - Betina Dimaranan
>   **Discussion (20 min)**
>   **• Energy (20 min)**
>>   - Robert McDougall
>   **Discussion (20 min)**

12:00 - 1:30pm   **Lunch**

1:30 - 3:00pm   **Trade** (Chair: Robert Koopman)
>   **• Merchandise Trade Data (30 min)**
>>   -   Robert Koopman (15 mins)
>>   -   Mark Gehlhar (15 mins)
>   **Discussion (30 min)**
>   **• Services Trade Data (15 min)**
>>   - Robert McDougall
>   **Discussion (15 min)**

3:00 - 3:30pm   **Coffee break**

3:30 - 5:00pm   **Top Data Base Issues and Research** (Chair: Sebastien Jean)
>   **• Taxes (15 min)**
>>   - Robert McDougall
>   **Discussion (15 min)**
>   **• Land use (15 min)**
>>   - Thomas Hertel
>   **Discussion (15 min)**
>   **• New Features on the Website (15 min)**
>>   - Ginger Batta
>   **Discussion (15 min)**

7:00pm   **Dinner at Maize American Grill**

Tuesday, June 5:   *Prusiecki Banquet Room, Dauch Alumni Center*

7:45 - 8:30am	**Breakfast**
8:30 - 10:00am	**Finances and Software Developments** (Chair: Will Martin)

          • **TrdMat (15 min)**
           - David Laborde (a potential project with Mark Horridge)
          Discussion (15 min)
          • **Budget, Policies, Funding Proposals and Staff Plan (15 min)**
           - Terrie Walmsley and Thomas Hertel
          Discussion (45 min)

10:00 - 10:30am	**Coffee break**
10:30 - 12:00pm	**Discussion of Data Base and Research Issues**[1] (Chair: Terrie Walmsley)
12:00pm - 1:30pm	**Lunch**
1:30 - 2:05pm	**Network and Education** (Chair: Soren Frandsen)

          • **Academic Committee (10 min)**
           - Thomas Hertel
          Discussion (10 min)
          • **Research Fellows Report (10 min)**
           - Antoine Bouët
          Discussion (5 min)

2:05 - 3:00pm	**Network and Education** (Chair: Martina Brockmeier)

          • **Report on Conference 2007 (10 min)**
           - Thomas Hertel and Terrie Walmsley
          Discussion (5 min)
          • **Report on Conference 2008 (10 min)**
           - Juha Honkatukia
          Discussion (5 min)
          • **Conference 2009 Proposal (10 min)**
           - Andres Schuschny
          Discussion (5 min)
          • **Future Discussion on future conferences (5 min)**
           - Thomas Hertel
          Discussion (5 min)

3:00 - 3:30pm	**Coffee break**
3:30 -5:30pm	**Revisit Priorities for Forthcoming Year**

           - Terrie Walmsley

7:00pm	**Dinner at La Scala**

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[1] See Appendix 1 for list of possible issues for discussion.

I.   Mission, Vision and Goals

Our Mission

The Center for Global Trade Analysis is the publicly funded, university-based home for GTAP (Global Trade Analysis Project), a global network of researchers and policy makers conducting quantitative analysis of international policy issues. Our purpose is to improve the quality of global economy-wide analysis through education and by developing analytical data bases, economic models, and innovative methodologies. Our unique institutional structure enables us to foster collaboration among academia, public sector, and private sectors worldwide.

We value:
- *International Collaboration* because it increases quality of data and analysis.
- *Objectivity and transparency* because they are crucial to our data work and analysis.
- *Discovery* because improving methodology leads to better policy analysis.
- *Learning* because it creates critical vibrancy both within the Center and in the expanding network.
- *Engagement* because it helps us serve policy analysts and decision makers with better data and analysis.

We believe that:
- Better data leads to better policy analysis which leads to better policy.
- Reconciling data makes data better.
- CGE modeling provides useful insights.
- Avoiding duplication in data production is efficient.
- Collaboration enhances individual efforts.
- Having more trained users enriches policy debates.

Our Vision of the Future

In 2014, GTAP is an exceptionally vibrant network of global economic policy analysts, with more than 10,000 individuals in 150 countries making contributions. The GTAP Data Base and Models are used in research centers throughout the world, leading to ever greater transparency in global economic analysis.

GTAP-based results are influential among decision makers. After 10 years of intensive model validation efforts, GTAP-based models are widely accepted in the professional literature. Indeed, editors of leading journals actively seek out GTAP-based papers on contemporary policy issues.

The GTAP Data Base remains at the core of the Center. The open-source institutional arrangement by which the Data Base is now assembled has spawned rapid growth, with active collaboration in more than 100 countries. It is now possible for national agencies in any one of those countries to scrutinize key assumptions, rebuild the Data Base, and propose modifications to the official GTAP Data Base. Half of our courses are now conducted in developing countries. The 50 consortium members meet regularly through teleconferences to contribute ideas and to help keep the Center's efforts focused on our vision.

Our Goals

To achieve our vision, we are working toward the future with five goals.

Research Goal: **To actively participate in quantitative economic analysis of pressing global concerns.**

Multilateral and Bilateral Trade Agreements
1. Further develop the Dynamic GTAP Model.
2. Enhance analysis of labor migration.

Global Environmental Issues
1. Enable integrated assessment of climate change mitigation policies in an economy-wide setting.
2. Develop a dynamic framework that characterizes land use and net green house gas emissions in agriculture and forestry.
3. Develop an IPCC-consistent emissions baseline.

Trade and Development
1. Enable household-disaggregated analysis within the GTAP framework.
2. Encourage network members utilize household surveys in conjunction with the GTAP Data Base, and conduct trade/development analysis for their respective economies.

*Data Goal***:   To Improve Data Products.**

1. Improve data quality and user service.
2. Improve data procurement.
3. Improve data development efficiency and quality by distributing data construction program.
4. Expand scope of data base.
5. Improve marketing of data base.

*Education Goal***: To Expand and Improve Global Economic Analysis Education Worldwide (both within and outside the network).**

1. Promote learning among data base contributors.
2. Use workshops and web-based products to provide specialized learning.
3. Improve communication, learning, and transfer of knowledge within the Center.
4. Improve marketing of GTAP courses.

*Model Goal***:   To Improve Understanding and Credibility of The GTAP-Based Models.**

1. Enhance testing and evaluation of the GTAP-based models.
2. Further enhance the ability of users to understand and explain model results *(long range).*

*Network Goal***:   To Increase Effective Participation in the Global Network, particularly in Developing Countries.**

1. Obtain funding from donor agencies for developing country participants.
2. Conduct more courses and conferences in developing countries.
3. Review pricing to enable greater developing country participation.
4. Foster communication within the GTAP Network and beyond.

II. Center Staff, Graduate Students and Visitors

Center Staff

Ginger Batta, Information Technology Specialist

Ginger oversees the design, development, and maintenance of the GTAP website and the preparatory web course websites. Outside of this, she is also responsible for the sales, distribution, and reporting of GTAP Products and the online organization of GTAP's core events.

Betina V. Dimaranan, Research Economist and GTAP Data Base Administrator

Betina leads the overall management and construction of GTAP Data Base releases. She edited the GTAP 6 Data Base documentation published in December. She recently constructed and released a preliminary version of the Africa Data Base. Betina accepted a Research Fellow position at IFPRI and will be leaving the Center by the end of June.

Alla Golub, Post Doctoral Research Economist: Environment (graduated)

Alla is developing infrastructure for the long run economic projections with the Dynamic GTAP model. Building on the dynamic GTAP model and land-use data base developed in the Center, she works on projections of land-use change. She is also revising GTAP-E model. Alla Golub received her Ph.D. from Purdue University in July 2006 and began work at the Center in August.

Thomas Hertel, Executive Director

Tom's focus is on strategic issues and new research directions for the Center, as well as Consortium development. He also supervises graduate students and is involved in a number of environment-related projects at the Center.

Robert McDougall, Deputy Director

Robert works on special projects which significantly improve the GTAP Data Base and Models. This year he was responsible for improvements in the energy data.

Kavitha Muthuraman, Administration and Program Manager

Kavitha oversees the logistics, sales and marketing of GTAP courses, conferences, and board meeting.

Badri Narayanan, Research Economist and Data Base Construction Specialist

Badri will be leading the African Data Base project and assisting with the construction of GTAP Data Base releases; as well as undertaking research. Badri will join us at the end of May, 2007.

Wallace Tyner, Senior Policy Advisor

Wally advises the Center on policy. Most recently he has been spearheading a number of large research projects and proposals in the area of energy and biofuels.

Terrie Walmsley, Director

Terrie oversees the day-to-day management of the Center as well as the GTAP courses. She is also working on the Dynamic GTAP Model in addition to extending GTAP to deal with international labor migration.

Visiting Scholars

Christophe Gouel

Christophe Gouel spent a month in the summer of 2006 at the Center for Global Trade Analysis. During his time at the Center, Christophe co-authored, along with Thomas Hertel, GTAP Research Memorandum No. 08, "Introducing Forest Access Cost Functions into a General Equilibrium Model". The purpose of this Research Memorandum was to propose an approach to incorporating forest access cost functions into global general equilibrium models such as GTAP.

Graduate students (country of origin)[2]

Angel Aguiar (Ecuador)

Angel Aguiar is a PhD candidate in the Dept. of Agricultural Economics. His dissertation research is on the empirical effects of international trade on migration. He has been working with Terrie Walmsley on the Gmig2 Data Base construction and collecting the macroeconomic and energy data for the GTAP 7 Data Base with Betina Dimaranan and Robert McDougall.

Syud Amer Ahmed (Bangladesh)

Amer Ahmed is a PhD candidate in the Department of Agricultural Economics, expected to finish in 2008. His dissertation research is on the impact of trade in services on the USA and India. He has also worked on the GMig2 extension with Terrie Walmsley and on the services data for the GTAP 7 Data Base with Rob McDougall.

Misak Avetisyan (Armenia)

Misak Avetisyan is originally from Yerevan, Armenia and holds a Bachelor's degree in Power Engineering and a Master's degree in Engineering Management from SEUA. He also studied in Ohio University where he graduated with MA in Economics, and MS in Environmental Studies. Currently, Misak is working on the land use and climate change project with the US-EPA.

Jason H. Grant (Canada, graduating in August, 2007)

Jason Grant has been working on a project with Thomas Rutherford and Thomas Hertel in which they imbed a tariff-line, partial equilibrium model within the GTAP framework to take advantage of the rich detail offered in the MAcMap data base. Jason recently accepted a position as an Assistant Professor in the Department of Agricultural and Applied Economics at Virginia Polytechnic Institute and State University. His appointment starts on September 10th, 2007.

Csilla Lakatos (Romania)

Csilla started working at the GTAP in August 2006 assisting Dr. Terrie Walmsley in creating a post-simulation processing add-on to the dynamic GTAP model, while currently she is involved in improving tax data in the GTAP Data Base with Robert McDougall. She is also developing a framework that will allow for a much convenient IO table contribution process.

Tasneem Mirza (Bangladesh)

Tasneem Mirza is a PhD student in Economics and a Research Assistant at GTAP. Her interests include trade in South Asia, role of infrastructure in trade, and analysis of policies pertaining to trade, poverty, income distribution and economic growth. She is planning to work on a project with the Asian Development Bank in this area.

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[2] See supplementary materials for graduate student CVs.

Yoko Uchida (Japan)

Yoko Uchida has returned to Japan to work with the IDE and is continuing her Ph.D. studies with the Center part-time. She is conducting research on FDI and trade in intermediate inputs in East Asia. In addition, Yoko is exploring the possibility of the IDE hosting a future GTAP conference in Asia.

Monika Verma (India)

Monika is currently working on a project with IFPRI aimed at assessing the nutritional impacts of global trade changes.

Nelson Villoria (Venezuela)

Nelson has been the teaching assistant for the web course the Center has undertaken in South Asia and for the graduate course at Purdue. He has recently completed a research project with IFPRI using both econometric methods and GTAP-based modeling to assess the impact of China's growth on African economies.

Other Visitors to the Center

Rod Tyers, Australian National University, Australia, July 2006.

David Laborde, CEPII, France, October, 2006 and April, 2007.

Toshiaki Masuda, Ministry of Agriculture, Forestry and Fisheries, Japan, March 2007.

III.   Objective, Goals and Accomplishments

Assessment of Action Plan for Past Year

The goals for the past year, as laid out in the 2006 GTAP board meeting summary, are listed below, along with an assessment of our progress towards accomplishing these goals. (A complete summary of last year's board meeting is available from the consortium page of the GTAP Website):

http://www.gtap.agecon.purdue.edu/events/Board_Meetings/2006/documents/2006_Summary.pdf

One of the big issues at the board meeting last year was the need for additional resources. At that meeting a number of action items listed were listed, but it was indicated that the items were of lower priority and hence may not be undertaken because of the resource constraints. These items are listed in **bold**.

Research Goal: **To actively participate in quantitative economic analysis of pressing global concerns.**

Multilateral and Bilateral Trade Agreements

1. Refine and document Dynamic GTAP Model	Terrie Walmsley	Elena Ianchovichina, Robert McDougall, Alla Golub, Rod Tyers, Ken Itakura and others

This goal was greatly facilitated by the Dynamic modeling short course that was held at Purdue in October, 2006. Terrie Walmsley has updated the model code and RunGDyn program in light of comments from the short course. This has also meant updating some of the chapters, including the baseline, hands-on and welfare decomposition chapters. Our aim is to send the book to the publishers in September.

We also continue to maintain a shared baseline data base, which can be used by consortium members for their own dynamic modeling work. Some aggregated data and programs have been placed on the website.

http://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=2204

Papers on baselines have also been included on the website:

http://www.gtap.agecon.purdue.edu/resources/res_list.asp?SearchType=GTAP+Application&SearchField=TOPIC&SearchValue=Baseline

2. Produce research papers on GMig2. Make Data Base available end of year	Terrie Walmsley	Grad student (Amer Ahmed)

The technical paper will be sent to reviewers shortly. If you are interested in reviewing this paper please let Tom Hertel know, as he will be coordinating the review. This is also a great way to get an early peak at the data!

3. Facilitate GTAP-disaggregated analysis of trade policy at the tariff line level by developing a prototype application that can be applied to disaggregate strategic sectors in any GTAP analysis.	Tom Hertel and Tom Rutherford	Grad student (Jason Grant)

This draws on the HS-6 trade and tariff data available in the MAcMap data base.

The following paper is currently under journal review and it is available as a working paper on the GTAP website:

Grant, J. T. W. Hertel and T. F. Rutherford. 2007. "Extending General Equilibrium Analysis to the Tariff Line: US Dairy in the Doha Development Agenda".

4. Use the GTAP website as a repository for baseline data	Terrie Walmsley	Ginger Batta, Robert Koopman, Marijke Kuiper and Lionel Fontagné.

Some aggregated baseline data and aggregation programs are now available on the GTAP website. Baseline data will be revised as the baseline chapter for the Dynamic GTAP book is updated.

Global Environmental Issues

5. Modify the GTAP-E model from technical paper 16 to create a non-aggregation specific energy model.	Alla Golub	Tom Hertel, Robert McDougall, Terrie Walmsley

The modification involves two parts: to produce cleaner and more user friendly GTAP-E model, and to produce non-aggregation specific energy model. The first task is expected to be completed this month (May). The second part of the revision includes dealing with the energy model specific data and inclusion of the data in the standard GTAP Data Base aggregation programs, and will be completed next fall.

6. Extend Dynamic GTAP to include energy (GDyn-E)	Terrie Walmsley	Tom Hertel, Robert McDougall, Alla Golub

Work still needs to be undertaken on developing an application with GDyn-E Model. Alla Golub and Terrie Walmsley are currently working on developing policy scenarios to be analyzed with GDyn-E and improving representation of energy use related technology in the model.

7. Incorporate land use data into the standard GTAP Data Base.	Huey-Lin Lee	Tom Hertel

A program now exists to take the standard GTAP Data Base and split out land use by Agro-Ecological Zone (AEZ). However, we do not anticipate incorporating this information into the standard data base in version 7. The concern is that we will overburden the standard data base. Also, it is not yet clear whether the land use data will be updated on a regular basis. Note that the land use data base is currently being updated and will be documented in chapters 2-3 of the forthcoming book on global land use (see below). This work is being under taken with the assistance of Misak Avetisyan and Navin Ramankutty.

8. Refine and document a special purpose version of the GTAP Model focusing on land use (GTAP-AEZ).	Tom Hertel	Huey-Lin Lee, Steven Rose

This model is documented in a GTAP Working Paper and the forthcoming book chapter:

Hertel, T. W., H. Lee, S. Rose and B. Sohngen, (2008). "Modeling Land-use Related Greenhouse Gases and their Mitigation Potential", In *Economic Analysis of Land Use in Global Climate Change Policy*. Edited by T. Hertel, S. Rose and R. Tol. Routledge: forthcoming.

9. Refine the methodology for producing long run projections (including GHG emissions) with a modified version of the Dynamic GTAP Model, including AIDADS demands, disaggregated land use, and improved specifications of savings and technical change.	Alla Golub	Tom Hertel, Carlos Ludena

The baseline is documented in an ADB Working Paper, while the land use focus is developed in a forthcoming book chapter:

Hertel, T. W., C.E. Ludena and A. Golub, 2006. "Economic Growth, Technological Change, and Patterns of Food and Agricultural Trade in Asia," Asian Development Bank Economics and Research Department Working Paper No. 86, November.

Golub, A., T.W. Hertel and B. Sohngen, (2008). "Long Run Determinants of the Global Supply and Demand for Land", In *Economic Analysis of Land Use in Global Climate Change Policy*. Edited by T. Hertel, S. Rose and R. Tol. Routledge: forthcoming.

This work is being under taken with the assistance of Brent Sohngen.

In addition to listed modifications of the Dynamic GTAP Model, recent work introduces the possibility of conversion of unmanaged land to land used in production and technical change in the timber using sectors, where later is determined through iterations between the Dynamic GTAP Model and the Global Timber Model of Sohngen and Mendelsohn (2006). The next step in this work is projection of GHG emissions driven by the changes in land use.

10. Produce a draft book on global land use modeling in general equilibrium.	Tom Hertel	Steven Rose, Richard Tol

A contract has been signed with Routledge and the book is nearly complete and ready for review. The reference is as follows

Hertel, T. W., S. Rose and R. Tol (eds.) (2008). *Economic Analysis of Land Use in Global Climate Change Policy*. Routledge: forthcoming.

It contains contributions by several consortium members, including ABARE, US-EPA, LEI and MIT.

11. Produce a GTAP Technical Paper and a 2001 data base on Green House Gas emissions, including not only CO2 from fossil fuels, but also non-CO2 emissions.	Huey-Lin Lee	Tom Hertel, Steven Rose (EPA)

This work is now being undertaken and led by Misak Avetisyan, a graduate student at the Center.

Trade and Development

12.	Develop a module for poverty analysis in GTAP	Tom Hertel	Maros Ivanic

The following paper documents such a module. Data are currently available for 15 countries. This could be extended to additional countries by a graduate student if there were funding and interest in doing so. This application will be used in the upcoming GTAP Short Course, after which the version archive will be posted on the web.

> Hertel, T.W., R. Keeney, M. Ivanic and L.A. Winters, 2007. "Why Isn't the Doha Development Agenda More Poverty Friendly?" GTAP Working Paper #27.

This work is being done with the assistance of Roman Keeney.

In addition, further theoretical and empirical work has been done on the estimation of consumer behavior in the neighborhood of the poverty line – funded in part by the World Bank. The following paper is forthcoming in the Bank's Policy Research Working Paper series:

> Cranfield, J.A.L., P.V. Preckel and T. W. Hertel. 2007. "Poverty Analysis using an International Cross-Country Demand System", GTAP Working Paper No. 34.

13.	Produce a paper on the distributional impacts of agricultural policies on farmers in rich and poor countries.	Tom Hertel	Maros Ivanic, Roman Keeney, L. Alan Winters

> Hertel, T.W., R. Keeney, M. Ivanic and L.A. Winters, 2007. "Distributional Impacts of WTO Reforms in Rich and Poor Countries," Economic Policy 50(1):1-49 (April).

14.	**Produce a technical paper on linking models to GTAP**	**Robert Koopman**	**Ashley Winston, Marijke, Thomas Hertel**

No progress to-date, however Marinos Tsigas is currently working on this aspect of the USAGE model.

Data Goal: **To Improve Data Products.**

15.	GTAP 6 Data Base Documentation	Betina Dimaranan	Robert McDougall, Judy Conner

Betina Dimaranan completed editing the nearly 700-page volume documenting the GTAP 6 Data Base. This was published in December 2006 and sent to GTAP 6 Data Base subscribers in January. Please reference this as follows, in any applications using the version 6 data base:

Dimaranan, B. V., Ed., (2007). *Global Trade, Assistance, and Production: The GTAP 6 Data Base*, Center for Global Trade Analysis, Purdue University, West Lafayette, IN 47907, U.S.A.

| 16. Update energy price data in GTAP 6 Data Base and produce GTAP 6E Data Base | Robert McDougall | Vitaly Kharitonov, Betina Dimaranan |

A great deal of progress has been made by Robert McDougall to revise and improve upon the energy module of the GTAP Data Base construction process this year. These improvements will also be evident in pre-release 2 of the GTAP 7 Data Base. Robert will report on the progress made at the advisory board meeting.

| 17. Implement the GTAP 7 Data Base release schedule | Betina Dimaranan | Robert McDougall |

Betina Dimaranan constructed and released the first pre-release of the GTAP 7 Data Base in April. The first pre-release incorporated 2004 macroeconomic aggregates, merchandise trade data and protection data (domestic support, export subsidies, preferential tariffs, ETEs of ATC quotas). If data inputs are received in a timely manner, a second pre-release which will include improved services trade and energy data will be made at the end of May. We will certainly be challenged to maintain Betina's timely production schedule after she departs for IFPRI. She will be missed!

| 18. Fix problems with the agricultural I-O disaggregation module | Robert McDougall | Betina Dimaranan |

The problems with this module have not yet been fixed. This means that the automated features of the disaggregation module are not working in a few sectors for a couple of regions. In order to disaggregate these problematic sectors we work directly with contributors. This causes some annoyance, but is not a high priority concern.

| 19. Incorporate work done by CPB on bilateral services trade data into the GTAP 7 Data Base. | Robert McDougall and Arjan Lejour | Terrie Walmsley and Grad student (Amer Ahmed) |

The services trade data is currently under preparation and will be incorporated in the second pre-release of the GTAP 7 Data Base. This will be discussed at the upcoming board meeting.

| 20. Incorporate 2004 MAcMap data from CEPII into GTAP 7 Data Base | Lionel Fontagné | Betina Dimaranan |

An initial version of the 2004 MAcMap tariff dataset was contributed by David Laborde of CEPII and this has been incorporated in pre-release 1 of the GTAP 7 Data Base. An updated version is forthcoming and this will be incorporated in the next pre-release. David Laborde is leading these efforts.

| 21. Improve the income tax data in GTAP by adjusting the allocation of income taxes to capital and labor income. | Robert McDougall | Gilbert Metcalf, Angelo Gurgel |

At the 2006 board meeting, Gilbert Metcalf presented a comparison of the GTAP tax rates and the MIT methodology for incorporating taxes into the GTAP Data Base. The comparison examined both direct and indirect taxes in the GTAP Data Base and found some large differences. One source of these was different estimates of the tax base, and especially labor income. Another was the treatment of personal income tax; where GTAP imputed these entirely to labor income, MIT divides them proportionately between labor and property income.

Csilla Lakatos has been working on this problem, under supervision from Robert McDougall and Tom Hertel, Robert will report on progress in the taxes at the board meeting. At this year's board meeting, Robert McDougall will present a detailed reconciliation between the taxes in the GTAP 6 Data Base and the original data. The Center expects to improve this aspect of the GTAP 7 Data Base.

We will however continue to rely on indirect commodity tax rates reported by the contributors of regional data. As additional resources become available, we would like to improve this part of the data base.

22. Examine ways to further improve the commodity tax data for the GTAP 7 Data Base.	**Robert McDougall**	**Tom Hertel, Gilbert Metcalf, John Reilly and Grad student**

Board members will recall that resource limitations precluded including this as an action item over the past year. However, Robert McDougall will outline a plan for addressing this issue in the future, provided resources are found to do so.

23. Incorporate information from updated literature survey on the primary factor shares in agriculture	Betina Dimaranan	Tom Hertel, Grad student

The primary factor shares in agriculture will be updated based on information from more recent literature in the next pre-release.

24. Incorporate Maros Ivanic's value added splits into version 7 of the GTAP Data Base.	**Betina Dimaranan**	**Tom Hertel, Grad student (Nelson Villoria)**

Board Members will recall that resource limitations precluded including this as an action item over the past year, however, Nelson has been working on an externally funded project which has examined this issue.

25. Update energy volume data for incorporation into GTAP 7 Data Base.	Robert McDougall	Huey-Lin Lee, Betina Dimaranan, Vitaly Kharitonov

Robert McDougall and Angel Aguiar are currently working on preparing the 2004 energy volume data that will be incorporated in pre-release 2 of the GTAP 7 Data Base.

26. Update energy price data in GTAP 7 Data Base.	**Robert McDougall**	**Vitaly Kharitonov, Betina Dimaranan**

Robert McDougall has made extensive changes to the energy module and in particular the way in which prices are determined for the GTAP 6 Data Base. These will feed directly into improving the GTAP 7 Data Base , which will be included in pre-release 2 of the GTAP 7 Data Base. Robert will report on the progress made at the advisory board meeting. Progress on the energy data is also contained in the supplementary documentation (Preparation of GTAP Data Base Release 6.2E).

27.	Continue efforts to obtain new I-O Tables for China, Africa and Latin America, as well as other regions where the opportunity presents itself.	Terrie Walmsley	Fan Zhai, Patrick Osakwe, Robert Koopman, Antoine Bouët

Pre-release 1 of the GTAP 7 Data Base is includes 101 countries. New countries include Kazakhstan, and Kyrgyzstan, thanks to the efforts of Joe Francois and Lucio Vinhas de Souza, and Nicaragua thanks to the continued efforts of Carlos Ludena. Revised I-O tables have also been obtained for Chile, Indonesia, Turkey and China.

Thanks to the problem reports from David Laborde and Truong Truong, we also received revised versions of the Belgium, Luxembourg, and France data bases. The report from David Laborde on the EU I-O tables and on other aspects of the GTAP Data Base can be found website at:

https://www.gtap.agecon.purdue.edu/access_board/data_issues.asp

I-O tables for Ukraine and Belarus have also recently been contributed through Joe Francois and Lucio Vinhas de Souza and we are expecting updated EU I-O tables through a project funded by the European Commission.

28.	**Continue to improve the quality of national I-O data through the construction of new programs extracting national account data and adding flags to GTAPAgg.**	**Terrie Walmsley**	**Ginger Batta, Grad student (Tasneem Mirza)**

Developments have been made in this area with the assistance of the Productivity Commission and the USITC. Patrick Jomini and Alexandra Strezelecki from the Australian Productivity Commission have developed a GEMPACK-Visual Basics package which extracts summary tables from the GTAP Data Base into excel. The programs will be made available on the Productivity Commission website and once finalized we will be including the data (in excel) for 10 aggregated sectors on the GTAP website.

With the support of Robert Koopman and the USITC we are also examining ways in which I-O tables can be externally peer-reviewed. The proposal is discussed below in the data section. The review of I-O tables is expected to significantly improve the quality of the regional data in the GTAP Data Base. We would be interested to hear from any board members who are willing to assist as with these reviews.

External reports on both the regional data and other aspects of the GTAP Data Base have also been made available on the board website:

https://www.gtap.agecon.purdue.edu/access_board/data_issues.asp

Last year, Ginger Batta, Tasneem Mirza and Terrie Walmsley created a means by which I-O tables could be submitted over the web and reports on data quality could be fed back to the contributor. These reports were then made available to board members and summaries of these reports were also made publicly available. Our aim is to make more information from these reports publicly available. This year reports on all of the old I-O tables were finalized and the sector and mapping files of the original data were made

publicly available. It is hoped that this will assist users in determining the limitations of these data bases and how best to aggregate the 57 sectors of the GTAP Data Base in order to avoid results driven by sector-splits based on limited information. These reports are available on the website:

https://www.gtap.agecon.purdue.edu/access_board/IO/default.asp

29. Hire a new staff member to assist with the production and documentation of the GTAP Data Base	Tom Hertel	Terrie Walmsley, Betina Dimaranan, Robert McDougall

After a formal hiring process, Badri Narayanan was hired. He will arrive in late May 2007 and will attend the board meeting. We look forward to working with Badri. Terrie Walmsley led this hiring process.

30. Develop a special data base with substantial African disaggregation.	Betina Dimaranan	Terrie Walmsley, Robert McDougall, new data hire

Following various discussions with the UNECA, the World Bank and the European Commission, after the 2006 board meeting, it was decided that the Center would develop a special African GTAP Data Base which would break out a number of African countries and regional trading blocs using externally collected data. This special data project would be separate from the standard GTAP Data Base; however the resulting data base will be made publicly available in aggregated form (i.e., in a form which does not undermine the standard GTAP Data Base sales, but which maximizes its impact in Africa).

An Africa Data Base, constructed by Betina Dimaranan, was recently released by the Center to the UNECA and funding agencies of the Africa Data Project (The World Bank and the European Commission). The data base was built on existing national data bases and international datasets incorporated in the GTAP 6 Data Base and features further disaggregation of the North and Sub-Saharan Africa region into 31 regions. In this initial version, the national data bases for countries such as Algeria, Cote d'Ivoire, Ghana, Cameroon, Angola, Ethiopia, Kenya, Sudan, and several country aggregates representing PTAs in Africa were simply constructed by using the input-output structures of similar countries in the data base.

The Africa Data Project aims to improve the GTAP Data Base to allow for quantitative assessments of regional and multilateral trade agreements in Africa. The initial data base (Stage 1) is intended only for evaluation and comment to help identify priorities for improving data quality and to compare with existing country-specific data. Subsequent stages of the project will involve review of the international data sources, collection and/or estimation of additional data, and incorporation of national data bases from external data contributors. Badri Narayanan will be working on this project after his arrival in May.

Six scholarships have been awarded to individuals who will assist us with I-O tables for the African Data Base, based on funding from the BNPP. These individuals have been selected based on their interest in GTAP, their commitment to trade policy related work, and their access to/and experience with, IO data in key countries in Africa. They will attend the annual short course and a special course on producing GTAP I-O tables.

31. Form expert trade data working committee headed by Mark Gehlhar to oversee production of GTAP 7 trade data.	Mark Gehlhar	Robert McDougall, Lionel Fontagné, Zhi Wang

Mark Gehlhar at the ERS/USDA continues to be a key contributor to the GTAP Data Base reconciling and leading improvements in the trade data used in the GTAP Data Base. The trade data is an important part of the GTAP Data Base, and with the increase in demand for new countries and methods for dealing with sensitive issues, such as re-exports, the work required to bring the trade data together has increased exponentially. Mark has done an outstanding job in bringing overcoming these complex challenges and producing a robust, useful trade data base.

Mark Gehlhar is now chairing the trade committee. This committee is examining some of the more difficult issues in reconciling the trade data for the GTAP Data Base. He is leading a special session at the GTAP conference to discuss some of the issues in reconciling the trade data.

32. Examine ways to fill in missing trade data e.g., in Africa	Mark Gehlhar	Patrick Osakwe, Betina Dimaranan, Will Martin, Marijke Kuiper

We expect to examine the issue of missing trade data further over the next year as we move into the second phase of the Africa project.

33. Establish a Trade data users forum to evaluate the quality and documentation of the trade data (starts with a Comparison of CEPII and Mark's trade data)	Robert Koopman	Martina, Cheryl, Mark G., Lionel, Patrick Jomini, Robert Koopman, Arjan, Michael Finger, Zhi Wang

On behalf of the Board, Robert Koopman has been working with Mark Gehlhar, Lionel Fontagné, and Zhi Wang to with an emphasis on reconciling diverse approaches and results. Robert Koopman and Mark Gehlhar will be presenting progress in this regard at the board meeting.

34. Examine changes to GTAPAgg for aggregating reference group weights data	Betina Dimaranan	Lionel Fontagné

David Laborde has been working with the World Bank to include the CEPII protection data and alternative weighting schemes into WITS, so that aggregated reference group weighted tariffs can now be obtained from WITS and used with altertax and RunGTAP. Lionel Fontagne is also chairing an organized session at the conference on Working at the Tariff Line level.

In addition, Mark Horridge and David Laborde are also currently working together to produce a TRDMAT, a tariff scenario building and aggregation program which starts at the HS6 level. This program is expected to do three things:
   a. Allow the user to aggregate tariffs from the HS6 level which could then be incorporated into RunGTAP using altertax. This would also allow users to specify reference group weighted tariffs in GTAP.
   b. Build Doha scenarios from the HS6 level and aggregate again using trade weights or reference group weights
   c. Provide input into SplitCom; the program for splitting commodities.

David Laborde will provide a demonstration of the new program at the board meeting. We are currently looking for special funding to bring this work to fruition. The TrdMat proposal will be provided in the supplementary materials as soon as it becomes available.

35. Technical paper on comparing alternative weightings of tariffs	Antoine Bouët	

No progress has been made on this.

36. Provide "better packaging/documentation" to emphasize default and alternative tariff weighting scheme	Betina Dimaranan	

Reference-group weighted tariffs, the alternative to the trade-weighted tariffs incorporated in the GTAP 6 Data Base was provided in the same GTAPAgg package which incorporates Doha scenarios tariff data. This is documented and downloadable from:

https://www.gtap.agecon.purdue.edu/databases/v6/V6_dohascen.asp

37. Share tariff-building scenarios, code and data over the website.	Betina Dimaranan	Ginger Batta, Martina, Lionel, Patrick Jomini, Robert Koopman, Will, Masa, Tim Buehrer, Roberta Piermartini, Marijke Kuiper, Hsin Huang, Feng Chang, Fan Zhai, Antoine Bouët

A group of Board Members met informally after last year's board meeting and agreed to share tariff scenarios and related computer code on the GTAP website. Such a repository is now available at:

https://www.gtap.agecon.purdue.edu/access_board/Doha_scenarios.asp

Code and data have been shared by CEPII, the Productivity Commission and Nathan Associates.

We envision the new TrdMat program greatly facilitating such work for the majority of users in the future. The most sophisticated users will still want to build their own programs from scratch for maximum flexibility.

The page currently includes SAS files for Doha scenarios contributed by CEPII and a link to the Integrated Tariff Analysis System (ITAS) from the Productivity Commission.

38. Set up a SplitCom user group	Ginger Batta	Martina, Patrick Jomini, Robert Koopman, Peter Minor

A forum was set up on the website, but no activity has occurred. It is thought that email lists would provide interested users with a better forum for discussions. The forums are available at:

http://www.gtap.agecon.purdue.edu/forums/default.asp

39. Examine ways in which the data can be viewed to make it more readily accessible and usable in its own right – also adding ample "health warnings".	Ginger Batta	Tom Hertel, Terrie Walmsley, Grad student (Tasneem Mirza)

Patrick Jomini and Alexandra Strezelecki from the Australian Productivity Commission have developed a GEMPACK-Visual Basics package which extracts summary tables from the GTAP Data Base into excel. The programs will be made available on the Productivity Commission website and once finalized we will be including the data (in excel) for 8-10 aggregated sectors on the GTAP website.

40. Working committee to explore approaches for addressing classification problem in textiles and wearing apparel and report to the board next year	Peter Minor	Terrie Walmsley, Joe Francois, Grad student

No progress has been made on this issue.

***Education Goal*: To Expand and Improve Global Economic Analysis Education Worldwide (both within and outside the network).**

41. Hold Fourteenth Annual GTAP Short Course at Purdue in August, 2006	Terrie Walmsley	Judy Conner, Betina Dimaranan, Tom Hertel, Huey-Lin Lee, Robert McDougall, Ginger Batta

The GTAP Short Course in August 2006 was again a success thanks to Judy Conner and all the instructors.

42. Hold Dynamic GTAP Short Course at Purdue in October 2006	Terrie Walmsley	Judy Conner, Robert McDougall, Tom Hertel, Betina Dimaranan

The Dynamic GTAP Short Course, held in October 2006 was attended by 13 individuals from Asia, Europe, North America and Oceania. The course was a success thanks to all the staff and instructors. Alla Golub, Huey-Lin Lee and Ken Itakura also assisted as instructors and Ginger Batta assisted with the computer labs.

***Model Goal*: To Improve Understanding and Credibility of GTAP-Based Models.**

43. Finalize technical paper on adjustment cost	Joe Francois	Terrie Walmsley, Tom Hertel, Grad student (Vitaly Kharitonov)

Paper has been finalized. It is pending final revisions and submission by Joe Francois.

44. Estimate new set of consumer demand elasticities, for use in GTAP Data Base. Produce a draft technical paper introducing a new final demand system into GTAP (AIDADS)	Tom Hertel	Grad student (Tasneem Mirza)

Re-estimation for version 6 data has been completed. This will also be done for version 7. The technical paper has not yet been written.

45. Collaborate with USITC on model validation and parameter estimation	**Terrie Walmsley**	**Tom Hertel, Grad student**

The USITC has undertaken efforts to improve model validation and parameter estimation. These efforts are outlined in their agency report.

Network Goal: **To Increase Effective Participation in the Global Network, Particularly in Developing Countries.**

46. Organize the Tenth Annual Conference on Global Economic Analysis to be held at Purdue University, USA, June 2007	Tom Hertel and Terrie Walmsley	Ginger Batta and Kavitha Muthuraman

It is hoped that the 10th Annual Conference in Global Economic Analysis at Purdue will be a huge success. Ginger Batta has again expertly managed the website and registration and paper submission process. 210 abstracts were submitted and 178 papers were accepted as a result of the review process. There will also be 14 organized sessions.

47. Work with the group in Finland to refine their planning for the 2008 Conference on Global Economic Analysis to be held in Helsinki.	Tom Hertel	Ginger Batta, Kavitha Muthuraman, Terrie Walmsley

Juha Honkatukia will present an update on conference preparations at the Board meeting.

48. Solicit proposals for the 2009 Conference on Global Economic Analysis to be circulated to the Board in December, 2006.	Tom Hertel	Ginger Batta, Kavitha Muthuraman, Wally Tyner Terrie Walmsley

A conference proposal was received from ECLAC for the 2009 conference to be held in Santiago, Chile. The board unanimously approved this proposal. The conference will be held at the ECLAC conference Center and is supported by the IADB. A representative from ECLAC will join us at the board meeting to present and discuss the proposal.

49. Explore funding opportunities for developing country scholarships for the 2007 conference.	Wally Tyner	John Beyer, Frank van Tongeren, Paolo Giordano, Will Martin, Marco Fugazza, Joe Francois, Hom Pant

Unfortunately no scholarships were obtained for the conference for developing country participants, however a discount is being provided to participants from developing countries. Over the last few years we have been able to fund participation in the course of people from South America, South Asia and, this year, from Africa; this has been very successful. There is a lot of interest in scholarships and we would be very pleased to hear if you know of individual scholarships or funding opportunities for such courses to which we could refer applicants in the future.

*Other Center***:**

50. Hire Program Manager	Terrie Walmsley	Ginger Batta, Judy Conner, Betina Dimaranan

We were very pleased that Kavitha Muthuraman accepted our offer of program manager in September 2006. She has done a great job of organizing the logistics of the 10th Annual Conference in Global Economic Analysis.

51. Form committee to explore long-term funding source	Thomas Hertel	Terrie Walmsley, Hakim Ben Hammouda, Will Martin

The European Commission recently included in its FP7 a request for proposals for a European focused database for modeling. A copy of the proposal request is provided in the supplementary materials for this board meeting. The Center has indicated that it would be very interested in supporting and collaborating with Board Members to develop a proposal. There has been preliminary correspondence with several of the European Board Members in this regard. This will be discussed at the board meeting during the session on future finances.

Other Key Issues from last year's Board Meeting

a. Center Finances and Staffing Plan

The Center has now implemented the plan to index the board member fee by the average annual increase in wage rates provided to Center staff (currently 4%), which was discussed and agreed upon following the 2006 board meeting. Further details of the plan can be found in the 2006 Board Summary:

http://www.gtap.agecon.purdue.edu/events/Board_Meetings/2006/documents/2006_Summary.pdf

A revised version of the GTAP Consortium agreement, which takes account of these changes in the fee structure, can be found in the supplementary material. We encourage board members to obtain approval from their organizations on the new board agreement.

In a recent development that we believe will have important long run implications, the Center has added a

second appendix to the consortium agreement enabling the provision of technical services by the Center to member agencies. Once the optional Appendix B has been signed, technical services may be commissioned from the Center with a one page proposal. This will significantly reduce the time taken to process contracts, which has been a substantial barrier to such agreements in the past. Indeed, we have already signed our first agreement – a small project with the OECD to produce a bio-fuels augmented data base. Copies of this new technical agreement and exhibit are provided in the supplementary materials. Board members interested in signing this new technical agreement, thereby making it possible to undertake future work with the Center, should contact Kavitha Muthuraman and Terrie Walmsley.

Finally, funding has been obtained from the BNPP via the World Bank and the European Commission to create a special African Data Base. This funding will help support our new Data Construction Specialist, Badri Narayanan, and also provide scholarships to 6 African economists who will help to build better data base infrastructure in the African portion of the GTAP Data Base, as well as undertaking research on pending trade agreements in the region.

Action Plan for Forthcoming Year

The following is a preliminary list of action plans for the forthcoming year:

Research Goal: **To actively participate in quantitative economic analysis of pressing global concerns.**

Multilateral and Bilateral Trade Agreements

1.	Technical paper on the GMig2 Model	Terrie Walmsley	Grad student (Amer Ahmed)
2.	Publish paper on South Asian regional integration	Tom Hertel	Grad student (Tasneem Mirza)
3.	Publish paper on impacts of China's growth in Southern Africa	Tom Hertel	Grad student (Nelson Villoria)
4.	Work with African Scholars on Research Papers	Badri Narayanan	Terrie Walmsley and Tom Hertel
5.	Analysis of South Asia and China growth with Dynamic GTAP Model	Alla Golub	Terrie Walmsley, Tom Hertel
8.	Complete book about Dynamic GTAP Model.	Terrie Walmsley	Elena Ianchovichina, Robert McDougall, Alla Golub, Rod Tyers, Ken Itakura and others

Global Environmental Issues

6.	Extend Dynamic GTAP to include energy (GDyn-E)	Alla Golub	Terrie Walmsley, Tom Hertel, Robert McDougall

7.	Revise the GTAP-E model	Alla Golub	Robert McDougall, Terrie Walmsley, Tom Hertel
8.	Develop Dynamic land use model	Alla Golub	Tom Hertel
9.	Complete book on Economic Analysis of Land Use in Global Climate Change Policy.	Tom Hertel	Steven Rose, Richard Tol
10.	Revise global land use data base and technical paper #25	Tom Hertel	Grad student (Misak Avetisyan)
11.	Publish paper on determinants of the long run demand for land	Tom Hertel	Alla Golub

Trade and Development

12.	Develop a module for poverty analysis in GTAP	Tom Hertel	Ken Pearson, Maros Ivanic
13.	Publish a paper on the nutritional impacts of globalization	Tom Hertel	Grad student (Monika Verma)

Data Goal: **To Improve Data Products.**

14.	Implement Peer-review process for regional data	Terrie Walmsley	Ginger Batta, Grad student (Tasneem Mirza)
15.	Evaluate and adjust bilateral services trade data for GTAP 7 Data Base.	Arjan Lejour (Chair)	Robert McDougall and Grad student (Amer Ahmed)
16.	Fix problems with the agricultural I-O disaggregation module	Robert McDougall	Grad student (Angel Aguiar)
17.	Examine ways to further improve tax data for the GTAP 7 Data Base.	Robert McDougall	Tom Hertel, Gilbert Metcalf, John Reilly and Grad student (Csilla Lakatos)
18.	Implement the GTAP 7 Data Base release schedule	Robert McDougall	Badri Narayanan
19.	Create African Data Base	Badri Narayanan	Robert McDougall
20.	Hire a new staff member to manage data base construction process	Terrie Walmsley	Tom Hertel, Robert McDougall

| 21. Improve Labor skill splits | Terrie Walmsley | Rod Tyers and Grad student |

Education Goal: **To Expand and Improve Global Economic Analysis Education Worldwide (both within and outside the network).**

22. Hold Fifteenth Annual GTAP Short Course at Purdue in August, 2007	Terrie Walmsley	Kavitha Muthuraman, Ginger Batta, Tom Hertel, Robert McDougall, Alla Golub
23. Hold a 2-day course on contributing regional data to the GTAP Data Base.	Mark Horridge and Terrie Walmsley	Robert McDougall and Badri Narayanan, Kavitha Muthuraman
24. Continue to Refine the Dynamic GTAP Model, course materials and software	Terrie Walmsley	Alla Golub, Ginger Batta and others

Model Goal: **To Improve Understanding and Credibility of GTAP-Based Models.**

| 25. Estimate love of variety parameters for use in modified models of monopolistic competition. | Tom Hertel | Grad student (Adina Aredelean) |
| 26. Estimate new set of consumer demand elasticities, for use in GTAP 7 Data Base. | Tom Hertel | Grad student (Tasneem Mirza) |

Network Goal: **To Increase Effective Participation in the Global Network, Particularly in Developing Countries.**

27. Organize the Eleventh Annual Conference on Global Economic Analysis to be held in Helsinki, Finland, June 2008	Tom Hertel	Ginger Batta, Kavitha Muthuraman, Terrie Walmsley
28. Work with ECLAC in Chile to refine their planning for the 2009 Conference on Global Economic Analysis to be held in Santiago.	Tom Hertel	Ginger Batta, Kavitha Muthuraman, Terrie Walmsley
29. Solicit proposals for the 2010 Conference on Global Economic Analysis to be circulated to the Board in December, 2007.	Tom Hertel	Ginger Batta, Kavitha Muthuraman, Terrie Walmsley
30. Hire a new Program Manager	Terrie Walmsley	Tom Hertel, Robert McDougall

IV.   The GTAP Data Base

Overview of the Data Goal

> 1. Improve data quality and user service.
> 2. Improve data procurement.
> 3. Improve data development efficiency and quality by distributing data construction program.
> 4. Expand scope of data base.
> 5. Improve marketing of data base.

A brief review of the history of the GTAP Data Base is provided in Appendix 2.

GTAP Data Base Priorities for Forthcoming year

a.   GTAP 7 Data Base Release

Although we will endeavor to release the GTAP 7 Data Base before the end of the year, we will certainly be challenged to maintain Betina's timely production schedule after she departs for IFPRI.

Our priorities will be finding a new Data Base Administrator and meeting the release schedule, followed by improving the income tax data, and implementing the new peer-review system. Other priorities include: fixing the agricultural disaggregation module, and improving the skill labor split and consumption taxes. Details on the skill splits and the proposal for peer-review are provided below. With the loss of Betina Dimaranan we are also considering how external consultants could be better utilized; for example hiring Betina Dimaranan to assist with the pre-processing of the protection data, or Kevin Hanslow to undertake the changes to the commodity tax data in GTAP.

We will also be interested to hear any board member feedback on the improvements made in the GTAP 7 pre-releases: namely the energy price and quantity data, and the bilateral services trade data.

Skills splits

Rod Tyers will be visiting the Center in September. Rod was involved in the original technical paper on the skill shares in 1998 (Technical paper 11). During this time we hope to utilize his skills and update the work on the skill shares.

Proposal for Peer-Review of I-O Tables

Currently our internal review procedures for I-O tables are strong on basics (e.g., requiring that balance conditions hold and non-negativity, etc), but weak on country specifics; and we rarely get feedback from I-O contributors on the final GTAP Data Base. With the support of Robert Koopman and the USITC we are examining ways in which I-O tables can be externally peer-reviewed. We would be interested to hear from any Board Members who are willing to assist as with these reviews.

> 1. To be peer-reviewed by one or two external reviewers upon contribution.
> 2. Reviewer selection
>   i.   Other contributors, acceptable volunteers within the network or recommended parties/individuals outside of the network.
>   ii. Review is not anonymous. Both the reviewer and the contributor are known to each other, unless requested otherwise. Attempts will be made to find a mutually acceptable reviewer or accommodate any other issues (e.g., if the contributor is unable to distribute original data to a reviewer).

      iii.   Benefits: consideration must be given to the benefits to be awarded reviewers. Early access to original I-O tables, or monetary compensation (e.g., a discounted conference rate).

      iv.   In cases where an appropriate reviewer cannot be found, peer-review is not compulsory.

3. Review Process:
      i.   Review is to take place within 4-6 weeks; however, absence of peer-review does not stop the table from being included in the next release of the GTAP Data Base.

      ii.   Emphasis is placed on helpful advice, since contributors are voluntary and review should not discourage contributions. But it should also identify cases where the contribution is not satisfactory.

      iii.   Reviewers obtain access to contributed table and to the I-O table from the GTAP Data Base, in the form of a 2-region (country plus ROW) by 57 commodity aggregation.

      iv.   Reviewer to be given access to original submission and any GTAP reports via the website. Reviewer may also request the GAMS/GEMPACK/excel files developed by the contributor to construct the I-O table.

      v.   Final review to be uploaded to the website once review is finalized. Review to be made available to the public, after Contributor has been given time to respond to the review.

4. Reviewers will also be sought to review the older country data in the GTAP Data Base.
      i.   Since not all tables can be reviewed at once, we propose to select a few for review each year. Selection will be based on GDP, population, age of last contribution and availability of a reviewer. The first on our list is the Hong Kong I-O table; please let us know if you would be willing to review this table or can recommend a colleague.

      ii.   Reports to be posted on the website for GTAP users and potential future contributors. Wherever possible improvements will be made, however in the absence of the original (or a new) contributor major improvements are unlikely.

      iii.   If reviewer advises, the Center may choose to remove a country from the GTAP Data Base.

b. The African Data Base

The African Data Base will be a priority for Badri Narayanan, who will join the Center in late May 2007. Following the Board meeting, Badri's first task will be to work with our external contributors to improve the macro, trade and protection data for the African economies. Nelson Villoria will also be working on the trade data. Following this Badri will work with individual contributors of African I-O tables/SAMs. During our search for scholarship applicants we discovered that a number of people have or are creating SAMs for African countries. While the quality and level of disaggregation are not expected to meet the minimum requirements for the standard GTAP Data Base, we should be able to use entropy techniques to disaggregate existing data. As data is collected these improvements will be used to refine the African Data Base.

V.   Research

Overview of the Research Goal

The research goal contains 3 parts related to the three different areas of research which the Center is pursuing under its strategic plan: Multilateral and Bilateral Trade Agreements, Global environmental issues, Trade and development. Each of these is discussed in turn below.

Multilateral and Bilateral Trade Agreements

Further Develop the Dynamic GTAP Model.

The Dynamic GTAP Model, developed by Elena Ianchovichina and Robert McDougall, emphasizes international capital mobility and tracking cross-country ownership of assets (Technical Paper #17). Next year the focus will be on completing the remaining chapter on developing an environmental model which will be undertaken by Alla Golub and Terrie Walmsley. The final chapters will then be gathered; it is hoped that this book will be sent to the publishers in September.

The model, software, baseline and welfare decomposition are also being improved and a web course will be developed for the Dynamic GTAP course over the next year. We hope to hold the Dynamic GTAP short course every two years. The next course is expected to take place in 2008.

Enhance analysis of labor migration.

The Global migration model and data base (GMig2) is now being utilized by graduate students in their work on India and NAFTA. In addition Terrie Walmsley is currently working with Raul Hinojosa Ojeda (UCLA); Robert McCleery (MIIS), and Fernando De Paolis (MIIS) on a project endogenising labor migration between Mexico and the USA. Terrie Walmsley will present this work at the conference.

Global Environment Issues

In the past year, the Center has significantly increased its research efforts in the area of global climate change policy analysis. Through a joint project with the US Environmental Protection Agency, McGill University (Navin Ramankutty) and Ohio State University (Brent Sohngen), we have focused particular attention on global land use and associated greenhouse gas (GHG) emissions (as well as forest carbon sequestration). Important products of this work include: (a) an edited volume on global land use and climate change (see above), (b) global data bases on land use and non-CO2 GHG emissions, (c) models for utilizing these data bases, and (d) several research papers in this field. The latter have focused on the role of competition in land and product markets on the cost of global efforts to reduce GHG emissons.

In addition, this work has been linked to the dynamic GTAP model in order to analyze the long run determinants of land use, and hence GHG emissions. Special attention is given to specification of consumer demand system, total factor productivity growth in land using sectors and representation of land supply and competition of different sectors for land in the model. Recent work includes revised land rents in forestry sector, intensification in land using sectors and food processing sectors, the possibility of conversion of unmanaged land to land used in production and technical change in the timber using sectors. The later is important in projecting land rents and land endowment used in forestry, and is determined through a link between the dynamic GTAP model and the dynamic forward-looking Global Timber Model of Sohngen and Mendelsohn (2006).

An emerging area of energy and environment work in the Center is focused on biofuels. This work is

being spearheaded by Wally Tyner, and involves both micro- and macro-work on this topic. The GTAP component (proposals to fund this work are currently under review) emphasizes the competition of biomass crops with food crops, as well as the incentives to access new lands through deforestation. As noted previously, the Center also has a small project underway with the OECD to disaggregate liquid biofuels in a specialized version of the GTAP Data Base. Wally Tyner is organizing a special session at this year's GTAP conference on biofuels.

Trade and Development

As noted above, the Center has produced several more papers on the subject of trade and poverty over the past year. One of these applications will be featured in this year's short course. We hope this will facilitate more widespread assessment of poverty impacts of trade policy in GTAP-based analyses.

In related work, Cranfield, Preckel and Hertel have produced a GTAP Working Paper that features a new econometric approach to combining micro- and macro-data in the estimation of consumer demands across the income spectrum, with particular attention paid to the behavior of consumption at very low income levels. Some of these techniques will be brought to bear in a joint project with IFPRI, aimed at assessing the impact of trade and trade policy on nutritional attainment of low income households.

VI. Validation

Overview of the Model Goal

The model goal is to improve understanding and credibility of the GTAP-based models.

The focus in the coming year will be to continue to augment the GTAP parameter file with improved econometric estimates of key behavioral parameters. These include: (a) estimation of a new set of consumer demand elasticities available for the GTAP 7 Data Base, and (b) estimation of love of variety parameters for use with a modified model of monopolistic competition, based on the recently completed dissertation by Adina Ardelean.

Report on the Usage of GTAP

In the Center's strategic plan, undertaken in 2004, one of our goals was to determine usage of GTAP-based papers in refereed journals. Ginger Batta has undertaken a number of searches to set up a baseline to document the impact of GTAP. Three sources have been examined:

1) Econlit: AEA's electronic bibliography of economics literature,
2) IDEAS: a freely available, online bibliographic database dedicated to Economics, and
3) Google Scholar: Google's dedicated engine for searching scholarly literature.

The report is provided in the supplementary materials.

VII. Network

Overview of the Network Goal

The network goal is to increase effective participation in the global network, particularly in developing countries.

Six scholarships have been awarded to individuals who will assist us with I-O tables for the African Data Base, attend the annual short course and a special course on producing GTAP I-O tables. Three from these six will then be selected to undertake research and attend the conference in Helsinki, 2008.

Following the South Asia Short Course in India last year, Dr Sarfraz Ahmad organized an international conference on "Trade Liberalization and SAFTA: Opportunities, Concerns and Challenges". The conference was held at the University of Arid Agriculture in Pakistan in collaboration with the Higher Education Commission (HEC) of Pakistan and the Center for Global Trade Analysis, Purdue University. At the short course, Dr. Ahmad recognized the need for academics and policy makers in Pakistan to learn more about CGE modeling and in particular the GTAP Model and Data Base; which was essentially unknown in Pakistan prior to the conference. The conference was a huge success with a number papers, using both CGE and econometrics techniques to examine the impact of SAFTA on the region. Following the conference we decided to release a South Asia based 10x10 aggregation of the GTAP 6 Data Base to conference participants.

South Asian GTAP Involvement (2005-2007)			
	2005	2006	*2007
Events			
Short Course Participants	0	16	1
Conference Participants	2	4	9
†Conference Submissions	7	12	7
†Conference Presentations	2	2	2
Purchases			
GTAP Data Base	5	1	0
GTAP Network			
New Members	157	63	34

†Figures for GTAP Conference only.
*Figures for 2007 are current through 5/7/2007.

Over the last few years we have been able to fund participation in the course of people from South America, South Asia and, this year, Africa; this has been very successful. There is a lot of interest in scholarships and we would be very pleased to hear if you know of individual scholarships or funding opportunities for such courses which we could refer applicants to.

Last year, after holding the conference in Ethiopia, the course in South Asia and the new pricing policy, developing country participation in the GTAP Network increased significantly.

	2005	2006	Change
Total members in GTAP Network	4,172	5,017	+20%
Developed Countries	2,982	3,480	+17%

Lower-Middle Income Countries	670	827	+23%
Lower Income Countries	520	710	+37%
Total number of countries represented	128	140	+9%

Academic Committee

At last years board meeting Alan Powell, on behalf of Joseph Francois, put forth a proposal aimed at formalizing the current Board Member at-large positions into an "Academic Committee". Further details can be obtained on the website:

https://www.gtap.agecon.purdue.edu/events/Board_Meetings/2006/documents/AcademicCommittee.pdf

This proposal was ratified at the 2006 board meeting in Addis Ababa. This year the board will consider potential applicants for this Academic Committee. If you would like to nominate someone, please send us their name/s and a statement of support. Our aim is to obtain up to 5 representatives from academia. Diversity (across regions and interests) is preferred. This will be discussed further at the board meeting.

Research Fellows

Antoine Bouët will report on the committee's decisions at the board meeting. The committee includes Patrick Jomini (Chair), Antoine Bouët, Betina Dimaranan, and John Reilly. Kavitha Muthuraman and Ginger Batta provide support in collecting CVs and providing an online forum, respectively. The CVs of the research fellows are included in the supplementary material in your folder and on the website.

Conference Proposals

Purdue 2007

Thomas Hertel and Terrie Walmsley will give the board a final update on the June conference to be held immediately following the board meeting. A copy of the conference program is available on the web.

Finland 2008

Juha Honkatukia will present an update on preparations for the 2008 conference at the board meeting. This event will be hosted by the VATT and UN-WIDER in Finland. A copy of the proposal is contained in the supplementary materials.

Chile 2009

In March, 2007, the board approved the proposal from the UN Economic Commission for Latin America and the Caribbean and the Inter-American Development Bank to hold the 12th Annual Conference on Global Economic Analysis in Santiago, Chile.

Potential Conference Venues for 2010 and 2011

Proposals for the 2010 conference are due in December of this year and will be circulated early in 2008 for board discussion and approval. Currently there is strong interest from FEEM in Venice and the IDE in Japan. Due to scheduling conflicts with the University, FEEM (directed by Carlo Carraro – a plenary speaker at our 2004 Washington conference) would require that the conference dates be temporarily shifted to mid-July. The board needs to determine whether this is acceptable before they invest time in

development of a proposal. The IDE would be interested in hosting the event somewhere in Southeast Asia. The Asian Development Bank and the UN Economic Commission for Asia and the Pacific, located in Bangkok, have also expressed interest in hosting the annual conference. Board Members are encouraged to approach other institutions with capacity and interest in hosting the annual conference. As always, we are particularly interested in bringing the conference to new parts of the world.

New Technical and Working Papers

Technical Papers

GTAP-M: A GTAP Model and Data Base that Incorporates Domestic Margins by Everett Peterson, GTAP Technical Paper No. 26, 2006

Working Papers

Distributional Effects of WTO Agricultural Reforms in Rich and Poor Countries by Thomas Hertel, Roman Keeney, Maros Ivanic and Alan Winters, GTAP Working Paper No. 33, 2006

Poverty Analysis Using an International Cross-Country Demand System by John Cranfield, Paul Preckel, and Thomas Hertel, GTAP Working Paper No. 34, 2006

Productivity Growth and Convergence in Crop, Ruminant and Non-Ruminant Production: Measurement and Forecasts by Carlos Ludena, Thomas Hertel, Paul Preckel, Kenneth Foster and Alejandro Nin Pratt, GTAP Working Paper No. 35, 2006

The Role of Global Land Use in Determining Greenhouse Gases Mitigation costs by Thomas Hertel, Huey-Lin Lee, Steven Rose and Brent Sohngen, GTAP Working Paper No. 36, 2006

Why Isn't the Doha Development Agenda More Poverty Friendly? By Thomas Hertel, Roman Keeney, Maros Ivanic and Alan Winters, GTAP Working Paper No. 37, 2007

Research Memoranda

Comparing Tax Rates Using OECD and GTAP 6 Data by Angelo Gurgel, Gilbert Metcalf and John Reilly, GTAP Research Memorandum No. 07, 2006

Introducing Forest Access Cost Functions into a General Equilibrium Model by Christophe Gouel and Thomas Hertel, GTAP Research Memorandum No. 08, 2006

The GTAP Website Report

The website report is contained in the supplementary materials provided in your folder and on the board website.

Working Committees

A number of working committees or expert groups were established at the 2006 board meeting.

Services Committee

Working committee to examine the bilateral services trade data (raw and once incorporated into the GTAP 7 Data Base) and report back to the board next year.

The services trade data is expected to be incorporated into pre-release 2 of the GTAP Data Base in May. Robert McDougall will report on the process at the Board meeting.

Wearing Apparel and Textiles Committee

Working committee to a) report to the board next year on the results of using the SplitCom facility to address the textiles/wearing apparel classification problem and b) advise the board on the importance of the issue to the quality of the GTAP Data Base.

No progress has been made on this issue.

Energy Data Committee

Assist with checking the GTAP 6E Data Base and discuss experiences with updating energy price data.

Robert McDougall will be presenting progress in the energy data at the board meeting. The energy data is expected to be incorporated into pre-release 2 of the GTAP Data Base.

Expert Trade working committee

Implement a strategy for the continued production of the trade data for the GTAP Data Base. Committee members would consist of those individuals willing to contribute time and energy into specific aspects of the trade data and hence assist Mark Gehlhar in producing the final reconciled version of the trade data. This committee would compare the trade data produced by Mark Gehlhar with other trade data from CEPII and with the IMF totals.

Mark Gehlhar is leading a special session at the GTAP conference to discuss some of the issues in reconciling the trade data.

Trade Users working committee

This committee would address issues of methodology and replicability trade data reconciliation procedures.

Robert Koopman has been working with Mark Gehlhar, Lionel Fontagné, and Zhi Wang to examine the methodological and replicability of the trade data reconciliation process. Robert Koopman and Mark Gehlhar will be presenting progress in this regard at the board meeting.

Funding Committee

This committee will examine long-term funding sources for GTAP. Initial attention will be focused on foundations interested in enhancing developing country participation in the global trading system. The main concrete progress that we have made this year in this area has been through the African data base project. As noted elsewhere in this report, funding was obtained from the European Commission and from the BNPP fund at the World Bank to support an enhanced data base and training for African economists. The project was top-ranked in the highly competitive BNPP selection process. We hope that this may serve as a model for future projects aimed at specific regions/groups of developing countries.

As noted previously, another new opportunity has emerged on the horizon. The European Commission recently included in its FP7 a request for proposals for a European focused database for modeling. A copy of the proposal request is provided in the supplementary materials for this board meeting. The Center has indicated that it would be very interested in supporting the European Board Members to develop a proposal. One method of collaboration might be to submit parallel proposals to national science foundations in other parts of the world.

VIII. Education

Overview of the Education Goal

The education goal is to expand and improve global economic analysis education worldwide (both within and outside the network).

1. *Promote Learning Among Data Base Contributors.*

2. *Use Workshops and Web-Based Products to Provide Specialized Learning.*

3. *Improve Communication, Learning, and Transfer Of Knowledge Within the Center.*

4. *Improve Marketing of GTAP Courses.*

Upcoming Courses and Plans

The 15th Annual Short Course in Global Trade Analysis will be held at Purdue University, West Lafayette, IN, USA August 4-10, 2007. 33 participants are expected to attend the course. It is shaping up to be a very successful course.

Following the annual short course, a two day course on data will be held. The course will be based on Monash Data Course and will be led by Mark Horridge. If successful, we hope that this course will be the first of a number of such courses aimed at assisting I-O table contributors. This 2 day course is currently intended for the six African participants who have received scholarships and other invited short course participants. Board members interested in this course should contact Terrie Walmsley.

IX. Finances, Budgets and Staffing Plan

Budgeting

To be handed out and discussed at the board meeting.

Staffing Plan

To be handed out and discussed at the board meeting.

X. Appendices

Appendix 1: List of potential issues for the discussion during the session on "Data Base and Research Issues". Obviously we won't have time to discuss all of these, but this is a list of important issues that have come up over the past year and may be of interest to the board.

Research Goal:

- Dynamic GTAP Model
- consumer demand in GTAP
- the GTAP Baseline
- labor migration
- land use data base and modeling
- bio fuels
- trade and development
- poverty analysis
- adjustment costs
- services liberalization and FDI

Data Goal:

- energy
- services
- trade
- protection
- taxes
- regional disaggregation
- quality comparisons of inputs
- quality comparisons of the final data base (FIT statistics)
- factor splits
- the facility for disaggregating commodities (SplitCom)
- TradMat Proposal
- Weighting schemes for protection data
- matching IMF trade totals
- CEPII trade data
- data sourcing
- releasing the data base in GAMS format
- intra-regional trade
- wearing apparel

- Peer-review of I-O tables
- data management issues
- multi-year data bases

Model Goal:

- validation exercises
- parameter estimation
- terms of trade effects in GTAP

Education Goal:

- GAMs courses
- Further overseas courses
- Data Base courses

Network Goal:

- pricing policies
- developing country plan
- scholarships

Appendix 2: A Brief History of the Development of the GTAP Data Base

The GTAP Data Base consists of bilateral trade, transport, and protection matrices that link individual country/regional economic data bases. The regional data bases are derived from individual country input-output tables, from varying years.

The GTAP 1 Data Base relied exclusively on I-O tables inherited from the Australian Industry Commission's SALTER project. For this reason, GTAP adopted the SALTER concordance that identified 37 sectors/commodities.

In GTAP 3 Data Base, 12 of the 24 national data bases still traced their roots back to the Industry Commission's SALTER project. Of course they were updated for each new release using the FIT program[3]. These I-O tables were heavily concentrated in the Pacific Rim, reflecting SALTER's focus on APEC issues.

Six of these twelve SALTER inherited regions were updated in version 4 (New Zealand, China, Indonesia, Thailand, Taiwan, and Canada). In addition to these updates, version 4 featured updates of four more existing regional data bases, as well as entirely new data bases for 14 countries (Vietnam, Sri Lanka, Venezuela, Colombia, Uruguay, UK, Germany, Denmark, Sweden, Finland, rest of EU, Turkey, Morocco and South Africa). In version 4 the number of sectors was also expanded to 50 to include more agricultural sectors. A special project on energy and climate change led to the creation of the first GTAP Data Base with improved treatment of energy and carbon emissions. The result was the GTAP-E Data Base.

Version 5 updated 16 national data bases (Australia, China, Japan, Korea, Taiwan, Vietnam, India, Colombia, United States, United Kingdom,) and added 23 more countries (including 15 EU countries, 7 Southern African countries and Bangladesh). A system of interim releases was also established to allow new I-O tables to be incorporated into the Data Base as they were contributed. During these interim releases no changes were to be made to the macro data, the only difference would be the disaggregation of a region to incorporate the new country I-O data. Interim releases of version 5 have added 13 more countries in Central and Eastern Europe, Albania, Russia, Malaysia, the Philippines, Singapore, Indonesia and Thailand. This leaves Hong Kong as the last remaining I-O table inherited from SALTER. Since there is no actual I-O table in existence for Hong Kong, this had to be "fabricated" by SALTER staff, we may wish to contemplate a change in the treatment of Hong Kong in the future – possibly re-estimating this I-O table, or eventually combining Hong Kong with China. In version 5 the number of sectors was further increased to 57, this time services were disaggregated. The treatment of energy was also further improved and incorporated into the primary GTAP Data Base.

In version 6, 2 new countries were added, Madagascar (pre-release 2) and Tunisia (pre-release 3), and 11 other I-O tables were updated (Argentina, Australia, New Zealand, Singapore, India, Colombia, Brazil, Korea, The Netherlands, Turkey and Taiwan). All of these updated I-O tables are significant improvements on previous contributions in terms of a more recent I-O table being used or in the case of Singapore additional external data being used to disaggregate. In version 6.1, 6 new I-O tables were included for Nigeria, Pakistan, Bolivia, Ecuador, Iran and Mauritius. With the exception of the IDE tables, the original I-O tables are all available to consortium members on the GTAP website.

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[3] The FIT program lies at the heart of the GTAP Data Base construction process. FIT uses entropy theoretic methods to update and create a consistent data base, where all the data - Input-output tables, trade, protection, macro and energy - are consistent with each other. It is this consistency which is the core value-add of the GTAP Data Base.

The remaining 18 regions in the 87 regions of GTAP 6 Data Base are made up of composite data bases representing groups of countries. In light of recent requests the number of composite regions was increased in version 6 to allow for more accurate analysis of regional free trade agreements. As a result the 10 old composite regions have been sub-divided into 18 new composite regions.

The tariff data for the GTAP 6 Data Base also changed significantly in terms of sourcing, coverage, nature and quality, and data processing. In version 5 of the GTAP Data Base, agricultural tariffs and merchandise tariffs were obtained from the two separate sources. Agricultural tariff data were obtained from the Agricultural Trade Policy Database which is based on the Agricultural Market Access Database (AMAD) while data on merchandise tariffs were obtained from the World Bank and UNCTAD through an early version of the World Integrated Trade Software (WITS). In version 6 the tariff data was obtained from the Market Access Maps (MAcMap) data base contributed by the Centre d'Etudes Prospectives et d'Information Internationales (CEPII). The MAcMap data base is compiled from UNCTAD TRAINS data, country notifications to the WTO, AMAD, and from national customs information.

The GTAP 7 Data Base cycle has begun and the first pre-release of the GTAP 7 Data Base was made available in April 2007. The GTAP Data Base pre-releases are released only to GTAP Consortium member agencies and data contributors as the Center continues to incorporate updated international datasets (macroeconomic data, bilateral trade data, protection datasets, energy data) for the same reference year. Each pre-release data base is intended for scrutiny, evaluation, and feedback from users to help improve the quality of data that will be incorporated in the next pre-release.

The GTAP 7 Data Base has a 2004 reference year, and divides global economic activity into 101 regions and 57 sectors. The first pre-release (GTAP 7pre1) incorporates 2004 data on macroeconomic aggregates, merchandise trade, tariffs, agricultural domestic support, agricultural export subsidies, and the export tax equivalent of quotas on textiles and apparel under the ATC.

A number of new I-O tables have been incorporated since the 87 regions of the GTAP 6 Data Base. These include Pakistan, Bolivia, Ecuador, Iran, Mauritius and Nigeria (added in GTAP 6.1); Cambodia, Paraguay, Egypt, and Senegal (added in GTAP 6.2); and Nicaragua, Kazakhstan, and Kyrgyzstan (added in GTAP 7pre1). The pre-release data base also includes updated I-O tables for Australia, China, Indonesia, Vietnam, United States, Mexico, Bolivia, Chile, and Turkey.