



United Nations Economic Commission for Africa

Report on the Use of the Global Trade Analysis Project (GTAP) Tools For the period 2016-2017

Prepared for the GTAP Advisory Board Meeting

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Purdue University, West Lafayette, USA

I. Introduction

As a major think-tank based in the African continent, the United Nations Economic Commission for Africa (ECA) is mandated to produce high quality research on emerging issues and key priorities for Africa. In that sense, the tools made available by the Global Trade Analysis Project (GTAP) to carry out various policy analyses are taken very seriously and repeatedly used by the ECA. These allow the Commission to provide its Member States as well as the African Regional Economic Communities (RECs), often on a demand-driven basis, with empirically-based policy recommendations. In fact, the use of GTAP tools can go a long way in influencing policy decisions across the continent. Over the last few years, and just to name a few examples, ECA's work on the illicit financial flows, African Growth and Opportunity Act (AGOA), the Economic Partnership Agreements (EPAs) and the Continental Free Trade Area (CFTA) has been particularly instrumental in assisting African Member States and RECs to shape their related policies and responses.

GTAP tools are not just used by ECA, at its headquarter situated in Addis Ababa, but also in several of its sub-regional offices (SROs) located in Africa's five main regions. ECA

SROs are in charge of producing yearly country profiles which require good quality data and robust empirical analysis. Therefore, considerable efforts are being made by ECA to improve the availability and reliability of data for Africa. This is achieved through the collection of national data by ECA SROs that are then checked and compiled by ECA's African Centre for Statistics (ACS), working in close collaboration with national statistic offices throughout the Continent. As a consequence, ECA is committed to working closely with the GTAP network to make sure that better data for the 54 African countries can be made widely available for policy analysis on the issues that matter most for Africa.

II. Recent research carried out by ECA using GTAP tools

For the period 2016-2017, ECA has produced, through the African Trade Policy Centre (ATPC) and the African Climate Policy Centre (ACPC) a paper on “**Climate Change, Agricultural Production and Trade in Africa**” which has been submitted and accepted for presentation at the 20th Annual Global Economic Analysis Conference to be held at Purdue University in West Lafayette, USA, on 7-9 June 2017.

Other notable research pieces using modeling tools has been undertaken by ECA SRO for East Africa: “**Analysis of the Impact of the EAC-EU Economic Partnership Agreement on the EAC economies**”, and by ECA SRO for West Africa on the “**Impact of the implementation of the ECOWAS CET and West Africa-Economic Partnership Agreements (EPAs) on the dynamics of the integration process and the structural transformation of West African economies**”.

In addition to the research carried out over the 2016-2017 period-which main issues and findings are summarized below, several research papers completed earlier have been recently published. These include: “**Optimal Regional Trade-Integration Schemes in North Africa: Towards a Pro-Industrialization Policy**” in Journal of Economic Integration (Vol. 32, No. 3, September 2016); “**Preferential trade agreements in**

Africa: lessons from the tripartite free trade agreements and an African continent-wide FTA” in Cambridge University Press (October 2016) and “**Export Diversification and Intra-Industry Trade in Africa**” in Routledge African Studies (October 2016).

1) Climate Change, Agricultural Production and Trade in Africa

The fragility in Africa’s food security systems is compounded by climate change. Erratic shortages in food supply triggered by climate variability and climate change impacts on production systems, will continue to generate escalations in food prices and livelihood insecurity. Identifying alternative pathways of adapting food security beyond just production systems, is thus, critical. Recently, there is a growing political will and determination among African leaders in pursuing regionalism in trade that opens up new trading blocks and trade corridors between countries. Besides the economic benefits that this bestows, there is an emerging opportunity in tackling the recurrent volatility in food prices and extreme shortages that characterizes food insecurity in Africa especially under a changing climate. On the other hand, these are equally opportunities in empowering farmers by enriching farming practices as a rewarding enterprise beyond just subsistence especially as Africa rapidly urbanizes and experiences a demographic shift that is more likely to be less interested in agricultural practices. Building on the emerging trade corridors, are opportunities for the development of business models around key agricultural commodities that propel them into the marketplace orientated by the demand and supply axis shaped by changes in the climate system across the landscape. Safeguarding the volumetric flow of an agricultural commodity into the marketplace of demand is a critical adaptation measure in the security of food business transactions and fundamental in achieving food security.

2) Analysis of the Impact of the EAC-EU Economic Partnership Agreement on the EAC economies

Since the early 2000s the EAC manufacturing sector has been growing quite rapidly, but its growth has not kept pace with the overall expansion of the economy; as a

consequence, manufacturing value added has declined as a share of GDP. The differences in manufacturing capacity between the EAC and the EU are enormous. Manufacturing value added in the EAC amounts to less than 0.7 percent of that in the EU-28. This should raise some concern about the long term growth and development of EAC manufacturing. The EU remains an important trading and development partner for the EAC but its position has been declining rapidly over the last decade and a half. The Economic Partnership Agreements (EPAs) are ostensibly designed to strengthen regional integration in Africa, yet it is clear that they are proving divisive. The fact that the EAC-EU EPA negotiation process has taken so long (over twelve years) and has been thwarted with many setbacks suggests that the European Commission has misjudged the mood.

Simulations undertaken based on the standard static GTAP CGE model suggest that the EAC-EU EPA may have a small but negative impact on GDP. Imports from the EU would increase significantly as a result of the full implementation of the EPA, but mostly at the cost of imports from other regions (such as Asia). EAC exports to the EU only increase marginally, leading to a widening of the existing trade deficit with the EU. The EAC-EU EPA could have negative impact on intra-regional trade. Intra-EAC imports would decline significantly (mainly in manufacturing), while there would also be marginal negative effects on manufacturing output in EAC countries. Tariff revenues accruing from EU imports would fall.

Regarding the way forward, the signing of the EPAs by individual member states (rather than the EAC as a block) would be highly divisive, and could undermine the EAC Common Market Protocol and EAC Single Market. The reduction in policy space, particularly with regard to industrial policy, needs to be fully taken into account. The EAC is not alone in struggling to reach an agreement on the EPAs with the EU. Given the problems that other regional blocks have also encountered with the EPAs, and the contradictions the EPA engenders with the achievement of the Continental FTA, politically it may be best to raise the issue to the level of the African Union. There are a number of counter-proposals that could realistically put on the table instead of the EPA:

- i) proposing a revision of the EU's GSP regime, so that any negative impacts could be

mitigated for non-LDC partners; ii) exploring the possibility that LDC status is awarded to regional blocks rather than individual countries (the EAC would clearly comply if LDC status criteria were applied at the level of the REC); iii) request a delay in implementing the EPAs with the EU until greater progress is made with regards to the completion of the Continental Free Trade Area.

3) Impact of the implementation of the ECOWAS CET and West Africa-Economic Partnership Agreements (EPAs) on the dynamics of the integration process and the structural transformation of West African economies

After two years of implementation of the ECOWAS-CET and approval of the EPAs by the ECOWAS Heads of State and Government Summit in Accra in 2014, the ECA as a knowledge generation institution and on the line of providing technical assistance to Member States in terms of decision-making tools, initiated reflection on the potential impacts of the implementation of these two trade reforms on West Africa's economic performance. Partial equilibrium analysis using the TRIST model was carried out relying on the latest World Bank enterprises survey data and international trade transaction data from selected West African countries.

Results show that, in terms of tariff change, the implementation of the CET will be more advantageous for countries which import more in the sub-region, but the application of the EPA in addition to the CET could lead to a decline or increase in taxation based on the type and quantity of products imported by the country (e.g. increase in Benin and decrease in Niger and Togo). The implementation of the ECOWAS CET will lead to a rise in imports from ECOWAS countries and a decrease in those from the EU and a heterogeneous change in imports from the remaining African countries. The budgetary cost linked to the implementation of the EPAs will be high for countries in the sub-region in terms of the decrease in revenue. The marginal net positive effects (less than 1%) of the implementation of the EPAs on profitability (productivity, employment) of enterprises through the decrease in costs of inputs and equipment can be envisaged only in the short term. The very marginal net positive effects of enterprises due to the

implementation of the EPAs are more perceptible for enterprises which sell imported goods and not the manufacturing companies, reflecting a situation where the imported goods become more competitive than the locally produced goods. This could have a negative impact on the life span of local manufacturing companies (local industries). The marginal positive effects on the profitability of some manufacturing companies, especially the largest ones (mainly those mostly engaged in the sale of imported goods), shows that the EPAs alone as a reform will be unfavorable in the long term for West Africa in terms of profitability, productivity, and employment for manufacturing companies and also unfavorable for structural transformation through industrialization.

III. ECA's involvement in the 20th Annual Global Economic Analysis Conference

ECA staff members are expected to attend this year's Conference. They will be actively engaged, taking part in the GTAP Board meeting as well as during the Conference, particularly chairing and organizing a session on **"How taking into account climate change can help Africa to pursue better trade policies, with a focus on food security"** that will be held on 8 June; ECA will be sponsoring participants for this session. The objective of the session is to examine the interactions between climate change, agricultural production, trade and their overarching effects on food security in Africa. In this interactive system, trade is expected to provide a pull factor in addressing shortfalls from agricultural production emerging under climate triggered shifts in changing crop habitats and achieving food security. Despite the considerable opportunities trade creates in moving goods from surplus to deficit areas, the trade aspect in addressing food security and climate change in Africa seems to be largely missing. Three research papers will be presented during the session, namely **"Attaining food and environment security in an area of globalization"** (by Thomas Hertel and Uris Lantz Baldos), **"Improving the resilience of African countries to food shocks"** (by Michael Puma, Roland Maio and Mark Tadross) and **"Climate change, agricultural production and trade in Africa"** (by Yodit Balcha Hailemariam and Jamie Macleod). Subsequent discussion and recommendations from the session will seek to strengthen the ongoing project activities ATPC and ACPC are conducting in East and West Africa looking at the interactions

between climate change, agricultural trade and food security. A nexus approach is being used to develop a framework that diagnoses emerging opportunities for agricultural trade in a changing climate and responds to food security in Africa.

IV. Capacity building activities

In 2016-2017, ECA has conducting two practical basic/intermediate level trainings-courses on “**Trade Policy Analysis with a focus on Gravity and CGE Modeling**”. Both trainings were organized jointly by ECA (specifically, ATPC and the African Institute for Economic Development and Planning (IDEP)) and WTO. Both courses were held in Dakar, Senegal, at IDEP, and targeted to representatives of African Member States, RECs and WTO Chairs. The first course took place from 21 to 25 November 2016 (given in English); the second one on 27-31 March 2017 (in French). Among others, participants were sensitized to the GTAP database (coverage, structure, data) and its use as a global social accounting matrix for CGE models. References were also made to the GTAP models (which were obviously not covered during ECA’s training) and GTAP courses for the participants to be aware of opportunities in enhancing further their skills on other tools. Feedback from participants attending the training were extremely positive and calling for the training to be taken a step forward (i.e. advanced level). See envisaged online course for Africa on modelling under V.

Not only ECA did provide training (including sensitization to GTAP database) but ECA staff members actually also took part (or are about to enroll) in various GTAP courses (i.e. GTAP 101 course and GTAP short course); with more staff members to be trained in the future to continue enhancing ECA staff knowledge and skills on GTAP network and tools.

ECA also organized a capacity building event on “**Research and training Needs for Implementing the CFTA**” during the first even Africa Trade Week that took place at the African Union, in Addis Ababa, Ethiopia, on 28-30 November 2016.

V. Looking forward

ECA is already planning work for 2017-2018 which could considerably contribute to enhance the use of GTAP tools by African researchers and policy makers; with potential to significantly improve policy making, with a strong focus placed in the area of trade, through the use of GTAP tools.

1) Scaling-up capacity building activities on modelling techniques

Building on the success of recent on-site courses on “Trade Policy Analysis with a focus on Gravity and CGE Modeling” and strong demand from African Member States, RECs and Researchers, ECA is planning to **develop an online course focusing on modelling techniques (i.e. especially partial and general equilibrium models) with concrete applications that are relevant to Africa**. Collaboration with other partners (such as IFPRI and WTO) is envisaged for the development and delivery of the course.

2) Pursuing policy research based on modelling tools

ECA plans to continue undertaking robust empirical analysis to assist African Member States and RECs in the formulation of their policies.

On area of particular interest for Africa that is already being looked at by ECA is **Brexit** (which will lead to the definition of a new trade policy for the UK with its trading partners) that offers an unprecedented opportunity for Africa and the UK to mutually explore options for a win-win relationship looking forward. It is in this framework that the African Trade Policy Centre of ECA, working closely with the Overseas Development Institute (ODI), is actively contributing to the constructive thinking aimed at facilitating the development of a new UK-Africa trade partnership.

Research based on modelling tools for the period 2017-2018 is also foreseen in the area of Africa’s engagement with emerging economies.

3) Contributing to the improvement of Africa's data and coverage in the GTAP database

Analysis of reforms on African priority issues is limited by, although improving, poor data availability. In particular, latest GTAP database (i.e. GTAP 9) has information for 26 individual African countries; with the rest of 28 countries lumped into 6 groups.

ECA, through ATPC and ACS, is currently making efforts to fill the gap by **developing or/and improving a number of input-output tables for African countries**. Once completed, this information will be provided to GTAP (with an objective of 2-3 tables per year being developed looking forward) so that the database can be improved further in terms of data quality and coverage of African countries.