GTAP Advisory Board Report
June 2023 – May 2024

Prepared by:

Center for Global Trade Analysis
Department of Agricultural Economics
Purdue University

Message from the Director

Dominique van der Mensbrugghe

Director of GTAP

Dear GTAP Advisory Board Members,

We look forward to holding this year's annual GTAP Advisory Board Meeting in the lovely foothills of the Rocky Mountains and we are most grateful to our local host, Colorado State University, and in particular Amanda Countryman, who has greatly facilitated this year's board meeting and conference. We anticipate significant attendance at both events.

This past year has seen the public release of the GTAP 11 Data Base, which has had significant uptake throughout the GTAP Network. The release includes two minor updates to correct inconsistencies identified by board member agencies, as well as by other users. Most of the satellite accounts have also been released—including the power and emission databases that are heavily used by the integrated assessment community. We have also been working with the latter (i.e., the Integrated Assessment Modeling Consortium, or IAMC) to provide a GTAP compatible version of the updated Shared Socio-Economic Pathways (SSPs). The SSPs provide the core drivers for much of the work on the economics of climate change. The updated SSPs replace the 2013 release, which relied on historical trends through 2010. The latest SSP release relies on historical trends through 2022 and the near-term forecasts of the IMF through 2027. In addition, we have two projects on GTAP Data Base extensions. One new version will have a focus on critical minerals (such as lithium) and products deemed essential for the transition to a carbon-free economy—such as batteries, solar panels and electric vehicles. The second extension focuses on the livestock sectors, which will be substantially revised in collaboration with colleagues at Cornell University. There is also ongoing work to incorporate fertilizers in the *circular economy* version of the data base. Finally, we anticipate imminently the first pre-release of GTAP 12, which will include a new 2019 reference year with a number of updates (e.g., macroeconomic data, merchandise trade, energy data, among others), and incorporates new and updated input-output tables for several countries.

This past year has seen consolidation of a number of modeling projects that were mentioned in last year's letter. First is the development of GTAP-IAM—that is designed to support integrated assessment modeling by the broader GTAP community. A second important development is GTAP-SR, a version of the standard GTAP Model that integrates sub-regions. We continue to work with the WiNDC Consortium at the University of Wisconsin to integrate the 50 U.S. states (plus the District of Colombia) into the GTAP Data Base and GTAP-SR, and are happy to help board members that are interested in implementing GTAP-SR for their own country. A third foundational development is GTAP-in-R which is an R-based implementation of the GTAP Model coded in TABLO. We are grateful to the numerous board members who have provided extra financial support for these projects.

The other activities of the Center continue unabated. The first issue of the 9th volume of the *Journal for Global Economic Analysis* is scheduled for publication in June, and we are close to finalizing the venues for the annual conferences through 2027. We are still looking for board feedback on possible changes to the scheduling of onsite meetings post-2027 (our 30th annual conference!). In addition, GTAP-U courses continue to be popular, and we anticipate new offerings in the coming year. We just finished holding the SIMPLE-G Short Course, which had a four-week online phase, followed by one-week residential learning at Purdue University, and was attended by 18 participants from Europe, Latin America, Asia, and the U.S. By undertaking economic modeling at the grid cell level, SIMPLE-G has opened numerous opportunities for interdisciplinary collaborations on a wide range of issues relating to the world's land and water resources. The NSF-funded GLASSNET effort is also promoting such collaborations between the GTAP community and other global research networks in an effort to address the sustainability challenges of the 21st century.

We are also in the midst of some changes at the Center. The first change is to identify my replacement. The initial search proved to be inconclusive, and we are actively reaching out to individuals to gauge interest in this exciting and important position. We will be engaging with you during the board meeting to collect further ideas. Purdue University has made GTAP a top priority in the coming year, and the administration has asked me to continue as Director until the summer of 2025, which I have accepted. The second significant development in the Center is the move to set up a European branch of the Center. We have had enthusiastic support from many of you, as well as from Purdue's senior management. However, at this moment, we are awaiting Purdue's development office to prepare a business plan that conforms to Purdue's legal and fiduciary requirements.

I, and the Center's staff, are looking forward to engaging with you during the two-day board meeting. I have had the opportunity over the last 12 months to engage with many of you on a bilateral basis, but there is nothing like the intensity of the board meeting to set out the goals for the next year. Many thanks to each of you for your support of our vibrant community.

Sincerely,

Dominique van der Mensbrugghe, PhD
Research Professor and Director of GTAP
Center for Global Trade Analysis, Purdue University

Contents

Executive Summary

Key Accomplishments

The list below highlights key accomplishments by the Center for Global Trade Analysis towards goals established during last year's GTAP Advisory Board Meeting.

Data Goal
- Two GTAP 11 updates released to the board and subscribers
- GTAP 12 pre-release 1 expected before board meeting
- Work on satellite extension data sets continuing for release to the board and subscribers

Research Goal
- *Journal of Global Economic Analysis* two releases in 2023, two expected in 2024
- Center's research project portfolio remains active and diverse
- SIMPLE-G book to be published by Springer

Model Goal
- Ongoing work to develop/extend the GTAP-SR, GTAP-HS-TRQ, GTAP-HET, and SIMPLE-G models

Education Goal
- GTAP 101 Courses (2 offerings, 35 graduates)
- GTAP Short Course (1 offering, 25 graduates)
- GTAP Dynamic Short Course (1 offering, 10 graduates)
- GTAP PTA Course (not offered in 2023, curriculum update underway)
- GTAP-HET Course (not offered in 2023, curriculum update underway)
- SIMPLE-G Short Course (1 offering, 18 graduates)
- Private Paraguay GTAP Short Course (12 trainees, onsite portion of course cancelled)
- New course development (GTAP-E-Power, GTAP for non-Economists, GTAPinR)
- Ongoing curriculum review and updates

Staffing Goal
- Maksym Chepeliev hired as Research Assistant Professor
- Continue search for new Research Professor/Director
- Erwin Corong appointed as Associate Director
- Hire new Research Economist
- Continue to explore feasibility of GTAP European office

Collaboration Goal
- 2024 GTAP Advisory Board Meeting and Conference (Fort Collins, Colorado, USA)
- 2025 GTAP Advisory Board Meeting and Conference (Kigali, Rwanda)
- 2026 GTAP Advisory Board Meeting and Conference (Kyoto, Japan)
- GTAP Virtual Seminar Series (3 seminars, 335 attendees)

Communication Goal
- GTAP web server migrated to shared Purdue server for increased security
- Revamping and extending website FAQs
- Work underway to move JGEA OJS software to new server

GTAP Advisory Board Meeting Agenda

Monday, June 3
Colorado State University, Lory Student Center (Rm 302 – Longs Peak)
1101 Center Avenue Mall, Fort Collins, Colorado 80521 USA

Time	Agenda
8:30-9:00am	**Welcome Coffee** (Rm 302 – Longs Peak)
9:00-10:30am	**Welcome and Overview** (Chair: Heleen Bartelings)
	9:00-9:30 **Meeting Overview** (Dominique van der Mensbrugghe)
	9:30-10:00 Discussion
	10:00-10:10 **GTAP Data Base** (Angel Aguiar)
	10:10-10:30 Discussion
10:30-11:00am	**Break** (Rm 302 – Longs Peak)
11:00am-12:20pm	**GTAP Data Base: Component Updates** (Chair: Andrew Schreiber)
	11:00-11:10 **Circular Economy, Critical Minerals** (Maksym Chepeliev)
	11:10-11:20 Discussion
	11:20-11:30 **GTAP-BIO and NTMs and Forward-Looking Tariffs** (Erwin Corong)
	11:30-11:40 Discussion
	11:40-11:50 **GTAP-LVS** (Alla Golub)
	11:50-12:00 Discussion
	12:00-12:10 **Emission Multipliers** (Maksym Chepeliev)
	12:10-12:20 Discussion
12:20-1:30pm	**Lunch** (Rm 304/306)
1:30-2:30pm	**Education and Outreach** (Chair: Janine Pelikan)
	1:30-1:45 **GTAP-U** (Zeynep Akgul)
	1:45-1:55 Discussion
	1:55-2:05 **GLASSNET** (Thomas Hertel)
	2:05-2:10 Discussion
	2:10-2:15 **Journal of Global Economic Analysis** (Thomas Hertel)
	2:15-2:20 Discussion
	2:20-2:25 **CGTA Graduate Students** (Thomas Hertel)
	2:25-2:30 Discussion
2:30-3:00pm	**Break** (Rm 302 – Longs Peak)
3:00-4:00pm	**New Developments at the Interface of Data and Modeling** (Chair: William Powers)
	3:00-3:10 **Predicting Modal Split in Freight Transport** (Bernhard Dalheimer)
	3:10-3:20 Discussion
	3:20-3:30 **Emerging Applications of Machine Learning to Data Analysis** (Diego Cardoso)
	3:30-3:40 Discussion
	3:40-3:50 **Real-time Trade and Supply Chains** (Peter Swartz)
	3:50-4:00 Discussion
4:00-5:00pm	**Parking Lot** (Chair: Przemyslaw Kowalski)
	4:00-4:15 **Reconciling COMTRADE Data for GTAP** (Mark Gehlhar)
	4:15-4:25 Discussion
	4:25-4:40 **Reconciling COMTRADE Data for BACI** (Houssein Guimbard)
	4:40-4:50 Discussion
	4:50-5:00 **Summary and Discussion** (Hugo Rojas-Romagosa)
7:00pm	**Dinner** (Ginger and Baker, Mill Top Room, 359 Linden Street, Fort Collins, CO 80524)

GTAP Advisory Board Meeting Agenda

Tuesday, June 4
Colorado State University, Lory Student Center (Rm 302 – Longs Peak)
1101 Center Avenue Mall, Fort Collins, Colorado 80521 USA

Time	Agenda
8:30-9:00am	**Welcome Coffee** (Rm 302 – Longs Peak)
9:00-9:30am	**Guest Speaker** (Chair: Shantong Li)
	9:00-9:20 **"EAT-Lancet and Sustainable Diets"** (Mario Herrero)
	9:20-9:30 Discussion
9:30-10:30am	**GTAP Network** (Chair: Jan Schmitz)
	9:30-9:40 **GTAP Research Fellows** (Janine Pelikan)
	9:40-9:50 Discussion and Vote
	9:50-9:55 **2024 Conference** (Amanda Countryman)
	9:55-10:05 Discussion
	10:05-10:10 **2025 Conference** (Ginger Batta)
	10:10-10:25 Discussion
	10:25-10:27 **2026 Conference** (Ginger Batta)
	10:27-10:30 Discussion
10:30-11:00am	**Break** (Rm 302 – Longs Peak)
11:00-11:30am	**GTAP Initiatives** (Chair: Stephen Karingi)
	11:00-11:10 **GTAP Science Council** (Joseph Francois)
	11:10-11:20 Discussion
	11:20:11:25 **Regional Workshops** (Ginger Batta)
	11:20-11:30 Discussion
11:30am-12:30pm	**New Developments at the Interface of Data and Modeling** (Chair: Aikaterini Kavallari)
	11:30-11:50 **Estimating heterogenous effects of non-tariff liberalisations: a gravity-difference-in-difference approach** (Marta Paczos/Ben Fraser)
	11:50-12:00 Discussion
	12:00-12:15 **Reconciling NQTM and CGE** (Eddy Bekkers)
	12:15-12:30 Discussion
12:30-2:00pm	**Lunch** (Rm 304/306)
2:00-2:45pm	**Priorities for Forthcoming Year** (Chair: Will Martin)
	2:00-2:05 **Center Finances** (Dominique van der Mensbrugghe)
	2:05-2:15 Discussion
	2:15-2:30 **Revisit Priorities for Next Year** (Dominique van der Mensbrugghe)
	2:30-2:45 Discussion
2:45-3:30pm	**Additional Meetings:** (Chair: Lulit Mitik Beyene)
	2:45-3:20 **SIMPLE-G: Developments and Links to GTAP** (Thomas Hertel, Jing Liu, Iman Haqiqi)
	3:20-3:30 Discussion
3:30-5:00pm	**Early Conference Check-in** (Lory Student Center, 3rd Floor Lobby) We encourage those registered for the conference to stop by the registration desk during this time to collect conference materials and avoid the line Wednesday morning.

About GTAP

Improving the quality of quantitative analysis of global economic issues within an economy-wide framework

Global Trade Analysis Project

What is GTAP?

The Global Trade Analysis Project (GTAP) is a network of researchers and policy makers conducting quantitative analysis of international policy issues, with the goal of improving the quality of quantitative analysis of global economic issues within an economy-wide framework. Founded in 1992 by Thomas W. Hertel, GTAP has become the common "language" for conducting analysis of global policy issues, leading to GTAP-based results being influential in decision making around the world in trade, climate change, energy, and the environment.

Who is GTAP?

The Global Trade Analysis Project is coordinated by the Center for Global Trade Analysis, which is housed in the Department of Agricultural Economics at Purdue University.

GTAP is truly a global project with over 29,600 network members worldwide representing 179 different countries. The GTAP Network is intended to ease the transfer of skills and knowledge, foster the exchange of ideas among the applied general equilibrium community, and improve collaboration and encourage joined projects.

What does GTAP offer?

The centerpiece of the Global Trade Analysis Project is the GTAP Data Base, a global data base describing bilateral trade patterns, production, consumption, and intermediate use of commodities and services. The GTAP Data Base is utilized by thousands worldwide and is a key input into contemporary applied general equilibrium analysis of global economic issues.

The underlying framework for the theory and structure for analysis come from two global general equilibrium models, the Standard and Dynamic GTAP Models, which are developed and maintained by the Center for Global Trade Analysis.
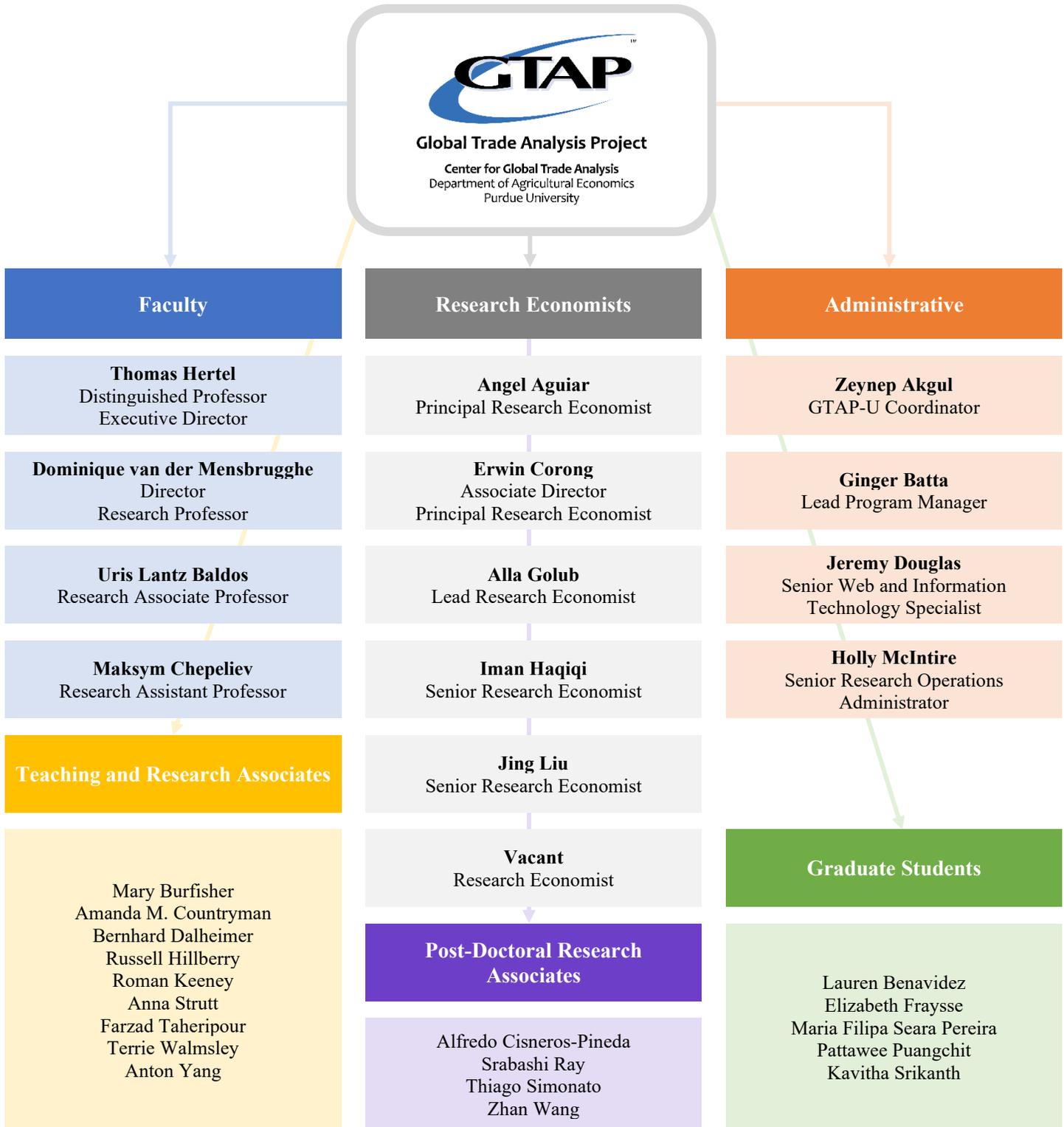
The Center for Global Trade Analysis also offers events and courses to help promote GTAP-based research, education, collaboration, and outreach, many of which have led to tens of thousands of citations to various GTAP-based research on Google Scholar. In addition, the Center also publishes the *Journal of Global Economic Analysis*, which provides an open access, peer-reviewed platform for publication and dissemination of innovations concerning applied general equilibrium modeling.

About GTAP

Center for Global Trade Analysis

GTAP is coordinated by the Center for Global Trade Analysis, which was founded in 1992 by Thomas Hertel and is housed in the Department of Agricultural Economics at Purdue University.

Global Trade Analysis Project
Center for Global Trade Analysis
Department of Agricultural Economics
Purdue University

Faculty

Thomas Hertel
Distinguished Professor
Executive Director

Dominique van der Mensbrugghe
Director
Research Professor

Uris Lantz Baldos
Research Associate Professor

Maksym Chepeliev
Research Assistant Professor

Teaching and Research Associates

Mary Burfisher
Amanda M. Countryman
Bernhard Dalheimer
Russell Hillberry
Roman Keeney
Anna Strutt
Farzad Taheripour
Terrie Walmsley
Anton Yang

Research Economists

Angel Aguiar
Principal Research Economist

Erwin Corong
Associate Director
Principal Research Economist

Alla Golub
Lead Research Economist

Iman Haqiqi
Senior Research Economist

Jing Liu
Senior Research Economist

Vacant
Research Economist

Post-Doctoral Research Associates

Alfredo Cisneros-Pineda
Srabashi Ray
Thiago Simonato
Zhan Wang

Administrative

Zeynep Akgul
GTAP-U Coordinator

Ginger Batta
Lead Program Manager

Jeremy Douglas
Senior Web and Information
Technology Specialist

Holly McIntire
Senior Research Operations
Administrator

Graduate Students

Lauren Benavidez
Elizabeth Fraysse
Maria Filipa Seara Pereira
Pattawee Puangchit
Kavitha Srikanth

About GTAP

In addition to the Center for Global Trade Analysis staff, GTAP relies heavily on a global network of CGE modelers and trade economists. These collaborators provide data and modeling expertise to help foster the Center's mission and goals.

Center Mission
To provide leadership in economic policy analysis by fostering collaboration to achieve better data and research outcomes.

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 and improves the quality of analysis undertaken.
- 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 policy insights.
- Avoiding duplication in data production is efficient.
- Collaboration enhances individual efforts.
- Having more trained users enriches policy debates.

Center Goals
- **Data Goal:** To improve the quality of data products through:
  - improving the quality of contributed I-O data
  - addition and improvement of other datasets
  - monitoring of data quality using comparison programs
  - version control and documentation

- **Research Goal:** To actively participate in quantitative economic analysis of pressing global concern in the areas of trade and development and global environmental issues

- **Model Goal:** To promote further development of GTAP-based models

- **Education Goal:** To expand and improve education for global economic analysis worldwide

- **Staffing Goal:** To actively seek and encourage talented staff and graduate students

- **Collaboration Goal:** To actively seek opportunities for fostering collaboration with institutions around the world

- **Communication Goal:** To facilitate communication amongst members of the network as well as between the Center and key stakeholders

GTAP Consortium and Advisory Board

GTAP Consortium

Guidance and base-level support for the Global Trade Analysis Project is provided by the GTAP Consortium, which unites members from government agencies, international institutions, the private sector, and academia. Members of the consortium are represented on the GTAP Advisory Board, which advises the Center for Global Trade Analysis on matters of policy, research and funding.

Consortium Agency	Board Representative	Meeting Attendee
Asian Development Bank	Jong Woo Kang	Jong Woo Kang
Centre d'Etudes Prospectives et d'Information Internationales	Lionel Fontagné	Houssein Guimbard
Department for Environment, Food and Rural Affairs	Mike Bourne	*Not represented*
Department for Business & Trade	Catherine Milot	Marta Paczos
Development Research Center of the State Council	Shantong Li	Shantong Li
Economic and Social Research Institute, Cabinet Office	Susumu Suzuki	Susumu Suzuki
Economic Research Institute for ASEAN and East Asia	Lurong Chen	Lurong Chen
Economic Research Service, US Department of Agriculture	Jayson Beckman	Maros Ivanic
European Commission - DG Trade	Lars Nilsson	Jan Schmitz
European Commission - Joint Research Centre	Matthias Weitzel	Matthias Weitzel
Food and Agriculture Organization of the United Nations	Aikaterini Kavallari	Aikaterini Kavallari
Global Affairs Canada	Shenjie Chen	Shenjie Chen
Infinite-Sum Modeling	Badri Narayanan	Badri Narayanan
Inter-American Development Bank	Paolo Giordano	Paolo Giordano
International Food Policy Research Institute	Will Martin	Will Martin
International Monetary Fund	Hugo Rojas-Romagosa	Hugo Rojas-Romagosa
International Trade Centre	Mondher Mimouni	*Not represented*
KPMG International Services Limited	Matthew Weston	*Not represented*
KPMG LLP (US)	John Pacilio	*Not represented*
McKinsey & Company, Inc.	Jeffrey Condon	*Not represented*
MIT Joint Program on the Science and Policy of Global Change	Sergey Paltsev	Sergey Paltsev
National Graduate Institute for Policy Studies	Kenichi Kawasaki	*Not represented*
Organisation for Economic Co-operation and Development	Przemyslaw Kowalski	Przemyslaw Kowalski
The World Bank	Maryla Maliszewska	Lulit Mitik Beyene
Thünen Institute of Market Analysis	Janine Pelikan	Janine Pelikan
United Nations Conference on Trade and Development	Ralf Peters	Ralf Peters
UN Economic and Social Commission for Western Asia	Mohamed Abdelbasset Chemingui	Mohamed Abdelbasset Chemingui
United Nations Economic Commission for Africa	Stephen Karingi	Stephen Karingi
US Department of Commerce	Chris Rasmussen	Natalie Soroka
US Environmental Protection Agency	Andrew Schreiber	Andrew Schreiber
US International Trade Commission	William Powers	William Powers
Wageningen Economic Research	Hans van Meijl	Heleen Bartelings
World Trade Organization	Eddy Bekkers	Eddy Bekkers
Member at Large (Software/Modeling Community)		Michael Jerie
Member at Large (Environment/Sustainability Community)		*Not represented*
Member at Large (Trade/Globalization Community)		Anna Strutt

Center Goals: Previous Year Progress Updates

Data Goal
To improve the quality of data products through improving the quality of contributed I-O data, adding and improving other datasets, monitoring data quality using comparison programs, and versioning control and documentation

Tasks	Responsibility
Primary Priorities	
Maintain pre-release schedule of GTAP 12	**Aguiar**
Released 2 corrections to GTAP 11, 11a and 11b, which were made available to the public. Worked on first pre-release of GTAP 12 for discussion at Board Meeting.	
GMig and work with IO table contributors	**Aguiar**
Completed the migration extension, this time with 5 labor categories. In terms of IOTs, worked with 4 new countries: Angola, Burundi, Mauritania and Sao Tome and Principe. Also, updated United Kingdom, Mauritius, Saudi Arabia, Jordan, United Arab Emirates, Oman, Azerbaijan, DR Congo, Nigeria.	
Power extension	**Chepeliev**
GTAP Power 11 Data Base extension with additional improvements has been publicly released. New features are documented in the JGEA 8(2) article.	
Land use extension	**Baldos, Corong**
The GTAP-AEZ v11B Satellite database is scheduled for release before the GTAP Board Meeting and Annual Conference. Incorporating the AEZ data construction routine into the GTAP data build will be implemented during the GTAP v12 data cycle.	
GDyn Data Base	**Golub**
GDyn Data Base consistent with the GTAP 11b Data Base is produced and available to the public.	
GTAPAgg3	**Corong, Horridge**
All backend programs underlying the new GTAPAgg3 data aggregation software are complete. Development of GTAPAgg3's user-interface is underway with a version ready for testing before the end of the year.	
Mainstream GTAP-BIO	**Taheripour, Chepeliev, Aguiar, Sajedinia**
Work is ongoing on streamlining the GTAP 11 BIO Data Base construction process based on the GTAP Power 11 database.	
Mainstream/update circular economy database for GTAP	**Chepeliev**
GTAP 11 Circular Economy (CE) Data Base will be made available to the Board prior to the Board meeting. The database will include additional splits of cement and fertilizer (N, P, K) in addition to the sectoral splits presented in the GTAP-CE 10 Data Base.	
Merchandise trade	**Gehlhar, Aguiar**
Awaiting submission by contributor for GTAP 12, this is 2019 reference year.	

Tasks	Responsibility
Nutritional accounts and food loss and waste data for GTAP 11	**Chepeliev, Gatto**
GTAP 11 nutritional accounts have been released to the public as a part of the standard GTAP Data Base.	
Non-Tariff Measures	**Corong, Nicita**
GTAP 11 Non-tariff Measures Satellite Data Base	
Forward Looking Tariffs	**Corong, Pichot**
GTAP 11 Forward Looking Tariffs Satellite Data Base	
Tariff data	**Pichot, Aguiar**
Awaiting submission by contributor for GTAP 12, this is 2019 reference year.	
Secondary Priorities	
Update GTAP 12 labor data	**Corong**
During the GTAPv11 data cycle, wage and employment data for 70 countries were updated. *For GTAPv12 data cycle, wage and employment data for reference year 2019 will be updated for as many countries possible using pooled ILO data from 2018 to 2020.*	
Update energy data for GTAP 12	**Chepeliev**
GTAP 12 energy data from IEA and UN is currently being processed and will be used as input to the interim release of the GTAP 12 Data Base.	
Balancing routines to include agricultural production targeting	**van der Mensbrugghe**
This process is still under development and testing.	
Improve disaggregation routines	**tbd**
No progress to report.	

Center Goals: Previous Year Progress Updates

Research Goal
To actively participate in quantitative economic analysis of pressing global concern in the areas of trade and development and global environmental issues

Tasks	Responsibility
Primary Priorities	
Journal of Global Economic Analysis	**Hertel**
The JGEA published two issues in the past year (June/December 2023). These included articles advancing theory and methods, advances in data and parameters, and new software utilities. The JGEA is now ranked 52/705 in Economics and Econometrics by Scopus, 58/718 by Scimago, and 63/3036 by Research Papers in Economics (RePEc). The Center also organized quarterly workshops for authors to present their work.	
Competitive FTA Scenarios, "Natural" Trading Levels, and the Role of Trade in Climate Change and Environmental Shocks	**Golub**
Calibration of a partial equilibrium global livestock-crop model to the ERS/USDA and OECD international baselines, and simulations of trade policy scenarios, such as the ASEAN-EU trade deal and EU-Mercosur Trade Agreement. Preliminary version of the model is completed.	
Carbon Leakage Resulting from Afforestation in the UK	**Golub, Baldos**
Completed. Work on publication is in progress.	
Publish SIMPLE-G book	**Hertel, Haqiqi**
The SIMPLE-G book has been finalized and submitted it to the publisher for final production. This comprehensive resource will provide a valuable guide for researchers and practitioners interested in utilizing the SIMPLE-G model for agricultural and sustainability analyses.	
Participate in Phase 2 of the EAT-Lancet Diet study assessing the sustainability of the global agri-food system	**Chepeliev, van der Mensbrugghe**
The GTAP team has been involved in the second phase of the EAT-Lancet dietary transition study that explores the social, economic, nutritional and environmental implications of transitioning to healthier and more sustainable diets worldwide. The project includes a model inter-comparison part and various decomposition scenarios exploring implications of food loss and waste reduction, climate impacts, changes in agricultural productivity, climate mitigation policies and other leavers as a part of the overall dietary transition (in addition to the dietary changes itself). The preliminary findings of the project will be available in summer 2024 and are expected to be published in a series of papers (in the Lancet family of journals) later this year.	
Assess the sustainability of the livestock production system with a focus on policies to promote circularity	**Chepeliev, Golub, van der Mensbrugghe**
In collaboration with colleagues from Cornell (Mario Herrero, Daniel Mason-D'Croz), the GTAP team has been working on the USDA-sponsored project that involves the construction of the GTAP Data Base with a disaggregated representation of the livestock sector and related activities (large and small ruminants, pork, poultry; additional split of crop sectors for a better representation of feed; distinguishing various production systems for ruminant and monogastric). A preliminary version will be presented during the GTAP conference.	

Center Goals: Previous Year Progress Updates

Model Goal
To promote further development of GTAP-based models

Tasks	Responsibility
Primary Priorities	
GTAP-SR (GTAPWiNDC)	**Corong, Golub, van der Mensbrugghe**
Current work is focused on using GTAPWiNDC database that incorporates estimates of US intra-national trade flows; comparing the representation of agricultural sectors between GTAP and GTAPWiNDC databases; and preparing a suite of simulations to compare simulation results from using GTAP model alone and the combined GTAP-SR model.	
GEMPACK version of GTAP-SR model and documentation	**Corong, Golub, van der Mensbrugghe**
Work is ongoing to finalize the GEMPACK-based GTAP-SR model and documentation by summer 2024.	
GTAP-HS-TRQ- Implementation of TRQs using "ntuples" to limit complementarity to only bilateral trade notes subject to TRQs	**Golub**
Work is ongoing.	
Extend the SIMPLE-G model to better utilize the GTAP Data Base	**Haqiqi**
The SIMPLE-G team has made significant progress in extending the SIMPLE-G model to utilize GTAP Data. Several versions of SIMPLE-G have been developed with new GTAP data and applied to address sustainability challenges. These include a global model with added nitrogen fertilizer trade, a version of model with 8 crop categories, based on GTAP Data. The global SIMPLE-G model with fertilizer trade incorporates international trade in nitrogen fertilizer from GTAP and FAO. This model includes global fertilizer markets that interact with gridded agricultural production and fertilizer demand captured by the gridded structure of SIMPLE-G. This facilitates a more comprehensive understanding of how trade policies and fertilizer use influence agricultural sustainability and vice versa. The SIMPLE-G with 8 crop categories leverages the detailed crop classifications. This model includes gridded agricultural production, with regional trade, and regional consumption patterns of eight distinct crop categories available in GTAP. The papers documenting these models are in preparation.	
Update the GTAP-HET Model for consistency with GTAP Version 7 Model	**Akgul, Corong**
The updates on GTAP-HET Model variables, equations, and naming conventions for GTAP V7 Model are underway. This is part of an external project with EC-DG Trade in collaboration with Alessandro Antimiani. A preliminary analysis based on the updated GTAP-HET model will be presented at the 2024 GTAP Conference.	

Center Goals: Previous Year Progress Updates

Education Goal
To expand and improve education for global economic analysis worldwide

Tasks	Responsibility
Primary Priorities	
Course Delivery: • **GTAP Short Course (June 5 - August 11, 2023)** • **GTAP Dynamic Short Course (August 14 - October 13, 2023)** • **Paraguay GTAP Short Course (September 11 – November 10, 2023)*** • **GTAP 101 Courses (Sept 4 - Oct 22, 2023 / March 18 - May 5, 2024)** • **SIMPLE-G Short Course (April 1 – May 3, 2024)**	**Batta, Akgul** **Keeney, Et al.** **Aguiar, Et al.** **Aguiar** **Countryman** **Liu, Et al.**
GTAP Short Course – 1 offering, 25 graduates *One offering of the GTAP Short Course, under the leadership of Roman Keeney, was held since the last GTAP Advisory Board Meeting. The course was offered in two phases – first online, then followed by a residential, in-person phase at Purdue University. The course included a new application of the GTAP-AEZ model. Using this application, GTAP Short Course participants learned to analyze carbon leakage due to unilateral large-scale afforestation policies. The application is based on the project titled "Carbon Leakage Resulting from Afforestation in the UK" recently completed by Golub and Baldos.* *GTAP Dynamic Short Course – 1 offering, 10 graduates* *One offering of the GTAP Dynamic Short Course, under the leadership of Angel Aguiar, was held since the last GTAP Advisory Board Meeting. The course was offered in two phases – first online, then followed by a residential, in-person phase at Purdue University.* *Paraguay GTAP Short Course – 1 offering, *course cancelled before completion* *The Ministry of Economy and Finance, Paraguay contracted the Center, under the leadership of Angel Aguiar, to offer a private GTAP Short Course for 12 trainees. Their trainees completed the online phase of the course, but extenuating circumstances within their government caused them to cancel the onsite phase of the course.* *GTAP 101 Courses – 2 offerings, 35 graduates* *Two offerings of the GTAP 101 Course, under the leadership of Amanda Countryman, were held since the last GTAP Advisory Board Meeting. Prior to the 2023-2 offering, the GTAP 101 curriculum underwent an overhaul with updates made to bring the content in line with the GTAP Model, v7 and the latest edition of Mary Burfisher's book, Introduction to Computable General Equilibrium Models, 3e.* *SIMPLE-G Short Course – 1 offering, 18 graduates* *After being offered in 2019 and 2022, the course was held again at Purdue University to train participants from different disciplines for conducting sustainability related research using a multi-scale analysis tool SIMPLE-G. Participants came from five continents and 10 countries, and among them, 2/3 were PhD students and/or early career researchers.*	
Curriculum Updates: • **identify materials that require updates** • **propose new course materials to fill any possible gaps in the course**	**Akgul, Batta**

Tasks	Responsibility
• **develop/review new and updated course materials**	
The GTAP PTA, GTAP-HET, and GTAP Dynamic Short Courses are currently undergoing revisions. *For the GTAP PTA, efforts are focused on aligning the content with GTAP Model version 7, incorporating new instructional videos and exercises. These updates, scheduled for completion by the end of June 2024, aim to ensure the curriculum reflects the latest advancements in the GTAP model and is consistent with the third edition of Mary Burfisher's book, Introduction to Computable General Equilibrium Models. The next offering of GTAP PTA is scheduled for September-October 2024.* *The Dynamic Short Course is also undergoing revisions to both content and structure for the online phase. All materials are being reviewed and updated, with the addition of new hands-on exercises to enhance the learning experience.* *Furthermore, the technical tutorials developed in GTAP 101 to support proficiency with RunGTAP and AnalyseGE are being integrated into the common technical review modules in GTAP PTA and GTAP Dynamic Course.* *Similarly, the GTAP-HET Course and model are currently undergoing revisions. The GTAP-HET model is being updated to align with GTAP Model 7 standards, and we plan to offer the revamped course in 2025.* *Moreover, public training videos are undergoing updates, with updates to content and conversion into AI narration to facilitate ease of future revisions and ensure audio consistency.*	

Complete/Launch:
• **new course proposal and review system**
• **module repository system**
    o **develop instructor guidelines for usage and access**
    o **new common module content developed (e.g., RunGTAP, FAQ data base, etc.)**
• **systematic documentation of GTAP model extensions (two tracks – for instructors and for non-staff users)**
	Akgul, Douglas

The GTAP website features a course proposal submission system allowing external instructors to propose new courses for inclusion on the GTAP-U platform and teach at GTAP-U. Launched in 2023, the new proposal system aims to streamline collaboration and course development processes and is currently open for applications. Interested instructors can submit proposals by completing a proposal form, attaching a draft syllabus, and providing their CV. Each proposal will undergo peer review before approval. *A module repository system is being built to systematically categorize course materials. The work is ongoing. This system encompasses all course materials in a searchable format, enabling efficient tracking of updates and developing common modules. These common modules are aimed to serve as standardized technical review modules across other GTAP-U courses.* *Moreover, GTAP has produced "GTAP at a Glance" videos in French and Spanish languages to broaden accessibility and engagement with GTAP materials among diverse communities. A Chinese version of this video is also in the works.*	
New Course Development: • **Meet with instructors, board members, course participants and colleagues in the network to identify demand for core and specialized training in CGE modeling** • **Propose new course ideas and work with instructors to develop/implement**	**Akgul**

Tasks	Responsibility

o   **GTAP-E-Power Course**
  o   **GTAP for Non-Economists Course**
  o **GTAPinR Workshop/Course**	

Currently, the syllabus development is in progress for the fully-online, instructor-assisted GTAP-E-Power Course, designed to span six weeks. This course will concentrate on the static GTAP-E-Power model, supplemented with case studies, and will culminate in a group project. *Additionally, development is underway for the GTAP for Non-Economists course tailored for policymakers. This short, self-paced, fully online course will cover introductory and non-technical concepts of the GTAP model and database, as well as their implications for policymaking, and will include a case study component.* *Furthermore, a pre-conference GTAP-in-R workshop will be offered in Colorado. We are also exploring the possibility of an online course offering for GTAP-in-R.*	
Quality Assessments: • **Regular review of course content and technical quality** • **Carry out post-mortem meetings with lead course instructors** • **Report the status of courses at staff meetings**	**Akgul**
After each GTAP-U course, we conduct post-mortems with lead course instructors to review learner evaluations and plan content updates accordingly. This year we have conducted 3 post-mortems so far.	
Report on the status and future directions of GTAP-U	**Akgul**
Future goals include launching GTAP-E-Power and GTAP for Non-Economists Courses in the short term and other GTAP specialized courses in the longer term. We also aim to continue incorporating cutting-edge technologies like artificial intelligence to enhance course effectiveness as well as continue to offer multilingual teaching materials to improve accessibility. Additionally, we are looking for opportunities to partner with educational institutions, research organizations, and government agencies worldwide through our course proposal platform to expand the GTAP-U curriculum.	

Center Goals: Previous Year Progress Updates

Staffing Goal
To actively seek and encourage talented staff and graduate students

Tasks	Responsibility
Primary Priorities	
Hire new research professor	**van der Mensbrugghe**
In late 2023 a search was conducted to hire a new research assistant professor position for the Center. Three candidates were interviewed with Maksym Chepeliev being offered the position. He officially started this new role in January 2024.	
Hire new direct and research professor	**van der Mensbrugghe, Hertel**
In late 2023 a search was conducted to hire a new research professor and director for the Center to replace Dominique van der Mensbrugghe when he planned to step down from the role in 2024. Two candidates were interviewed, but an offer for the position was not offered. Dominque van der Mensbrugghe has agreed to stay on in his current position for an additional 12 months while the search for his replacement continues.	
Hire new research economist	**van der Mensbrugghe**
Maksym Chepeliev's transition to faculty left an open research economist position within the Center. In early 2024, the hiring process for this position began, with interviews being conducted in April. Interviews are ongoing and we anticipate an announcement before the end of the summer.	
Associate Director appointed	**van der Mensbrugghe, Corong**
Erwin Corong was appointed Associate Director of the Center. In this added role, his responsibilities will include: (1) oversee the overhaul of the database's build workflow—from start to finish; (2) look into options for making the GTAP Data Base open source; and (3) expand the current program to onboard new graduate students that work for the Center.	
GTAP European office	**van der Mensbrugghe, Hertel**
The Center is actively engaged in opening a branch office in Europe. The office would have several purposes: (1) improve our day-to-day interactions with Board members and GTAP users based in Europe, the Middle East and Africa; (2) work with GTAP-U to provide onsite courses in Europe; (3) attract local talent to work with the Center; and (4) facilitate the Center's ability to work on EU-based funded projects. We are awaiting a planning document from Purdue's development office to start taking next steps.	

Center Goals: Previous Year Progress Updates

Collaboration Goal
To actively seek opportunities for fostering collaboration with institutions around the world

Tasks	Responsibility
Primary Priorities	
2024 GTAP Conference (Fort Collins, Colorado, USA)	**Batta, van der Mensbrugghe, Countryman**
The 2024 GTAP Conference will be hosted by the Colorado State University Department of Agricultural and Resource Economics under the local leadership of Amanda Countryman, associate professor in said department, who received her PhD from Purdue University, was a graduate student working with the Center, and currently serves as the lead instructor for the GTAP 101 Course. The advisory board meeting will be held June 3-4, 2024, immediately followed by the conference, June 5-7. Dr. Countryman will provide an update on the conference and welcome everyone to Colorado State University during both events.	
2025 GTAP Conference (Kigali, Rwanda)	**Batta, van der Mensbrugghe, UNECA**
In June 2022, the GTAP Advisory Board approved moving the Kigali proposal from June 2022 to June 2025. A planning update will be presented during the board meeting.	
2026 GTAP Conference (Kyoto, Japan)	**Batta, van der Mensbrugghe**
A proposal to hold the 2026 board meeting and conference in Kyoto, Japan was circulated to the board in early 2024 followed by an online vote. Twenty-two board representatives voted in support of the proposal, with one voting against. The proposal was approved.	
GTAP Virtual Seminar Series	**Batta**
Three seminars were held since the last GTAP Advisory Board Meeting on the following topics; the latter of which was a special, jointly organized seminar by the Center and the United Nations Economic Commission for Africa to highlight GTAP and CGE Modeling in Africa. Following this seminar, the Center provided a special, African-focused version of the GTAP Data Base to all participants. • *A Latin Hypercube Sampling Utility: with an application to an Integrated Assessment Model (Dominique van der Mensbrugghe) – 19 attendees* • *A Ricardian Trade Structure in CGE: Modeling Eaton-Kortum Based Trade with GTAP (Eddy Bekkers) – 51 attendees* • *GTAP and CGE Modeling in Africa (co-organized by the UNECA) – 265 attendees*	

Center Goals: Previous Year Progress Updates

Communication Goal
To facilitate communication amongst members of the network as well as between the Center and key stakeholders

Tasks	Responsibility
Primary Priorities	
Notable GTAP website updates: design, security, functionality, etc.	**Douglas**
The GTAP website's server has been converted to a Purdue-managed shared web server. The previous virtual machine's version of Windows server was considered obsolete, and this move should help increase our security in the future. *Work has begun on a revamp of the GTAP FAQs to allow for more visibility to the user, as well as additional enhancements for updating FAQ content by GTAP staff.* *Unfortunately, we have only undertaken minor work on the redesign of the website, working with a popular and common framework will allow us to increase user interaction as well as be more mobile friendly.*	
Notable JGEA website updates: design, security, functionality, etc.	**Douglas**
The process has begun to update to new server machines as the OS had become outdated and was no longer supported. Work is underway to move the OJS software over to the new machines.	

Center Goals: Forthcoming Year Action Items

Data Goal
To improve the quality of data products through improving the quality of contributed I-O data, adding and improving other datasets, monitoring data quality using comparison programs, and versioning control and documentation

Tasks	Responsibility
Primary Priorities	
Update GTAP 12 labor data	Corong
Income and factor Taxes	Corong
EU domestic support	Boulanger, Philippidis, Aguiar
Export subsidies	Ajewole, Beckman, Aguiar
Services trade	Pereira, Aguiar
Complementary green-house emissions	Chepeliev
Balancing routines to include agricultural production targeting	van der Mensbrugghe
Input Output Tables	Contributors, Aguiar
Update energy data for GTAP 12	Chepeliev
Mainstream GTAP-BIO	Taheripour, Chepeliev, Aguiar, Sajedinia
Disaggregation of critical minerals and select downstream sectors in the data base	Chepeliev
Secondary Priorities	
Manufacturing Production Targeting	Pereira, Aguiar
Improve disaggregation routines	tbd
Development of the GTAP Data Base with disaggregated livestock sectors	Chepeliev, van der Mensbrugghe

Center Goals: Forthcoming Year Action Items

Research Goal
To actively participate in quantitative economic analysis of pressing global concern in the areas of trade and development and global environmental issues

Tasks	Responsibility
Primary Priorities	
Journal of Global Economic Analysis – Continue pipeline of potential papers for future releases	Hertel
Assess the sustainability of the livestock production system with a focus on policies to promote circularity	Chepeliev, Golub, van der Mensbrugghe
Documentation of the partial equilibrium global livestock-crop model calibrated to the ERS/USDA international baseline	Golub

Center Goals: Forthcoming Year Action Items

Model Goal
To promote further development of GTAP-based models

Tasks	Responsibility
Primary Priorities	
GEMPACK version of GTAP-SR model and documentation	Corong, Golub, van der Mensbrugghe
GTAP-HS-TRQ- Implementation of TRQs using "ntuples" to limit complementarity to only bilateral trade notes subject to TRQs	Golub

Center Goals: Forthcoming Year Action Items

Education Goal
To expand and improve education for global economic analysis worldwide

Tasks	Responsibility
Primary Priorities	
Course Delivery: • GTAP Short Course (June 3 - August 9, 2024) • GTAP 101 Course (September 2 - October 20, 2024) • GTAP PTA Course (September 9 - October 18, 2024) • GTAP Dynamic Course (January 20 - March 14, 2025) • GTAP 101 Course (March - May 2025 tbd)	Batta, Akgul Keeney, Et al. Countryman Walmsley, Strutt Aguiar, Et. al. Countryman
Curriculum Updates: • identify materials that require updates • propose new course materials to fill any possible gaps in the course • develop/review new and updated course materials	Akgul, Batta

Complete/Launch:
• module repository system
    o develop instructor guidelines for usage and access
    o new common module content developed (e.g., RunGTAP, FAQ data base, etc.)
• systematic documentation of GTAP model extensions (two tracks – for instructors and for non-staff users)
	Akgul

New Course Development: • Meet with instructors, board members, course participants and colleagues in the network to identify demand for core and specialized training in CGE modeling	Akgul
Quality Assessments: • Regular review of course content and technical quality • Carry out post-mortem meetings with lead course instructors • Report the status of courses at staff meetings	Akgul
Report on the status and future directions of GTAP-U	Akgul

Center Goals: Forthcoming Year Action Items

Staffing Goal
To actively seek and encourage talented staff and graduate students

Tasks	Responsibility
Primary Priorities	
Continue director search	van der Mensbrugghe, Hertel
Onboard and train new research economist	van der Mensbrugghe, Data Team
GTAP European Office	van der Mensbrugghe, Hertel

Center Goals: Forthcoming Year Action Items

Collaboration Goal
To actively seek opportunities for fostering collaboration with institutions around the world

Tasks	Responsibility
Primary Priorities	
2025 GTAP Conference (Kigali, Rwanda)	Batta, van der Mensbrugghe
2026 GTAP Conference (Kyoto, Japan)	Batta, new CGTA director
2027 GTAP Conference (30th annual at Purdue University)	Batta, new CGTA director
GTAP Virtual Seminar Series	Batta

Center Goals: Forthcoming Year Action Items

Communication Goal
To facilitate communication amongst members of the network as well as between the Center and key stakeholders

Tasks	Responsibility
Primary Priorities	
Website updates: design, security, functionality, etc.	Douglas

Release Notes

GTAP Data Base

The centerpiece of the Global Trade Analysis Project is a global data base describing bilateral trade patterns, production, consumption and intermediate use of commodities and services.

After the release of GTAP 11, we identified issues that caused us to have two subsequent releases, GTAP 11a and GTAP 11b. Only after these releases we could devote our attention to the documentation and the satellites and extension distributions: Complementary greenhouse gas emissions, nutritional accounts, GTAP-E, Power, MRIO, Land Use and Cover, GDYN and GMIG. Of these, we have already released GTAP-E and Power including nutritional accounts and complementary greenhouse emissions. We expect that for the Board Meeting we would have already released the remaining extensions.

In addition, we continue to work on developing GTAP-BIO and GTAP Circular Economy extensions. In particular, the CE extension will include cement and fertilizers.

Towards GTAP 12, we have prepared pre-release 1 before the Board Meeting and this includes new reference year macroeconomic and energy data, trade, tariffs and OECD domestic support. We also include new IOTs for several African countries and updated IOTs for countries in the Middle East.

One of the novelties of GTAP 12 will be the inclusion of other balance of payment elements such as remittances and investment income, which we already introduce in the GMIG and GDYN extensions, respectively. We plan to also include Official Development Aid and continue to work into improving the reporting of Savings. More importantly, we have changed our source of capital stock data from Penn World Tables to IMF and we are planning a special release of GTAP 11 that contains the newly sourced capital stock, which facilitates the development of baselines.

For the second and final pre-release of GTAP 12, we plan to complete the protection information, i.e., EU's agricultural domestic support and agricultural export subsidies. Also important is the need to continue to improve the labor and services trade inputs used and the procedures that we use to build the GTAP Data Base.

Release Notes

GTAP Models

The Center for Global Trade Analysis oversees the development of two global general equilibrium models - the standard GTAP Model and its dynamic counterpart, GTAP-RD.

The GTAP Model webpage (https://www.gtap.agecon.purdue.edu/models/current.asp) is continually being updated to allow users to download the latest versions of the GTAP version 7 suite of models in both stand-alone and RunGTAP formats. Links for other GTAP model-specific zip files and documents (e.g., GMig, GTAP-AEZ, GTAP-MRI etc.) become available upon release of their associated version 11 satellite data.

The GTAP Model was initially documented in the GTAP Book. Recent changes in the structure can be found below:

- The Standard GTAP Model, Version 7, by Corong et al., Journal of Global Economic Analysis, 2017

  Standard GTAP Model v7 - Quick Reference Card

- Global Trade Analysis: Modeling and Applications, by T.W. Hertel (ed.)
- A Graphical Exposition of the GTAP Model by Brockmeier, Martina
- A Note On Changes Since GTAP Book Model by Itakura, K. and T. Hertel, 2000
- A New Regional Household Demand System for GTAP by McDougall, R., GTAP Working Paper No. 14, 2000
- A General Welfare Decomposition for CGE Models by Hanslow, K., GTAP Technical Paper No. 19, 2000
- Decomposing Welfare Changes in GTAP by Huff, K. and T. Hertel, GTAP Technical Paper No. 05, 2001
- Two Small Extensions to SALTER by McDougall, R., SALTER Working Paper Number 12, 1993
- A Note on the CES Functional Form and Its Use in the GTAP Model by Gohin, A. and T. Hertel
- Notes on Final Demand in the Presence of Non-homothetic, Weak Separability by Hertel, T.
- References for GTAP Data Base and Model

The model code is also available for download:

Model (version 7)	Current version		Documentation
	RunGTAP	Stand-alone	
Standard GTAP	download	download	view
GTAP-E	download	download	view
GTAP-Power	download	download	view

https://www.gtap.agecon.purdue.edu/models/current.asp

Center Research Portfolio

Research Projects

Center for Global Trade Analysis staff undertook the following research projects during the past year.

Internally Funded Projects

Project Title:	**Food Demand Analysis and Sustainability Project**
Sponsor:	CFDAS Seed Grant/AgEcon
Staff Involved:	Maksym Chepeliev, Thiago Simonato

Externally Funded Projects

Project Title:	**INFEWS - China**
Sponsor:	NSF
Staff Involved:	Dominique van der Mensbrugghe, Tom Hertel, Jing Liu, Zhan Wang

Project Title:	**HDR/ CSSI FAIR- Extensible Geospatial Data Framework**
Sponsor:	NSF
Staff Involved:	Tom Hertel, Iman Haqiqi

Project Title:	**CNH2-L**
Sponsor:	Michigan State/NSF
Staff Involved:	Uris Baldos, Tom Hertel, Jing Liu, Zhan Wang

Project Title:	**GLASSNET**
Sponsor:	NSF
Staff Involved:	Dominique van der Mensbrugghe, Tom Hertel, Uris Baldos, Jing Liu, Zhan Wang

Project Title:	**PCHES/Adapt**
Sponsor:	Penn State
Staff Involved:	Tom Hertel, Iman Haqiqi, Jing Liu, Alfredo Cisneros Pineda

Project Title:	**GTAP Modeling of Indirect Effects for Sustainable Aviation Fuels**
Sponsor:	Argonne National Laboratory
Staff Involved:	Farzad Taheripour, Dominique van der Mensbrugghe, Angel Aguiar, Maksym Chepeliev

Project Title:	**INFEWS/T2**
Sponsor:	NSF
Staff Involved:	Dominique van der Mensbrugghe, Tom Hertel, Uris Baldos, Iman Haqiqi, Jing Liu, Zhan Wang, Srabashi Ray, Alfredo Cisneros Pineda, Emiliano Lopez Barrera, Elizabeth Fraysse

Project Title:	**Biofuels/Tyner**
Sponsor:	FAA
Staff Involved:	Farzad Taheripour, Dominique van der Mensbrugghe, Erwin Corong, Maksym Chepeliev, Lauren Hernandez Benavidez

Project Title:	**Biofuels GHG**
Sponsor:	EPA
Staff Involved:	Dominique van der Mensbrugghe, Angel Aguiar, Erwin Corong, Maksym Chepeliev

Project Title:	**Climate Impacts on Agricultural Markets: Enhancing Environmental Modeling Capabilities Ag Market**
Sponsor:	USDA/ERS
Staff Involved:	Dominique van der Mensbrugghe, Alla Golub, Erwin Corong

Project Title:	**Converting the GTAP Model**
Sponsor:	ERS
Staff Involved:	Dominique van der Mensbrugghe, Angel Aguiar, Erwin Corong, Maksym Chepeliev, Uris Baldos, Thiago Simonato

Project Title:	**AFRI Labor Markets and the Impacts of Environmental Stresses**
Sponsor:	NIFA
Staff Involved:	Tom Hertel, Jing Liu, Srabashi Ray

Project Title:	**Decarbonizing the Electricity Grid**
Sponsor:	Rutgers University
Staff Involved:	Dominique van der Mensbrugghe, Maksym Chepeliev

Project Title:	**Meeting 21st Century Objectives in Livestock Sectors: Challenges and Opportunities**
Sponsor:	NIFA, USDA
Staff Involved:	Dominique van der Mensbrugghe, Maksym Chepeliev, Alla Golub

Project Title:	**CGE Analysis for Tajikistan**
Sponsor:	The World Bank
Staff Involved:	Dominique van der Mensbrugghe, Angel Aguiar, Maksym Chepeliev

Project Title:	**Modeling Turkiye's Circular Economy Transition**

Sponsor:	The World Bank
Staff Involved:	Dominique van der Mensbrugghe, Angel Aguiar, Erwin Corong, Maksym Chepeliev

Project Title:	**Azerbaijan Climate Change**
Sponsor:	The World Bank
Staff Involved:	Dominique van der Mensbrugghe, Angel Aguiar, Erwin Corong, Maksym Chepeliev

Project Title:	**CGE Modeling/Nigeria**
Sponsor:	The World Bank
Staff Involved:	Dominique van der Mensbrugghe, Maksym Chepeliev

Project Title:	**Using Forward-Looking-Earth-Economy Models**
Sponsor:	University of Minnesota/The World Bank
Staff Involved:	Erwin Corong

Project Title:	**Competitive FTA Scenarios, "Natural" Trading Levels, and the Role of Trade in Climate Change and Environmental Shocks**
Sponsor:	Virginia Tech
Staff Involved:	Alla Golub, Tom Hertel

Project Title:	**Carbon Leakage Resulting from Afforestation in the UK**
Sponsor:	University of Exeter
Staff Involved:	Alla Golub, Uris Baldos

Project Title:	**AFRI3**
Sponsor:	USDA/NIFA
Staff Involved:	Tom Hertel, Iman Haqiqi, Jing Liu, Srabashi Ray

Center Research Portfolio

Publications

Center for Global Trade Analysis staff published the following during the past year.

Aguiar, A. H. (Ed.). (2023b). Global Trade, Assistance, and Production: The GTAP 11 Data Base. Center for Global Trade Analysis, Purdue University. https://www.gtap.agecon.purdue.edu/databases/v11/v11_doco.aspx

Aguiar, A. H. (2024). Disaggregation of Input-Output Tables. In A. H. Aguiar (Ed.), Global Trade, Assistance, and Production: The GTAP 11 Data Base. https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=7119

Aguiar, A. H. (2023a). Afghanistan, Algeria, Azerbaijan, Bolivia, Cyprus, Ecuador, Haiti, Indonesia, Iraq, Lebanon, and Syria, Mozambique, Uzbekistan, Vietnam. In A. H. Aguiar (Ed.), Global Trade, Assistance, and Production: The GTAP 11 Data Base. https://www.gtap.agecon.purdue.edu/databases/v11/v11_doco.aspx

Aguiar, A. H., Pereira, M. F. S., & Corong, E. (2023). Refining savings in the gtap data base (Presented during the 26th Annual Conference on Global Economic Analysis (Bordeaux, France)), Global Trade Analysis Project (GTAP). https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=6998

Ajewole, K., Beckman, J., & Aguiar, A. H. (2023). Agricultural Export Subsidies. In A. H. Aguiar (Ed.), Global Trade, Assistance, and Production: The GTAP 11 Data Base. https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=7115

Anderson, K., E. Corong, A. Strutt, E. Valenzuela (2023). The Relative Importance of Global Agricultural Subsidies and Tariffs, Revisited. World Trade Review 22:3-4.

Baldos, U.L.C., Chepeliev, M., Cultice, B., Huber, M., Meng, S., Ruane, A.C., Suttles, S., and van der Mensbrugghe, D. (2023). Global-to-local-to-global interactions and climate change. Environmental Research Letters, 18(5). https://dx.doi.org/10.1088/1748-9326/acc95c

Bekkers, E., E. Corong, J. Francois and H. Rojas-Romagosa (2023). A Ricardian Trade Structure in CGE: Implementing Eaton-Kortum in the Standard GTAP Model. Journal of Global Economic Analysis 8:2.

Chepeliev, M., Liverani, A., Nair, A., and van der Mensbrugghe, D. 2024. Azerbaijan: Pathways for Decarbonization in a Global Context. Climate Policy, 1–16. https://doi.org/10.1080/14693062.2024.2330378

Chepeliev, M. 2024. Impacts of the Russia-Ukraine war on global agriculture: spillover effects and policy responses. Purdue Agricultural Economics Report (PAER), January 2024. https://ag.purdue.edu/commercialag/home/purdue-agricultural-economics-report/

Chepeliev, M. 2023. GTAP-Power Data Base: Version 11. Journal of Global Economic Analysis 8 (2), 110-137. https://doi.org/10.21642/JGEA.080203AF

Chepeliev, M. 2023. Spillover effects of dietary transitions. Nature Food 4, 458–459 (2023). https://doi.org/10.1038/s43016-023-00781-2

Chepeliev, M., Diachuk, O., Podolets, R., Semeniuk, A. 2023. What is the future of nuclear power in Ukraine? The role of war, techno-economic drivers and safety considerations. Energy Policy, Volume 178, July 2023. https://doi.org/10.1016/j.enpol.2023.113612

Cisneros-Pineda, J. Dukes, J. Johnson, S. Brouder, N. Ramankutty, E. Corong, A. Chaudhary (2023). The Missing Link to Global-to-Local-to-Global Analyses of Biodiversity and Ecosystem Services. Environmental Research Letters 18: 041003.

Clora, F., W. Yu, and E. Corong (2023). Alternative Carbon Border Adjustment Mechanisms in the European Union and International Responses: Aggregate and Within-Coalition Results. Energy Policy 174.

Gatto, A., Chepeliev, M. 2024. Global food loss and waste estimates show increasing nutritional and environmental pressures. Nat Food 5, 136–147 (2024). https://doi.org/10.1038/s43016-023-00915-6

Gatto, A., Chepeliev, M. 2024. Reducing global food loss and waste could improve air quality and lower the risk of premature mortality. Environmental Research Letters. 19 014080. DOI 10.1088/1748-9326/ad19ee

Greig, A., Aguiar, A. H., & Wu, Z. (2023). NI-GTAP: An extension to the GTAP database to assess the impact of the northern Ireland protocol on NI agri-food sectors (Presented during the 26th Annual Conference on Global Economic Analysis (Bordeaux, France)), Global Trade Analysis Project (GTAP). https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=6935

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International Finance Corporation (IFC). 2023. Building Green: Sustainable Construction in Emerging Markets. https://www.ifc.org/content/dam/ifc/doc/2023/building-green-sustainable-construction-in-emerging-markets.pdf Chepeliev, M. and van der Mensbrugghe, D. contributed to Chapter 1 of the report.

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Maliszewska, M. Chepeliev, M, Fischer, C., and Jung, E. 2023. How developing countries can measure exposure to the EU's carbon border adjustment mechanism. World Bank Blogs. https://blogs.worldbank.org/trade/how-developing-countries-can-measure-exposure-eus-carbon-border-adjustment-mechanism

Mimouni, M., Pichot, X., & Aguiar, A. H. (2023). Effective Applied Tariff Protection by MAcMap. In A. H. Aguiar (Ed.), Global Trade, Assistance, and Production: The GTAP 11 Data Base. https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=7114

Organization for Economic Cooperation and Development (OECD). 2023. Reform Options for Lithuanian Climate Neutrality by 2050. OECD Publishing, Paris. https://doi.org/10.1787/0d570e99-en Chepeliev M. and van der Mensbrugghe D. contributed to Chapters 3 and 7.

van der Mensbrugghe, D. (2023). A Latin Hypercube Sampling Utility: with an application to an Integrated Assessment Model. Journal of Global Economic Analysis, 8(1)21-54. https://doi.org/10.21642/JGEA.080102AF

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Zuidema, S., Liu, J., Chepeliev, M., Johnson, D., Baldos, U., Frolking, S., Kucharik, C., Wollheim, W., Hertel, T. 2023. US climate policy yields water quality cobenefits in the Mississippi Basin and Gulf of Mexico. Proceeding of the National Academy of Sciences (PNAS). 120 (43) e2302087120. https://doi.org/10.1073/pnas.2302087120

Center Research Portfolio

Presentations

Center for Global Trade Analysis staff presented the following during the past year.

Chepeliev M. 2024. Socio-Economic Systems Across Value Chains Workshop, April 4-6, Chicago, USA. Discussant.

Chepeliev M. February 2024. Purdue's Center for Food and Agricultural Business Syngenta Workshop, February 6, 2024. Purdue University, West Lafayette, IN. Discussant.

Chepeliev, M. 2024. Jean Monnet Network on Transatlantic Trade Politics Research Workshop: Transatlantic Trade in Global Context, January 19, 2024, Ottawa, Canada. Presented: "Impacts of the War in Ukraine on Global Agriculture: The Potential of Trade Policy to Minimize the Fallout".

Chepeliev, M. 2023. Purdue's Center for Food and Agricultural Business Syngenta Workshop, November 29, 2023. Purdue University, West Lafayette, IN. Presented: "Trade, Energy and Environmental Modeling for Applied Policy Analysis".

Chepeliev, M., Diachuk, O., Podolets, R., Semeniuk, A. 2023. Integrated Assessment Modeling Consortium (IAMC) 16th Annual Meeting, Venice, Italy, 14-16 November, 2023. Presented: "Can Ukraine Go 'Green' on the Post-war Recovery Path?".

Chepeliev, M., Diachuk, O., Podolets, R., Semeniuk, A. 2023. Integrated Assessment Modeling Consortium (IAMC) 16th Annual Meeting, Venice, Italy, 14-16 November, 2023. Presented: "What is the Future of Nuclear Power in Ukraine? The Role of War, Techno-Economic Drivers and Safety Considerations".

Chepeliev, M., Farole, T., Liverani, A., and van der Mensbrugghe, D. 2023. Integrated Assessment Modeling Consortium (IAMC) 16th Annual Meeting, Venice, Italy, 14-16 November, 2023. Presented: "Circular Economy Transition in Türkiye".

Chepeliev, M. 2023. Workshop at the Korea Institute of Energy Technology (KENTECH), October 27, Naju, Korea. Presented: "Distributional Impacts of Carbon Pricing Policies under the Paris Agreement: Inter and Intra-Regional Perspectives".

Chepeliev, M. 2023. International Modeling Workshop organized by Korea Environment Institute, October 25, Seoul, Korea. Presented: "Economy-wide implications of the climate mitigation and circular economy policies".

Chepeliev, M. 2023. International Modeling Workshop organized by Korea Environment Institute, October 25, Seoul, Korea. Presented: "GTAP 11 Data Base and Energy-Environmental Satellites".

Chepeliev, M. 2023. Yunnan Normal University. 23 October, 2023, Kunming, China. Presented: "GTAP Data Base".

Chepeliev, M. 2023. Whole-of-Economy (WoE) Authors' Workshop, World Bank, September 27, Washington DC, USA. Presented: "Climate Mitigation Policies and Trade: Impacts and Interactions".

Chepeliev, M., Maliszewska, M., Filipa Seara e Pereira, M. 2023 AAEA Annual Meeting, Washington DC, USA. July 23-25. Presented: "The War in Ukraine Disrupts Agricultural Value Chains, but Trade Policy Measures Can Mitigate the Impacts".

Chepeliev, M., Maliszewska, M., Filipa Seara e Pereira, M. 29th International Input-Output Association Conference, Alghero, Italy. June 25-30. Presented: "The War in Ukraine Disrupts Agricultural Value Chains, but Trade Policy Measures Can Mitigate the Impacts".

Chepeliev, M., Farole, T., Liverani, A., and van der Mensbrugghe, D. 2023 26th Annual Conference on Global Economic Analysis, Bordeaux, France. June 14-16. Presented: "Circular Economy Transition in Türkiye."

Chepeliev, M. 2023. GTAP Advisory Board meeting, Bordeaux, France. June 12-13. Presented: "Food Loss and Waste".

Chepeliev, M. 2023. GTAP Advisory Board meeting, Bordeaux, France. June 12-13. Presented: "Energy and Emissions: GTAP 11 Revisions".

Chepeliev, M. 2023. GTAP 11 Seminar. April, 25 (virtual workshop) Presented "Environmental and Energy updates for GTAP 11."

Eisenbarth, S., B. Day, A. Golub, and Uris Baldos. "Global Impacts from land-based climate change mitigation in the UK". Presented by Alla Golub at the 11th Forestry and Agriculture GHG Modeling Forum, Raleigh, NC, March 4-7, 2024.

Gatto A. and Chepeliev, M. 2023. 29th International Input-Output Association Conference, Alghero, Italy. June 25-30. Presented: "Mounting Nutritional and Environmental Pressures of the Global Food Loss and Waste Calls for Urgent Policy Action".

Golub, A., U. Baldos, B. Day, and S. Eisenbarth. Presented by Alla Golub at the 2023 International Agricultural Trade Resource Consortium Annual Meeting, Clearwater Beach, FL, and Virtual Platform, December 10-12, 2023.

Golub, A., U. Baldos, B. Day, and S. Eisenbarth. "Carbon leakage from afforestation in the UK". Presented by Alla Golub at the 26th Conference on Global Economic Analysis, Bordeaux, France, June 14-16, 2023.

Golub, A., A. Aguiar, M. Chepeliev, T. Hertel, and D. van der Mensbrugghe. "Incorporating heterogeneous export supply and import demand elasticities in a CGE model". Presented by Alla Golub at the USDA/OCE Project Webinar "Estimation of International Agricultural Trade Elasticities", May 24, 2023.

van der Mensbrugghe, D. "GTAP: A success story". A talk prepared for the SuPply chain Interdependency Network (SPIN), OECD, Paris, March 27, 2024.

Center Research Portfolio

Awards

Center for Global Trade Analysis staff were presented with the following awards during the past year.

Thomas Hertel
- 2023 Corinne Alexander Spirit of the Land-Grant Mission Award (Purdue University)

Iman Haqiqi and Jing Liu
- Seed for Success Acorn Award (Purdue University)

Zeynep Akgul, Ginger Batta, and Amanda Countryman
- 2024 Purdue University Online Award for Innovative Online Use of Technology (Credentials)
  - For use of AI text-to-speech technology in GTAP 101 Course curriculum.