



## GTAP Advisory Board Meeting Summary Virtual Meeting | June 21-22, 2021

### Attendance

**GTAP Center:** Angel Aguiar, Zeynep Akgul, Uris Lantz Baldos, Ginger Batta, Mary Burfisher, Maksym Chepeliev, Erwin Corong, Alla Golub, Thomas Hertel, Dominique van der Mensbrugge

#### Board Representatives:

- Jayson Beckman (Economic Research Service of the United States Department of Agriculture)
- Cecilia Bellora (Centre d'Etudes Prospectives et d'Information Internationales)
- Antoine Bouët (International Food Policy Research Institute)
- Lurong Chen (Economic Research Institute for ASEAN and East Asia)
- Shenjie Chen (Global Affairs Canada)
- Jeffrey Condon (McKinsey & Company, Inc.)
- Rob Dellink (Organisation for Economic Co-operation and Development)
- Joseph Francois (University of Bern, World Trade Institute)
- Paolo Giordano (Inter-American Development Bank)
- Stephen Karingi (United Nations Economic Commission for Africa)
- Kenichi Kawasaki (National Graduate Institute for Policy Studies)
- Grace Keneally (The MITRE Corporation)
- Bob Koopman (World Trade Organization)
- Marijke Kuiper (Wageningen Economic Research)
- Elisa Lanzi (Organisation for Economic Co-operation and Development)
- Shantong Li (Development Research Center of the State Council)
- Maryla Maliszewska (The World Bank)
- Catherine Milot (Department for International Trade)
- Mondher Mimouni (International Trade Centre)
- Lars Nilsson (European Commission - DG Trade)
- Sergey Paltsev (MIT Joint Program on the Science and Policy of Global Change)
- Janine Pelikan (Thünen Institute of Market Analysis)
- Ralf Peters (United Nations Conference on Trade and Development)
- William Powers (US International Trade Commission)
- Chris Rasmussen (US Department of Commerce)
- Marika Santoro (International Monetary Fund)
- Andrew Schreiber (US Environmental Protection Agency)
- Susumu Suzuki (Economic and Social Research Institute, Cabinet Office)
- George Verikios (KPMG Australia)
- Matthias Weitzel (European Commission - Joint Research Centre)
- Jingliang Xiao (Global Affairs Canada)

#### Guests:

- Eddy Bekkers (World Trade Organization)
- Farzad Taheripour (Purdue University)

### A. Summary of Goals and Accomplishments in the Past Year [2021 Report and Issues Document](#)

## B. Summary of Agency Activities in the Past Year

[https://www.gtap.agecon.purdue.edu/events/Board\\_Meetings/2021/index.aspx#agencyreports](https://www.gtap.agecon.purdue.edu/events/Board_Meetings/2021/index.aspx#agencyreports)

## C. Overview of Broad Goals for the Center

1. **Data Goal:** To Improve the quality of data products through:
  - a. Improving the quality of contributed I-O data
  - b. Addition and improvement of other datasets
  - c. Monitoring of data quality using comparison programs
  - d. Version control and documentation
2. **Research Goal:** To actively participate in quantitative economic analysis of pressing global concern in the areas of Trade and Development and Global Environmental Issues
3. **Model Goal:** To promote further development of GTAP-based models
4. **Education Goal:** To expand and improve education for global economic analysis worldwide
5. **Staffing Goal:** To actively seek and encourage talented staff and graduate students
6. **Collaboration Goal:** To actively seek opportunities for fostering collaboration with institutions around the world
7. **Communication Goal:** To facilitate communication amongst members of the network as well as between the Center and key stakeholders

## D. Overview of Priorities and Responsibilities, by Goal Type

1. **Data Goal:** To Improve the quality of data products

Tasks	Responsibility
<b>Improvement of Datasets used in GTAP Data Base (core)</b>	
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> <li>• Maintain pre-release schedule of GTAP 11</li> </ul>	Aguiar
<ul style="list-style-type: none"> <li>• Continue to work with IO table contributors and development of score card to better understand where the largest changes are taking place during the construction of GTAP</li> </ul>	Aguiar
<ul style="list-style-type: none"> <li>• Agricultural export subsidies</li> </ul>	Beckman
<ul style="list-style-type: none"> <li>• Procurement: New bilateral trade in services</li> </ul>	Aguiar/McDougall
<ul style="list-style-type: none"> <li>• Air pollution and non-CO<sub>2</sub> emissions</li> </ul>	Chepeliev
<ul style="list-style-type: none"> <li>• Mainstreaming AEZ into GTAP</li> </ul>	Corong
<ul style="list-style-type: none"> <li>• Mainstreaming GTAP-BIO Data Base development</li> </ul>	Taheripour, Chepeliev, Aguiar, Sajedinia
<i>Secondary Priorities</i>	
<ul style="list-style-type: none"> <li>• Document on contributing Supply-Use Tables to GTAP</li> </ul>	Corong
<ul style="list-style-type: none"> <li>• Non-CO<sub>2</sub> marginal abatement cost curves</li> </ul>	Chepeliev, van der Mensbrugge
<ul style="list-style-type: none"> <li>• Further explore the cross-entropy approach to the GTAP data balancing</li> </ul>	Chepeliev
<ul style="list-style-type: none"> <li>• GTAP circular economy database</li> </ul>	Chepeliev
<ul style="list-style-type: none"> <li>• GTAP FDI and FAS satellite data</li> </ul>	Corong
<ul style="list-style-type: none"> <li>• GTAP-RD baseline database (rebased SSP scenarios, and include projections for energy prices, IMF World Economic Outlook, OECD-FAO agricultural outlook, UN ITC's forward looking tariff data, UNCTAD's NTM)</li> </ul>	Corong
<i>Tertiary Priorities</i>	
<ul style="list-style-type: none"> <li>• Data / program separation</li> </ul>	McDougall

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

Tasks	Responsibility
<b>Trade and Development</b>	
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> <li>Continue to publish papers on trade, poverty, migration/labor and global supply chains</li> </ul>	Staff and Graduate Students
<ul style="list-style-type: none"> <li>Complete implementation of the heterogeneous export supply and import demand elasticities in a CGE model and investigate their role in shaping uncertainty in CGE policy outcomes</li> </ul>	Aguiar, Chepeliev, Golub, Hertel, van der Mensbrugge
<b>Global Energy and Environmental Issues</b>	
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> <li>Continue to publish papers on energy and environmental issues with a special focus on the land-water-energy-climate nexus</li> </ul>	Staff and Graduate Students

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

Tasks	Responsibility
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> <li>GTAPv7-AEZ-RD</li> </ul>	Corong, Baldos
<ul style="list-style-type: none"> <li>GTAPv7-FDI and FAS (static and recursive dynamic versions)</li> </ul>	Corong
<ul style="list-style-type: none"> <li>Modular source code for all GTAP (version 7) models</li> </ul>	Corong
<ul style="list-style-type: none"> <li>GTAP-HS-TRQ - Implementation of TRQs using “<i>ntuples</i>” to limit complementarity to only bilateral trade notes subject to TRQs. This will avoid unnecessarily increase in computing time in large models.</li> </ul>	Golub
<ul style="list-style-type: none"> <li>Code of the Dynamic GTAP Model (GDyn) resynced with the standard GTAP model version 7</li> </ul>	Golub

**4. Education Goal:** To expand and improve global economic analysis education worldwide

Tasks	Responsibility
<b>Education Plan</b>	
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> <li>GTAP 101 Courses</li> </ul>	Countryman, Batta, Akgul
<ul style="list-style-type: none"> <li>GTAP PTA Course</li> </ul>	Walmsley, Batta, Akgul
<ul style="list-style-type: none"> <li>GTAP Short Course</li> </ul>	Keeney, Batta, Akgul
<ul style="list-style-type: none"> <li>GTAP Dynamic Short Course</li> </ul>	Aguiar, Batta, Akgul
<ul style="list-style-type: none"> <li>GTAP-HET Course</li> </ul>	Akgul, Batta
<ul style="list-style-type: none"> <li>Continue implementing action items from strategic planning meeting</li> </ul>	Akgul, Batta
<i>Secondary Priorities</i>	
<ul style="list-style-type: none"> <li>Continue investigating additional special topic online mini-courses</li> </ul>	Akgul, van der Mensbrugge, Batta

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

Tasks	Responsibility
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> <li>Hire replacement Operations Manager</li> </ul>	van der Mensbrugge

6. **Collaboration Goal:** Actively seek opportunities for fostering collaboration with institutions around the world.

Tasks	Responsibility
<b>GTAP Conferences and Board Meetings</b>	
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> <li>2022 Conference (Kigali, Rwanda)</li> </ul>	Batta, van der Mensbrugge, UNECA
<ul style="list-style-type: none"> <li>2023 Conference (Bordeaux, France)</li> </ul>	Batta, van der Mensbrugge, Bouët
<ul style="list-style-type: none"> <li>2024 Conference (Fort Collins, Colorado, USA)</li> </ul>	Batta, van der Mensbrugge, Countryman

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

Tasks	Responsibility
<b>Improve user support system</b>	
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> <li>GTAP-L, gtapsupport, contactgtap: continue offering support</li> </ul>	Batta, Chepeliev
<ul style="list-style-type: none"> <li>Website redesign/redevelopment</li> </ul>	Douglas, van der Mensbrugge

## E. Summary of Discussions

### 1. Welcome and Overview

#### a. Overview and Issues

Dominique van der Mensbrugge (GTAP) opened the meeting welcoming everyone, introducing new board representatives, reviewing the meeting agenda, the Center's goals, agency reports, and network growth updates. Mondher Mimouni (ITC) was named the Alan A. Powell Award recipient for 2021 for outstanding service of a representative currently serving on the GTAP Advisory Board.

#### b. GTAP Data Base

Angel Aguiar (GTAP) reviewed the features of the Interim release, 10.1 He also mentioned the status of the second pre-release of GTAP 11, expected this August and the goals for the third and last pre-release, expected next year before the board meeting. There are many new and updates on the IO table front, especially from Africa due to the support of the UNECA. Additional upcoming releases were also mentioned.

Mondher Mimouni (ITC) indicated that their recent work is moving towards real-time data and that it may be of interest to improve GTAP, like the African Trade Observatory.

Antoine Bouet (IFPRI) asked whether there is anything in specific being done with respect to missing Africa Trade and this is a topic that got a lot of attention and was moved to the Parking Lot.

Cecilia Bellora (CEPII) expressed concern whether the proliferation of data products would affect documentation. Angel acknowledged that documentation is something that we struggle and have begun improving the documentation of pre-processing, but that in terms of the different versions or data products, the intention is to unify the extensions into one, for example, the APT version using FAO has become the new standard.

## **2. GTAP Data Base: Core Component Updates**

### **a. Biofuels Database**

Maksym Chepeliev (GTAP) provided an overview of the ongoing efforts on the development of the GTAP-BIO v10 Data Base. This database is the first attempt to develop a release of the GTAP-BIO Data Base at a fully disaggregated regional level merged with the GTAP-Power Data Base. In terms of the next steps, the GTAP-BIO Data Base is expected to be released to the Board Members by the end of the year.

### **b. Nutrition Database**

Maksym Chepeliev (GTAP) discussed the recent advancements in the incorporation of nutritional accounts to the GTAP Data Base and presented a sample application of linking between the developed nutritional database and the GTAP v7 model. A preliminary version of the GTAP nutritional database is planned to be shared with the Board Members by the end of summer. A corresponding documentation will be also posted in the GTAP Research Memorandum series.

### **c. Labor Database**

Erwin Corong (GTAP) presented a version of the GTAP Data Base which classifies labor flows by education and gender, based on the World Bank's Gendered Disaggregated Labor Database (GDLD). This satellite data will be shared with the Board once an updated version of GDLD is made available to the Center by the World Bank. Erwin also discussed the current labor disaggregation procedure in the GTAP data build and proposed updates to the underlying wage and employment input data for future GTAP Data Base versions.

### **d. Land Use Database**

Uris Baldos (GTAP) presented the GTAP-AEZ Data Base for version 10 as well as some recent applications of the GTAP AEZ models. Uris also presented the next steps including; 1) mainstreaming the LULC build in the standard build, 2) implementation of GTAP-AEZ model in v7 format and in GTAP recursive dynamic model 3) and exploring new land use maps.

## **3. Education and Outreach**

### **a. Education Plan**

Zeynep Akgul (GTAP) introduced the education plan for the first year of GTAP-U providing an overview of goals and current curriculum. She summarized the course participation data between July 2020 and October 2021. She updated the Board about the shift to a fully virtual format for the 2021 offerings of GTAP Short Course and GTAP Dynamic Short Course. The virtual format for the Short Course includes 3 Phases, where the online asynchronous classes are extended for another two weeks with new materials and videos that cover introduction to the GTAP open economy. Phase 2 follows with 2 days of live instruction with a series of lectures and labs which culminates into Phase 3 where participants work on group projects for a week with instructor assistance and present their findings at the live session. Zeynep also summarized the highlights of changes in GTAP-U. All the online courses have been migrated from the GTAP Website to Brightspace - the Learning Management System of Purdue. Three of the GTAP-U courses have been successfully delivered through Brightspace. All course materials have been undergoing a quality check, getting updated and categorized to be included in the module repository where instructors will be able to borrow materials to be used as complementary tools in their courses.

Future directions of GTAP-U are also discussed. The goals of the rest of 2021 include operationalizing module repository, developing protocols for new course proposals, providing materials in other languages and exploring new course possibilities.

The low application and participation rates of students from low-income countries in GTAP 101 are discussed to identify whether there is a need for a new introductory course that is customized to students from low-income countries or there is a need for more scholarships in GTAP 101. This is a topic that received a lot of attention and moved to the Parking Lot.

**b. GLASSNET**

Tom Hertel (GTAP) presented on GLASSNET, a five-year, NSF-funded project led by Hertel, with the goal of creating a network of networks working on global-to-local-to-global analysis of sustainability challenges related to land and water use. It is both interdisciplinary and international. The founding member networks include: GTAP, the Natural Capital Project, CUAHSI (a hydrology network), the Global Gridded Crop Model Intercomparison Project, GlobEcon, ISIMIP, the Global Land Programme, and the Land Use Change Knowledge Integration Network. Additional networks are welcome to join as well. The project kicked off with GLASSNET week in May of 2021, followed by four, monthly summer workshops on topics ranging from data integration and interoperability, to cyberinfrastructure, and research methods for bridging micro-and macro-models. GLASSNET resources are focused on building the network through workshops, early career scholar exchanges, conferences, courses and other shared activities. For more information, visit <https://mygeohub.org/groups/glassnet>.

**c. Journal of Global Economic Analysis**

Tom Hertel (GTAP) presented to the board that the JGEA is now in its sixth year of operation and has been included in a number of the major citation indexes. This is fully open source and free of charge, both for authors and for readers. This is made possible through the support of the Center for Global Trade Analysis and the GTAP Consortium. The JGEA is highly ranked among economics journals, based on the RePec Simple Impact Factor. Co-editors are Thomas Hertel and Niven Winchester. This year, the JGEA added four Associate Editors: Eddy Bekkers, Roberto Roson, Anna Strutt, and Da Zhang, allowing for a better division of labor and more coverage. The June, 2021 issue (just published) is the 11th issue. The top download to date is the paper documenting the standard GTAP model. This has been downloaded nearly 5,000 times and has a Google Scholar citation index of 175. The journal is building a healthy backlog of submissions. And we are featuring selected papers in our quarterly seminar series which has been well attended (generally between 50 and 100 attendees).

**d. CGTA PhD Students**

Tom Hertel (GTAP) presented to the board on the Center's seven graduate students, four of which, graduated this summer. Emiliano Lopez Barrera will take a job as Visiting Assistant Professor at Texas A&M University, Alma Cortes Selva has taken a job with Moody Analytics, Anton Yang has taken joint post-doctoral positions with Iowa State University and Yale University. Le Wang has completed his MS degree and will be continuing in the PhD program after a short break. Two of the remaining PhD students currently working with the Center: Wajiha Saeed and Zhan Wang, are planning to graduate in the summer of 2022. The final PhD student, Debradita Kundu, will be finishing in 2023. For those interested in recruiting these graduates, feel free to visit our [website](#) to find out more about their research interests and to obtain contact details.

**4. New Data and Modeling Developments**

**a. Non-CO2 Gases**

Dominique van der Mensbrugghe (GTAP) presented the Center's recent work on collecting data on so-called greenhouse gas (GHG) process emissions and their implementation in a CGE model.

Most process emissions have been part of the database in past releases—though not differentiated between pure process emissions and those linked to the combustion of fossil fuels—and also did not include carbon process emissions such as those found in the production of non-metallic minerals (e.g., cement) and chemicals. The new non-CO<sub>2</sub> database now has GHG emissions split between combustion and process emissions, including CO<sub>2</sub>. From a modeling perspective, process emissions are aggregated into a single bundle of emissions, with individual emissions weighted by their so-called global warming potential (relative to the impact of carbon emissions). Aggregate process emissions are substitutable with output in a top-level production nest, where the elasticity of substitution is calibrated to the marginal abatement curves provided by the U.S. Environmental Protection Agency (EPA). The breakdown of aggregate process emissions is done in a second CES nest, with low substitutability. The presentation ended with an illustrative simulation showing that including process emissions under an emission mitigation policy can lead to lower economic costs than mitigating combustion-based carbon emissions alone.

**b. GVCs post-Covid**

Maryla Maliszewska (World Bank) presented her recent research with Maksym Chepeliev and Dominique van der Mensbrugghe (GTAP) which analyzed the resilience of global value chains (GVCs) to COVID-19 pandemic, extreme weather events and trade tensions. Using the ENVISAGE model, they find that globalization would strengthen economic recovery from the COVID-19 pandemic and that developing countries can take steps to increase their resilience to future shocks through unilateral reforms on tariffs, trade facilitation and input diversification. They also find that a “hostile” GVC environment which encourages global reshoring, could dampen economic recovery and increase poverty especially in Sub-Saharan Africa. In contrast, a GVC “friendly” environment could boost incomes and reduce poverty. Maryla also shared that climate mitigation measures in developed countries could reshape GVCs away from carbon-intensive activities in the future, and that the design and implementation of carbon border adjustment schemes will be critical in determining their impact on trade and incomes in developing countries.

**5. Modeling Services**

**a. Services Data**

Angel Aguiar (GTAP) briefly explained the processing of services trade in GTAP 10 and the planned processing for GTAP 11 that includes the use of a new dataset BATIS, to be completed for the 3<sup>rd</sup> pre-release. With the emergence of yet another a new dataset of services by mode of supply (TiSMoS), the center began processing the data and established a steering committee with members of the board to help us properly make use of these data. It appears some of the modes of supply could be of meaningful use within the database construction. But more importantly, the change in Balance of Payments from 5 to 6, as we get on with the processing we plan to scrutiny merchandise trade data, and develop some case studies that focus in key countries and sectors where the changes are expected to be noticeable.

Joe Francois (Member at Large), Eddy Bekkers (WTO), (and hopefully someone from the EU focus, FIGARO project) will join the center to help identify and address the issues caused by the changing guidelines.

**b. Modeling FDI**

Eddy Bekkers (WTO) and Erwin Corong (GTAP) presented ongoing work on GTAP-FDI/FAS (Foreign Direct Investment and Foreign Affiliate Sales) Data Base and model. Eddy provided an overview of the data sources and methodology used to improve on the initial data released in 2014. Eddy also mentioned that this is a collaborative effort between USITC, World Bank, WTO and GTAP, and that GTAP-FDI/FAS Data Base version 10 and 11 will be made available in late 2021 and 2022, respectively. Erwin presented ongoing work on GTAP-FDI/FAS v7 model by first identifying key differences in model specifications and then discussing FDI/FAS model extensions for the standard GTAP and GTAP-RD (recursive dynamic) models.

## 6. The Circular Economy

### a. Data for the Circular Economy

Maksym Chepeliev (GTAP) provided an overview of the ongoing efforts that focus on the development of the GTAP circular economy (GTAP-CE) database. This includes disaggregation of the extraction sector in the standard GTAP Data Base into various mining activities, as well as explicit representation of the primary and secondary production activities for plastics, steel, aluminum, copper and other metals. Quantities of production by the corresponding activities are also estimated and represented in the GTAP-CE database. The database is currently undergoing testing and is being incorporated to the dynamic modelling framework. Once ready, the GTAP-CE database would be shared with the GTAP Board Members for the feedback and comments.

### b. Modeling the Circular Economy

Rob Dellink (OECD) provided an overview of the modelling efforts undertaken by the OECD team with the focus on the circular economy transition. These include development of the long-term baseline projections, as well as investigation of the set of policy measures that could be implemented to support the higher level of circularity. Rob indicated that the OECD team has produced several reports that focus on the circular economy transition and is currently involved into a number of country-specific and multi-region efforts in this policy area.

## 7. Center Management

### a. Center Finances

Dominique van der Mensbrugghe (GTAP) reported a \$316K surplus for FY21 and projected a \$125K surplus for FY22, reminding the board that surpluses in early years of a data base release cycle covers the latter years where sales revenue decreases.

## 8. GTAP Network

### a. GTAP Research Fellows

The Board approved the following to serve as GTAP Research Fellows for 2021-2024.

- George Philippidis
- Maureen Rimmer
- Mustapha Sadni Jallab
- Niven Winchester

The board also approved modified criteria proposed by the research fellows committee to broaden nomination and selection criteria to include more general CGE modeling and contributions to not only the GTAP Data Base, but also parameters, models, and related tools.

### b. GTAP Conferences

Presentations and subsequent discussions on the current and future GTAP Conferences were held with the following outcomes.

- **2021 Conference Update** – Ginger Batta (GTAP) updated the Board on the 24<sup>th</sup> Annual Conference on Global Economic Analysis, focusing on the shift to an online format, registration, and demographics.
- **2022 Conference Update** – Ginger Bata (GTAP) presented an update on holding the 2022 conference in Kigali, Rwanda. The conference program committee will be established soon and meet online and via email to begin discussions on potential sources of funding, plenary speakers, and organized session topics.
- **2023 Conference Proposal and Vote** – Antoine Bouët (IFPRI) presented the proposal to hold the 2023 conference at the University of Bordeaux in Bordeaux, France. The board approved this proposal.

## 9. Priorities for Forthcoming Year

- a. **Data:** (1) Deliver pre-release 2 & 3 of V11; (2) Finalize new agreement with IEA (3) Pursue integrated documentation using RMarkdown; (4) increase regional coverage in Sub-Saharan Africa in partnership with UNECA; (5) Finalize incorporation of BaTiS and pursue incorporation of TiSMoS (6) Setup a nutrition working group with WUT, GTAP, USDA, NIES and IFPRI; (7) assess new procedures to add countries to database.
- b. **Model:** (1) Pursue modularization of GTAP for both comparative static and GTAP-RD—modules include energy, power, BIO, emissions, AEZ and MIRO; (2) continue work on services including FDI/FAS (3) work towards making the GTAP model a full integrated assessment model (IAM) (4) develop a prototype GTAP-SR (sub-regional) model based on the WiNDC U.S. database.
- c. **Research:** (1) Baseline database and back-casting; (2) circular economy; (3) estimation of new Armington and CDE parameters; (4) evolution of global value chains, trade and gender; (5) implementation of the Paris Agreement and net-zero emission targets with a focus on new technologies, non-CO2 abatement, co-benefits and CBAM (6) cross-disciplinary and cross-institution research in the context of the GLASSNET and INFEWS projects.
- d. **Network:** (1) Pursue web-upgrade—open source visualization tools, cross discipline integration, instructional tools; (2) Finish modularization of core units for the portfolio of courses; assess possibilities of additional 300-level courses for example GTAP-E, GTAP-HS, GTAP-M(argins), TASTE; (3) develop proposals for future venues for board meetings and conferences.

## 10. Parking Lot

### a. Informal Trade

This session was devoted to a discussion on informal trade—typically trade that is not recorded in official government trade statistics. Informal trade is particularly prevalent in Sub-Saharan Africa and present to a lesser extent in South Asia and South-East Asia. UNECA has initiated work on informal trade between coastal countries in West Africa, but it has not yet been published. The discussion also highlighted three other initiatives that are worth mentioning in Africa: (1) The CILSS (Comité Inter-Etats de Lutte contre la Sècheresse au Sahel) has a project that covers trade in agricultural products between the 15 ECOWAS countries, including Mauritania and Chad, and is based on a collaboration with the private sector; (2) The Food and Nutrition Security Working Group is assessing informal trade in Eastern Africa; and (3) A study by the Uganda Bureau of Statistics covering informal trade in all Ugandan products with neighboring countries. There is no coordination across these initiatives at the continental level and the Board discussed the need for improving the collection of these statistics and their integration in CGE analysis of the AfCFTA (even if it implies modelling the entire informal sector of African economies).

### b. GTAP-U – Low-income dedicated course

Low participation rates of students from low-income countries to GTAP-U courses (especially GTAP 101) and GTAP Conferences are discussed. One of the goals for this year is identified as increasing the number of scholarships to engage interest of students in courses and the GTAP conference. Another goal is identified as doing market research to investigate if there is sufficient demand for a new course as well as increasing visibility of GTAP-U courses with the help of the Board Members.

Jeffrey Condon (McKinsey) suggested partnering with interested parties to produce AfCFTA specific materials and cooperating with other agencies who could make nominations from their organizations for enrollment.

Stephen Karingi (UNECA) and Antoine Bouët (IFPRI) also supported the need for increased student enrollment from low-income countries. Zeynep Akgul and Mary Burfisher will be in

contact with Stephen Karingi to investigate the demand for introductory course in CGE amongst students in low-income countries and to organize a student session at the GTAP Conference.