Proceedings of the technical workshop on the use of spatial equilibrium models in the assessment of impacts of non-tariff barriers to trade in the East African Community (EAC)

22nd – 24th September 2008
Lake Victoria Hotel, Entebbe Uganda

Acronyms

ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
CBT	cross border trade
CET	Common External Tariff
CGIAR	Consultative Group on International Agricultural Research
COMESA	Common Market for Eastern and Southern Africa
COMTRADE	United Nations- Commodity Trade Statistics
DRC	Democratic Republic of Congo
EABC	East African Business Council
EAC	East African Community
ECA	Eastern and Central Africa
ECAPAPA	Eastern and Central Africa Programme for Agricultural Policy Analysis
EPRC	Economic Policy Research Centre
ESRF	Economic Social Research Foundation
GAMS	General Algebraic Modeling System
GATT	General Agreement on Trade and Tariffs
ICRISAT	International Crop Research Institute for the Semi-Arid Tropics
IFPRI	International Food Policy Research Institute
IITA	International Institute of Tropical Agriculture
ILRI	International Livestock Research Institute
IWMI	International Water Management Institute
KIPPRA	Kenya Institute of Public Policy Research Analysis
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries, Uganda
MFSC	Ministry of Agriculture Food Security and Cooperatives, Tanzania
MLF	Ministry of Livestock and Fisheries, Tanzania
NBS	National Bureau of Statistics, Tanzania
NTBs	non tariff barriers
PAAP	Policy Analysis and Advocacy Programme of ASARECA
PAAP	Programme Analysis and advocacy Programme
RATES	Regional Agriculture Trade Expansion Support
ReSAKSS	Regional Strategic Analysis and Knowledge Support System
SEM	Spatial Equilibrium Modelling
UBOS	Uganda Bureau of Statistics
UNCST	Uganda National Council of Science and Technology

Session I

Opening Remarks

Dr. Michael Waithaka, manager of the Programme Analysis and advocacy Programme (PAAP) of the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) welcomed participants to the technical workshop on spatial equilibrium modelling (SEM). He noted that the participants in the earlier workshop held in 2007 were originally drawn from three institutions in the three countries of the study; Economic Social Research Foundation (ESRF) in Tanzania, Economic Policy Research Centre (EPRC) in Uganda and Kenya Institute of Public Policy Research Analysis (KIPPRA). Changes within the institutions overtime had meant that some people could no longer be available for this work. He welcomed all those who had taken over the reins in ensuring that this work was completed, including Dr. Joseph Karugia who had taken over from Dr. Godfrey Bahiigwa as the Regional Strategic Analysis and Knowledge Support System (ReSAKSS) Coordinator and Dr. Ayele Gelan who was now conducting the SEM analysis in place of Antoine Bouet of the International Food Policy Research Institute (IFPRI).

Introduction and objectives of the workshop

Dr. Joseph Karugia of ReSAKSS gave a presentation outlining the background to this project and the rationale for holding the workshop. He noted that multilateral trade agreements had brought down tariff barriers to trade following negotiations under GATT and subsequent rounds. However, non-tariff barriers (NTBs) have gained prominence as alternative trade policy instruments for domestic industry protection or for regulating trade. NTBs are barriers to trade that are not tariffs and include both trade-restricting measures (quotas, technical barriers, etc) and trade-promoting measures (export subsidies etc). In their application, NTBs are increasingly raising market access concerns at both global and regional levels.

Dr Joseph Karugia further noted that member states of the EAC had signed a protocol on March 2, 2004 for establishment of the East African Community Customs Union which commits them to eliminate NTBs. However, despite this agreement, NTBs are still applied by member states. In 2003, RATES, noted that bureaucratic import/export procedures inhibit formal trade between the EAC countries. Inappropriate policy interventions in the commodity markets tend to distort relative prices thereby encouraging informal cross-border trade- a more costly alternative. In light of its effects on trade, the East African Business Council study (EABC) which is a consortium for traders in the region commissioned a study in 2004 to seek views about the range and nature of the various impediments to trade in the region. The EABC study findings showed that NTBs evolve around business registration and licensing, customs procedures, police road checks, road axle regulations and control, and standards and certification requirements.

Between November 2006 and February 2007, a follow up East Africa Community Business Climate Index Survey was conducted to assess the business climate and how it impacts on business operations within the region on a total of 504 respondents drawn from the capital cities of three EAC countries; Uganda, Kenya and Tanzania. The questionnaire used, focused on six trade-related clusters: customs procedures, immigration and work permits, business registration and licensing, police road blocks, weighbridge stations and quality standards and export certification. Perceptions of the

business community and trade institutions regarding the then business climate were also sought.

The 2007 findings showed that while businesses experienced obstacles under all the six trade related areas, the biggest constraint were the customs procedures. On average, Kenyan businesses were more affected than their counterparts in Tanzania and Uganda, a situation no different from the 2004 findings. Additionally, the survey found that time spent, extra costs and corrupt practices under the six trade related cluster areas were biggest obstacles to trade in the region. However, business climate factors were regarded as equally important. These factors included access to land and business premises, access to skilled labour, quality and cost of transport, access and cost of energy and telecommunications, legal and regulatory framework, access to business finance and business support services, and ease of crossing EAC borders.

However, both the earlier EABC survey of 2004 and the follow up, did not quantify the welfare effects of NTBs to the region and to the various sectors in the economy. It was acknowledged that such evidence was necessary to advocate for policy action for needed reforms. Dr. Bahigwa, then the ReSAKSS Coordinator, together with Dr. Michael Waithaka, then manager of the Eastern and Central Africa Programme for Agricultural Policy Analysis (ECAPAPA) now the Policy Analysis and Advocacy Programme (PAAP) of ASARECA and other partners hence, conceived a project proposal to fill this key knowledge gap.

Project objectives

The overall objective of the project was to assess the impact of NTBs on cross-border trade in EAC with a view to suggesting areas of reform in order to enhance regional trade. Specifically, the project would,

- Establish the number and types of NTBs applicable within EAC partner states as well as regional trading partners
- Quantify effects of NTBs on cross-border trade among EAC partner states and their key regional trading partners
- Estimate trade benefits that would accrue to the region with reduction and eventual elimination of NTBs

Expected project outputs

This project on quantifying the welfare impacts of NTBs in EAC was expected to deliver the following results;

- Estimates of the quantitative welfare effects of NTBs
- Estimates of the relative importance of various NTBs to trade in EAC
- Strengthened capacity in EAC and partner institutions in modelling impacts of trade policy instruments on trade and welfare in the region
- Practical proposals for fast-tracking elimination of NTBs in the EAC region

In the pursuit of the realisation of these outputs, ReSAKSS worked closely with the Kenya Institute of Public Policy Research Analysis (KIPPRA), the Economic Policy Research Centre (EPRC) in Uganda and the Economic Social Research Foundation (ESRF) in Tanzania. By the time of this workshop, country level data had been collected from the field and preliminary results had been generated.

Purpose of the workshop

- Close key data gaps and hence enable robust estimation of NTB impacts
- Enhance economic modelling capacities (SEM) in the region
- Generate evidence based policy messages
- Develop dissemination materials

Expected output of the workshop

- Finalized impact analysis components of NTB study based on the SEM model
- Targeted policy messages from the results of the analysis
- Enhanced local capacity for carrying out impact analysis of trade policies in the EAC region

Session II

Country and regional paper presentations

Presentation 1

Quantification of the impact of non tariff barriers (NTBs) on cross border agricultural trade in EAC: The case of Tanzania. By Mr. John Johnson Kajiba, Researcher, Economic and Social Research Foundation, Tanzania.

Mr. John Kajiba presented results of the descriptive analysis of the Tanzania case study. He noted that the Tanzania survey covered 16 out of the 20 regions of Mainland Tanzania. The regions selected covered the northern, central and southern trading zones and also account for variations in trading volumes. As agreed regionally, the survey focused on trade in two commodities i.e. maize and beef cattle. Primary data were obtained by the use of structured questionnaires administered to custom officials at border posts, traders and transporters of maize and beef cattle. The tools were tailored to fetch information on NTBs such as customs administrative requirements, road blocks, weighbridges, immigration issues, licensing, transiting, municipal permits, council permits, standards and certification. Statistics from various institutions were also sought and these included the Ministry of Agriculture Food Security and Cooperative (MFSC), National Bureau of Statistics (NBS), Ministry of Livestock and Fisheries (MLF) and the ESRF library.

Findings of the Tanzania case study

- For both commodities, maize and beef; there are more transporters than traders in cross border trade
- Trucks, trailers, lorries and pick ups were the means used to transport commodities across borders; however, pick ups were not used in livestock trade. Trucks dominate in livestock trade, while lorries were more prevalent in maize trade.
- Domestic sales and purchases account for over 90% of trade in maize and beef
- Cross border trade is still limited; however, trade in maize across borders is slightly more than trade in live cattle.
- Administrative requirements were defined to include procedures for licensing, road toll stations, transiting, municipal and council permits, weigh bridges,

immigration, cattle branding requirements, customs clearance, standards and certification and security regulations. Of these irregularities and inefficiencies in procedures and fees for council permits, licensing, security, municipal permits, weigh bridges, standards and certification (and branding in cattle trade) posed the greatest cost to traders.

- Traders of maize spent an average of half a day before concluding a business trip while a livestock trip took about 1½ days. On average, 4 trips were conducted per month across the two commodities
- At least three road blocks per trip are encountered per trip of maize or livestock
- A typical trip consists of 21 tons of maize or 33 heads of cattle
- Duties paid by traders were defined to include excise, cess, transport license, permit charges, levies and other taxes/duties. On average, total duties paid per trip amounted to US$ 46 for maize and US$ 50.5 for livestock. Cess duties accounted for up to 72% of this cost in maize trade and 53% in livestock trade.
- Vehicle hire and maintenance costs account for 71% of the costs incurred while transporting maize per trip, and 58% of costs incurred in livestock trade.
- Maize traders perceived abrupt bans on trade as their major source of loss while livestock traders felt too many road blocks where their greatest barrier to effective CBT.

The conclusions drawn from the study were that

- Irregularities in administrative requirements; especially council permit charges and procedures and too many road blocks are a major source of traders monetary cost
- There is a need for rationalisation of procedures at all check points in the country to enhance cross border trade
- Staff skill levels need to be improved and their number at all check points increased to lower monetary loss incurred by traders
- Improve custom procedures to remove unnecessary hassles in the course of trading
- Infrastructure improvement is needed to reduce on vehicle hire and maintenance costs and increase number of trips.

However, Mr. Kajiba also noted that there was need for further cleaning of the descriptive variables and some variables needed to be grouped in order to reduce the long list of variable during analysis and presentation of results.

Discussion

Question: Why are loading costs for maize much higher (5 - 7 times more) than for cattle?
Response: As noted earlier, a typical trip consists of 21 tons of maize compared to only 33 heads of cattle. Hence a lot more effort is needed to load the maize compared to cattle.

Question: Are there no traders who double as transporters?
Response: The study design did not allow for that additional grouping

Question: The number of transporters is higher than traders. Shouldn't that be the reverse since traders in the region are usually small scale and numerous? Were the numbers a result of the sampling method used in the study?
Response: In this study, interviews were conducted along actual trading routes, border points and guest houses. Transporters were hence defined as the drivers of maize and beef along these routes (i.e. truck drivers not truck owners) and these were easier to access than the traders, hence more transporters were interviewed. Traders were those formally registered to conduct maize or beef cattle trade. Traders conducting business along the informal trading routes could not be accessed within the limits of this study.

Comment: A lot of the data has been disaggregated; let the aggregation of data sets be done at the regional reporting level after all necessary analysis has been finalised.

Question: Exactly which commodity did the study focus on; the transportation of live animals or beef?
Response: The study focused on beef cattle and maize and not value added products.

Question: Is the central government aware of the bans on cross district trade by local council authorities in Tanzania?
Response: This usually trickles down as central government policy and the local councils just put the directives into effect.

Comment: District councils have been challenged with the need to collect cess. What alternative options are we offering to replace cess? Also cess payments need to be harmonised so that traders can pay at one check point rather than having to pay cess in each council that is traversed in the course of business.

Comment: Collecting cess from traders by local government administration as a source of revenue is not sustainable. Furthermore, the livestock sector is over taxed but nothing is ploughed back in to the sector in form of improved infrastructure and other incentives. There is no value added to participants along the livestock value chain.
Comment: We need to document trends in the occurrence of trade bans and their impacts. How do trade bans affect participants along the value chain? Trade bans ultimately impact the poor more and should not be an option in the region.

Presentation 2
The Impact of Non-Tariff Barriers (NTBs) on Cross-Border Trade in Eastern Africa. By Julliet Wanjiku, ReSAKSS Eastern and Central Africa node

Ms. Wanjiku Julliet presented the regional analysis of the data on NTBs in the East African Community (EAC). In her presentation, she reiterated the earlier presenters' comments on the background to this project. She noted that trade offers prospects for economic growth and prosperity in the region. However, barriers to trade affect this potential - reducing the benefits accruing to participants in trade. In the EAC, traders face NTBs which impede smooth trade and investment in the region (EABC, 2005). Ms. Wanjiku further noted that this study focuses on all NTBs encountered in cross-border trade in maize and beef cattle: i.e. administrative procedures and regulations, licences, customs, immigration, infrastructure (transport, warehousing and communication), veterinary services, etc.

The current study was complementary to the earlier EABC study: The EABC study had sampled the business community and government ministries. It also used a qualitative survey-based methodology that only captured the perceptions of actors. This current NTB study sampled traders and transporters of maize and beef cattle plus customs officials for validation purposes. The study also uses both qualitative and quantitative survey methods (including spatial equilibrium modelling) to quantify the effects of NTBs on various actors in the EAC.

The study interviewed transporters and traders of maize and live beef cattle along the formal trading routes to the border posts of Busia, Malaba, Mtukula, Sirari, Namanga, Taveta, Lunga Lunga, Rombo and Vanga.

Findings

- Major sources of NTBs include administrative requirements mainly licenses, municipal and council permits in all countries; security in Tanzania, taxes/duties mainly excise and cess duty, road blocks, custom barriers, weighbridges, licensing, corruption e.g. through bribes, etc
- Licenses and council permits main requirements across the 3 countries, security and branding of cattle important in Tanzania
- In Tanzania almost all traders and transporters gave bribe, In Kenya more than half bribed. Relatively more transporters bribed than the traders. However, Tanzanian traders pay significantly lower bribes that in the rest of EAC
- Kenya has highest number of road blocks impeding free trade which leads to wastage of time and encourages encourage bribery. She noted that Kenya had 47 roadblocks along the Mombasa-Busia highway. However, maize traders in Uganda encounter an average of 14 road blocks per trip
- Most traders and transporters perceive roadblocks as expensive to very expensive in terms of monetary costs incurred in bribing officials or time lost.
- Uganda had the highest number of weigh bridges encountered along the trading route (5) followed by Tanzania (3) and only 2 in Kenya (maize traders only). Weigh bridges posit additional costs to traders due to faulty machines and corruption
- Kenya is instituting reforms since August 2008 which includes reducing the number of road blocks from 47 to 14 with additional highway police patrols to assure security and weighing at only the point of departure to facilitate cross border trade.
- Ugandan maize traders lost the most time in queues at customs (an average of 7 hours per trip) followed by Kenyan maize and beef traders who lose an average of 3 hours each. Customs seemed relatively more efficient in Tanzania in terms of hours lost in queues (~1 hour only).
- Few staff manning customs was the leading cause of reported delays
- Traders in maize lose up to 3½ trips in every 10 possible trips due to NTBs while livestock traders lose up to 2 trips in every 10 trips. These losses are highest in Kenya followed by Uganda
- In Kenya, major causes of lost time were discrimination at customs, many road blocks, corruption in licensing and due to faulty weighbridges. In Tanzania tme losses were mainly due to many roadblocks and in Uganda time was lost during transiting through corruption and insecurity

- The highest extra monetary costs (bribes) paid in the region are for customs, council and municipal permits, road blocks and licensing. The costs are relatively higher in Kenya followed by Uganda
- On average traders pay the highest extra costs at road blocks; with Ugandan traders paying relatively more.
- Transport costs account for the highest cost of trade in the region (over 50% across all countries) mainly due to poor infrastructure resulting in high vehicle maintenance costs

Recommendations from the study

In the presentation of the regional findings Ms. Wanjiku gave the following recommendations to be refined by participants

- Lowering or removal of barriers to trade e.g. Government and stakeholders-elimination of the many road blocks etc
- Government and private sector to come up with mechanisms for monitoring and eventual removal of NTB
- Custom officials special re-training to reduce barriers at the office
- More custom officials employed where there are many trading activities to avoid delay
- Mandatory receipts to be introduced which traders should demand for any money given out. This should be coupled with heavy penalty for those caught in any corruption act.
- Further research to find out the proportion of trade profits taken up by the NTB

Presentation 3

Quantification of the Impact of Non Tariff Barriers on Cross-Border Agricultural Trade in the EAC: The Case of Uganda. By Nicholas Kilimani, Researcher, Economic Policy Research Centre, Kampala

After giving a preamble on the rationale for this study, Mr. Nicholas Kilimani gave a descriptive of the findings of the Uganda case study on the NTBs in maize and livestock cross border trade. He noted that the study had focused on participants along the formal trading routes to the border points of Mutukula (Uganda- Tanzania), Katuna (Uganda-Rwanda), Mpondwe (Uganda-DRC) and Nimule (Uganda-Sudan). The respondents included customs officers in the Uganda Revenue Authority (URA), companies and individuals engaged in trade both domestic and regional including exporters and importers, maize and beef cattle traders and transporters, maize millers and abattoir owners.

Findings

- The largest proportion of cattle trade in Uganda is domestic (~68% of cattle trade). This limited cross border trade in live cattle may be because Uganda has only two cattle corridors; high cost of transportation due to poor road infrastructure (e.g. the route to the Uganda-Sudan border at Nimule boarder is impassable in the wet season) and high oil prices.
- Traders sometimes privately hire construction companies to grade some of the sections along the trading routes.
- The requirements for cross border trade such as customs clearance, immigration costs and standards and certification account for 44.6 percent of the total cost of cattle transportation.

- Transport license fees (paid to URA) accounted for the largest proportion of duties paid
- In Uganda, respondents defined road blocks as the highway patrols and animal check control points of the Ministry of Agriculture.
- Only 15% of formal trade in maize is cross border trade
- There is discrimination in cross border transportation. Traders had to incur high monetary costs to overcome discrimination at border crossings
- Traders perceived the levies charged (~ US$ 6.75) as reasonable and the centralization of annual permit fees payment through the Ministry of Agriculture as conducive to trade.
- The time lost during transiting was reported to be an average of 1 day.
- 56 percent of the traders interviewed reported an average number of road blocks from the origin of the beef cattle to the destination to be approximately three (3).
- Traders reported a proliferation of revenue collection points per animal from the area of origin up to the slaughter house.
- Additional constraints to CBT include language barrier (only a few Ugandan traders are skilled in Swahili)

Recommendations from the Ugandan Case Study

- Invest in improvement of trade infrastructure
- Harmonize requirements for cross border trade
- Enforcement of Standards. Post harvest handling practices for maize are poor in Uganda resulting in poor quality maize. Much of it does not qualify for the Kenyan market.

Discussion of the Ugandan case study and the regional report

Comment: Cross border trade in Uganda is low because

- Domestic demand for maize is too high- there is a huge demand for maize from Uganda by humanitarian organisations.
- Beef companies such as Meat packers are exporting meat from the country to markets in Egypt and EU, which has fuelled demand.
- Ugandan goods crossing into Kenya are subjected to double quality checks on both the Ugandan and Kenyan border sides at Busia and Malaba. Traders hence prefer selling to their Kenyan counterparts on the Ugandan side of the border.
- Traders also reported discrimination beyond Uganda's borders for which they must incur high monetary costs in form of bribes to overcome.

Hence, the general perception that there are less NBTs on in-country level trade and a ready market in-country limits the need to conduct CBT in maize and beef in Uganda. However, it is worth noting that a lot of trade is informal and is not recorded. There is a lot of informal trade in maize between Kenya and Uganda (EAC borders are perforated despite the restrictions in place). However, the extent of informal cross border trade was not assessed in this study; interviews were conducted along the formal trading routes. RATES have informal border monitors at all major border crossings and the data from this study will be supplemented with RATES data.

Comment: Rules of origin for intra-EAC trade were complex leading to several difficulties. Simplified rules of origin were thus introduced for the EAC. Currently goods worth less than $500 are not subjected to rules of origin procedures. However, the current practice of offloading trucks and ferrying goods across the border on bicycles or

carts (in small quantities) as highlighted in the study findings may stem from these simplified rules of origin procedures. Does this imply that the simplification of rules of origin has instead resulted in more inefficiencies in trade and; do they need to be revised?

Comment: The working hours in each country are different. A truck may be cleared on one side of the border and officers are not available on the other side. Can working hours be harmonised?
Response: Harmonisation of customs working hours in the region will be easy to deal with. Mombasa port is now a 24 hour port. The council of ministers just need evidence to attest to the need for this harmonisation across the region.

Comment: At EAC, one stop border check points from source to destination are being pursued

Comment: The question of middlemen/governance in the supply chain for livestock needs to be explored- Entry barriers to livestock trade are high since traders are organised in some form of cartel

Question: Do Ugandans who cross to Kenya face unique barriers?
Response: Unique barriers to trade in Kenya; traders pay custom officers extra to overcome the barriers. The cost to the traders was clearly outlined in the questionnaire by probable NTB such as language barrier, discrimination, etc. The bribe paid to overcome a barrier was defined as the extra monetary cost in trade.

Question: There are a lot of NTBs, how are traders adapting to circumvent their effects beyond bribes; e.g. forming networks, increasing the scale of business, etc
Response: One means of adaptation by traders is to engage in cross border trade but along informal trading routes. However, although this informal trade is known be significant, there is lack data on actual volumes traded along these routes. One of the other coping mechanisms is to wait for Kenyan traders on the Ugandan side and to pay bribes to customs officials to expedite the process of trade.

Comment: Road blocks are installed for purposes other than to block trade such as security, curb trade in illegal merchandise, and enable quarantines for health purposes. The question is therefore not "how can they be abolished" but "how can governments make road blocks more efficient?"

Comment: The recommendation that custom officials need to be retrained is not supported by the data. The inefficiencies (long queues, etc), may be due to other factors such as too much paper work, manual procedures, lack of needed facilities, etc.

Question: There is a lot of cross border trade in maize at Suam (border between Kapchorwa and Kitale), why didn't the Uganda study team visit this location?
Response: The Uganda country team did not visit Suam border because of floods which had blocked access. However, information was collected from the nearby district of Mbale and supplemented with Uganda Bureau of Statistics (UBOS) reports on informal cross border trade in Uganda.

Comment: Uganda has a deliberate policy to export beef. However, currently Uganda is only exporting to Egypt. Exports to Norway and other countries in the EU are curtailed despite demand because Uganda has not yet been gazetted as a foot and mouth disease

free zone. Road blocks and health check points should not be removed because then animals not vaccinated against foot and mouth disease and other pandemics will find their way into our borders.

Comment: Maize is not a major consumption item in Uganda. Most of it is exported to Kenya and Tanzania. Standards are hence not enforced because of the low ranking of maize by policy makers in Uganda.
Response: Other participants reiterated that maize was in fact a key commodity in Uganda; as a cash crop, as food especially in institutions and as animal feed supplement in the dry season. Significant amount of investment in research on maize had been committed by government. Mr Wesonga of the EAC also told participants that the EAC had put in place quality standards for tradable maize. Uganda just needed to implement these quality standards to enable trade across the region.

Question: This study makes no mention of bans on trade and phytosanitary issues; are these not important to the debate on NTBs?
Response: The Tanzania case study did explore the issue of trade bans

Question: In Tanzania, council and municipal permit fees refer to one and the same thing in Tanzania, why differentiate them in the study?
Response: These two permits are different and are administered at different levels

Comment: Do NTBs apply to non-agricultural products as well? If they don't apply then we should focus on value addition.
Response: Why should we advocate for trade in primary commodities rather than adding value to farmer's produce? The EAC needs to start by ensuring a perfect environment for the flow of goods across the region. Unimpeded flow of trade is just as crucial as value addition. It was also noted that NTBs cut across all commodities. However, all indications are that there are more NTBs on beef than live animals. In Kenya, for instance, Farmers' Choice has been trying to export meat to EAC for more than 10 years now.

Comment: The approach to measurement of NTBs in this study should be well articulated. How have the NTBs been quantified, how was discrimination quantified for instance?
Response: NTBs were quantified using proxies, either as time wasted or extra monetary cost incurred. For instance, discrimination was measured as the extra money (bribe) paid to customs officials to overcome the discrimination.

Question: This study shows that more than 90% of all traders and transporters of beef and maize in Tanzania paid a bribe. In the past, Kenya and Uganda have performed worse on the global corruption index; do these results imply that Kenyans are now less corrupt?
Response: In Kenya, the study was conducted by KIPPRA, a government entity which may have generated fear on the consequences of disclosing involvement in bribery with customs officials. The percentages given may hence not reflect the reality on the ground.

Question: How will government assure security along the trading routes after the road blocks in Kenya are scaled down from 47 to 14? What options do we have for improving efficiency of weigh bridges to enable government deal with overloading and its effects on the roads? Furthermore, phytosanitary issues/ health inspections require road blocks

Response: According to Ms. Wanjiku, the eliminated road blocks would be supplemented by police patrols to assure security. Mr. Kilimani, however, noted that although roadblocks were not as many in Uganda, the police patrols were just as riddled with corruption and exchanging one for the other as Kenya proposes might not necessarily curb corruption or delays in cross border trade.

Question: Aren't special duties a form of tariffs?
Response: Taxes and special duties are tariffs and were only highlighted because of their magnitude and hence importance to trade.

Comment: The EAC will not become a reality unless the reported levels of discrimination across the countries in the region are removed. The EAC needs to articulate what the key objectives are and we work towards these targets. A clear understanding of what we need as a region is more crucial. EAC is in an integration process. The partner states demands are what will give the needed direction. However, the general rule on NTBs is that these should be forwarded to the Council to be dealt with.

Question: What do we really mean by NTBs?
Response: NTBS only qualify to the extent that they restrict trade e.g. some regulations are meant to protect. What we need to discuss here is, are there better alternatives to regulations e.g. for disease control (It may be more effective to have a regional initiative on disease control for instance); what can we do to educate transporters (how can we reduce the level of information asymmetry across participants?); what are that alternative ways of achieving our objectives more efficiently; was corruption measured appropriately (case in point being that Kenya is internationally known as more corrupt). However, the data indicates that Tanzanians are more corrupt although they offer significantly lower bribes); how do we disseminate this information more appropriately? Data used to generate these results and definition issues still require a lot of insight from participants.

Ongoing initiatives in EAC

- The EAC has developed the SPS standards Volume I for birds, mammals and bees, SPS Standards Volume II and III for fish and fisheries plus an inspectors' guide. These are now ready for printing. The SPS Protocol and implementation of work draft had also been readied for discussions in October 2008. A tripartite regional economic community (REC) meeting for EAC, SADC and COMESA was held on the 22nd of September to touch on trade and marketing, infrastructure and free movement of people across the region. It is widely recognised that regional trade can spur development in the region and that negotiation and consensus are needed to obtain a regional trade platform. Another summit will be held in Kampala, Uganda on the 21st of October.

- Currently the EAC is doing work on identification and traceability. Already Kenya has moved to brand cattle to curb the practice of cattle rustling. Traceability through microchips is being done in Botswana, but this option is too expensive. Ideas are needed on the approach EAC should develop and adopt.

Session III

Training in spatial equilibrium modelling (SEM)

Proposed Training Agenda

Dr Ayele of ILRI facilitated the session on training of participants in SEM. The agenda proposed for the entire training session in the workshop period was:

- SEM – Analytical and theoretical aspects (Mon 2:00-3:45)
- SEM – Exercises using GAMS, (Mon 3:45 -5:15)
- SEM – Exercises using Excel, (Tues 9:00-11:00)
- The SEM model for EAC: presentation of model results and discussions (Tues 2:00-3:00)
- The SEM model for EAC, opportunities and challenges: General discussions (Wed 9:00-11:00)

Spatial Trade Equilibrium: Analytical Perspective. By Ayele Gelan, Market Opportunities Theme, International Livestock Research Institute

In this part of the training, Dr. Ayele focused on five key areas, i.e.

- Spatial Price Relationships
- Market Boundary
- Spatial Trade Equilibrium
- Trade cost and spatial trade equilibrium
- Why supply and demand conditions matter?

Spatial Price Relationships

Dr. Ayele noted that the relationship between spatial prices is largely determined by *trade costs* between regions (*provided competitive conditions prevail*). The price in one region cannot be greater than that in the other region by more than the transfer costs; otherwise, traders can make a profit by buying in the low price region and selling in the high price region. In trade, the transfer costs include loading or handling as well as transportation charges. Hence the trade cost between any two points cannot be determined simply on the basis of an average transportation rate. It normally includes a *fixed charge* that is independent of the distance traveled (usually associated with loading or unloading), and a *variable charge* related to the distance over which the commodity is moved. If all producers ship homogeneous units of the same commodity to a single central market, there is no market boundary because there is only one market. The price each producer receives under these perfectly competitive conditions is then the central market price less the transfer costs.

The market boundary

In situations where two markets prevail, producers will ship to the market offering a higher net price (i.e., net of trade costs). On the basis of the net price receivable, some producers will supply one market, while others supply the other market. Other producers may be located at points where the price is the same whether they ship to one market or the other. *The boundary between two markets can be identified by finding the points at which prices paid to producers, net of transfer costs, are the same whether they ship to one market or the other.*

To illustrate this concept, Dr. Ayele gave this example. Assume the distance between Kampala and Nairobi is 700 Km and that the price of milk per liter is US$250 in

Kampala and US$ 180 in Nairobi. If the transport/trade cost per km is $0.25, then the market boundary location can be obtained algebraically using simple linear algebra. Denoting the distance of the boundary from Nairobi by Y (since it is not known):
Then 250 - 0.25Y = 180 – 0.25(700-Y)
Solving for Y, the boundary would be about 490km from Nairobi or 210km.

Dr. Ayele further cautioned that the market boundary is not static. Increase in milk price in Nairobi and/or changes in technology employed such as improvements in cooling facilities along Nairobi-Kampala highway would cause the net price and hence the market boundary to shift (see diagram in the Annexes to these proceedings).

Spatial Price Equilibrium

To illustrate this concept, Dr. Ayele considered the dairy industry in EAC with a focus on Kenya and Uganda to simplify the analysis. He noted that supply in each country is not universal but is centered in certain regions, e.g. the Rift Valley region particularly the area around Eldoret in Kenya, etc. It is hence reasonable to assume that milk in Kenya is a fairly good substitute for milk produced in Uganda. Assume the cost of moving milk between the two countries is known and can be approximated by an *average cost per unit* of product that moves between the two countries plus some fixed charges. In autarky, no trade can occur between the countries as each country is an *isolated market* with its price and quantity determined totally by its own supply and demand.

Now consider the situation in which trade is encouraged between the two countries. To examine the spatial price *equilibrium,* we construct the excess supply and excess demand curves of the two countries. The *excess supply curve* of a country describes the quantity by which supply in the country exceeds the demand at each price level (*more specifically, the excess supply curve of an exporting country)*. The *excess demand curve* of a country describes the quantity by which demand in the country exceeds the supply at each price level (*more specifically, the excess demand curve of an importing country*)

The lower price country will be the one with *excess supply* of milk and the higher price country will have *excess demand.*

To express this algebraically, assume the demand equation for Kenya (the lower price country) is defined as Q_{dk}= a – bP and its Supply equation is defined as Q_{sk}= c + dP. The Excess supply (ES_k) equation will be given as $ES_k = Q_{sk} - Q_{dk}$

Also assume the demand equation for Uganda (the higher price country) is defined as Q_{du}= e – fP and its Supply equation is defined as Q_{su}= g + hP. The Excess demand (ED_u) equation will be given as $ED_u = Q_{du} - Q_{su}$

Given the ESk and EDu curves, the trade equilibrium price, P and the equilibrium trade volume Q is given by the intersection between the ES_k and ED_u curves.

How do trade costs disturb the spatial trade equilibrium?

Trade costs create a wedge between export and importing country prices, i.e., $P_u' = P_k' +$ t, when t is trade cost. When the price falls in the exporting country, the supply in that country drops and its demand rises, i.e., there would be a drop in Kenya's excess supply quantity (Kenya will export less). With a rising price in Uganda, the supply in Uganda

rises and its demand falls, i.e., a drop in Uganda's excess demand quantity (Uganda will import less). Hence, the trade volume drops below the initial equilibrium quantity, Q.

How is the burden of rising trade costs shared between the two countries?

With an increase in the transfer cost, the price in the surplus country decreases whereas the price in the deficit country increases. The differential impact on prices in each of the two countries depends on the slope of the respective excess supply and excess demand curves. If ES_k is steeper (i.e., *more price inelastic*) than ED_u, the price in Kenya will fall more than the price rise in Uganda. Conversely, if ED_u is steeper (i.e., *more price inelastic*) than ES_k, the price in Uganda will increase more than the price fall in Kenya. The *slope of ES curve* depends on the slopes of supply and demand curves in the *surplus country*. The steeper the supply country's supply and demand curves, the steeper is the excess supply curve. The *slope of ED curve* depends on the slopes of supply and demand curves in the *deficit country*. The steeper the deficit country's supply and demand curves, the steeper is the excess demand curve.

Demand and supply shifters

The spatial equilibrium model can be used to assess the effect of changes in country supply and demand shifters (such as: income, weather, government policy, international market condition, etc.). Any shift in the supply or demand curve in the surplus country will shift the excess supply curve of that country. Similarly, any shift in the country supply or demand curve in the deficit country will shift the excess demand curve of that country. A shift in the excess supply or excess demand curve will, in turn, ultimately result in changes in prices and quantities of the trading equilibrium.

Discussion on presentation of analytical perspectives of spatial trade equilibrium

Question: Since excess demand or supply lead to a shift in the equilibrium can't countries put in place measures to curb price instability such as improving market access for their products?

Question: How do you determine the angle of excess demand and supply?
Response: The gap between the prices is what drives the equilibrium point

Question: Is it possible to show the impact of trade costs graphically (no maths)?

Response: Graphical solutions are only possible for two dimensional questions e.g. 2 countries, etc

Comment: Transaction costs are critical but evidence shows that there are other conditions determining trade flows e.g. technological factors, product differentiation. Can countries produce more of the same product and still trade?

Comment: There is the issue of seasonal variation in harvesting times across countries and this too fosters trade. Proximity also favors trade without specialisation per se

Question: In Tanzania, the production of milk is still low and most supplies come form Kenya. Why are Tanzanian farmers failing to respond to demand?

Response: The supply demand curve summarises the technical conditions in the two countries. Farmers may not respond to demand due to technological constraints. The demand and supply curve changes due to weather conditions, etc.

Comment: Africa can learn a lot about regional trade from Europe. No need to reinvent the wheel

Comment: Trade is an opportunity that requires conducive accompanying policy measures to be effectively exploited.

SEM – Exercises using GAMS

In this session; Dr. Ayele Gelan, trained participants on the GAMS installation procedure and the GAMS programming language/codes for solving problems. Initial exercises involved solving algebraic problems with a few unknowns to more complex problems. The exercise, spread across two days, ended with a run of the country level data to estimate the welfare impacts of NTBs to regional trade and the interpretation of results. The participants also learnt how to link excel data sets to GAMS for model runs. Details of exercises used in the training are given in the annexes attached to these proceedings.

The SEM model for EAC: presentation of model results and discussions

In this presentation, Dr. Ayele shared the model used for determining the welfare impacts of NTBs on trade in the East African Community. The presentation outlined the structure of the SEM model used, data sources, preliminary results and tasks that still needed to be completed.

The preliminary SEM model was run for all the current EAC member countries: Burundi, Kenya, Rwanda, Tanzania, and Uganda for three commodities: milk, maize, and beef. Using GAMS the participants went through the structure of the model i.e. the GAMS codes used and viewed the excel data sets supporting the model.

Findings: Change in welfare from base level

Scenario	*Description*	*Change in welfare from base level*
1	Elimination of all NTBs (i.e. NTBs=0)	9.68
2	Removal of all tariffs on trade in the 3 commodities across EAC	11.03
3	Scenario 1&2	41.49
4	Scenario 3 and a 30% reduction in transport costs across the region	67.12

Discussion

Comment: The FAO data on supply and demand show that there is no deficit in EAC. The model needs to be rerun with data other than FAO's to assure readers of the robustness of these estimates.
Response: Dr. Ayele indicated that FAO data was used because it comes from the same source, thus assuring uniformity. The exchange rate used is similar; otherwise different exchange rates per country would have to be used.

Comment: Scenarios using the EABC data should also be run as this study was meant to enrich the earlier analysis.

Comment: The data shows that even if all NTBs are removed, the welfare gain by society is very small. Does this mean other factors and not NTBs are more critical to trade in EAC?
Response: Dr. Ayele reminded participants that these were preliminary results and we model reruns are still needed for verification purposes. However, the change in welfare as a result of elimination of NTBs figure is in thousands of …. This figure is hence not insignificant. Also participants were asked to note that the actual monetary value of the NTBs had not been fully accounted for. The figure used was merely the most convenient estimate at the time and the results at this stage only showed the general direction of the effect of NTBs.

Comment: Rather than generate point estimates using a few scenarios, the results should be report several scenarios.
Response: This will be done in the sensitivity analysis

Comment: Can we use the elasticities we got from the country teams to run a few more scenarios?
Response: According to Dr. Ayele, this would be possible. However, the data on elasticity values from the study countries were incomplete with massive differences between long run and short run elasticities. It is not possible to average long run and short run elasticities, however, the long run elasticities would be used to run the sensitivity analysis. Country teams could also try to provide more realistic elasticity estimates where possible.
Dr. Ade Freeman of ILRI also mentioned that the available elasticities can be calibrated for use in the SEM. This is a simple minimisation procedure in GAMS which wouldn't pose a big problem.

Comment: Can the analysis be done using 3 year average price data (i.e. experiment with different base years).
Response: This could be done but would depend on the availability of complete data sets for all the three countries. 2003 had been chosen as the base year, because the data for this year is more adequate. Also participants were urged to note that disaggregating data sets is desirable but takes a considerable amount of time.

Comment: The SEM model gives total welfare gains and may not be the best model for disaggregating estimates by country or combining trade and inequality issues.

Comment: Need to re-evaluate efforts needed to get data results by country and across several facets of the economy and determine if this can be done since country level estimates will be needed for advocacy purposes.
Response: SEM is not the best tool for country level estimates of inequality. It is best for regional level estimates of welfare.

Comment: Is it possible to disaggregate the NTBs per country?
Response: Country level data was not presented in a format that could be used in a SEM. There is still need to standardise the reporting on the data sets.

Presentation 2

Development domains analytical framework….. By Carlos, Targeting Division, ILRI

Discussion

Comment: There are similarities and common areas across the ECA. The development domains framework tool disaggregates the region into units with similar opportunities that would require similar strategies for development.

Comment: As a group, we need to recognise the limitation of the measure of market access used here. A Bill and Melinda Gates initiative is looking into this aspect of market access and should provide answers in the near future.

Comment: Can we add institutional factors in the analysis of development domains since they are very critical in determining the pace of development?
Response: Which institutional factors and how can we map them? Institutional factors are so context specific and it's not easy to map them.

Comments on the probable role of the development domains tool in efforts to eliminate NTBs in the region:

- This tool is for targeting investments/test hypotheses on development strategies likely to work in each development domain.
- It is an easy tool for disseminating information to policy makers.
- May help researchers avoid duplication of research efforts.
- It shows/highlights regional potentials.
- The tool can be used to link different data sets spatially that tell the same story; e.g. by administrative units or linking surplus to deficit areas for milk, key markets and seasonality of supplies. Mapping of trade corridors that traverse regions/countries can enable more effective planning, e.g. incidence and extent of rift valley fever across Kenya and Tanzania.
- This tool has been used by ASARECA to map potential areas for development. Key areas for ASARECA investment in the next 10 years towards attaining development targets were identified and mapped using this tool.
- Vehicle hire and maintenance takes over 50% of trade costs. This tool can assist us link these costs to the state of infrastructure indicators, and determine the role of infrastructure in trade costs and its linkages to welfare.

Wednesday, 24th September

Session I

Presentation 1

Overview of RESAKSS-ECA by Stella Massawe, Monitoring and Evaluation Analyst, ReSAKSS-ECA

The Regional Strategic Analysis and Knowledge Support System (ReSAKSS) is an Africa wide initiative of 5 Consultative Group on International Agricultural Research (CGIAR) Centres- the International Livestock Research Institute (ILRI), ICRISAT, International Food Policy Research Institute (IFPRI), International Institute of Tropical Agriculture

(IITA) and the International Water Management Institute (IWMI). ReSAKSS has three regional nodes coordinated by IFPRI with a common three pronged agenda.

- Strategic analysis
- Building capacity and
- Knowledge management

ReSAKSS is overseen by a steering committee chaired by COMESA

ReSAKSS activities in 2008

- Impact of NTBs in EAC
- Evaluation of the impact of the CET in COMESA
- Vulnerability analysis and mapping in COMESA in collaboration with IFPRI
- Investment analysis in ASARECA
- Developing policy options for responding to food crisis
- Development domain tool for the ECA region

Annually, ReSAKSS-ECA produces two reports for COMESA and USAID on economic trends and outlook in the region. Most of this information has also been packaged in an electronic database

Discussion

Question: To whom does ReSAKSS offer capacity building?
Response: To various actors within the NARS. ReSAKSS offers a platform for interaction with experienced researchers on policy analysis gaps in the region. ReSAKSS also conducts a lot of training in GIS e.g. the training in the last week of September 2008 for a USAID funded project in Kenya in GIS techniques. ReSAKSS also conducts collaborative research and supplementary funding to research centres during implementation of its projects.

Question: What exactly is involved in vulnerability mapping, this is an area the EAC would be interested in?
Response: Vulnerability mapping involves the mapping of vulnerability hotspots in COMESA—i.e. factors that constitute risk. 5 components were dealt with; social economic risks, physical risks (natural disasters), human disease risk and livestock diseases. Different studies targeting vulnerability elimination—such as alternatives to food aid (since this is not sustainable), are currently being designed and will be implemented next year. The role of the EAC is to provide the research questions on what needs to be addressed by research and these will be developed into a concept for a project.

Question: Why was the name changed from SAKSS to ReSAKSS?
Response: The original idea was a SAKSS before the CAADP initiative was finalised. 'Re' brings in the component of support to the Africa wide initiative CAADP so that ReSAKSS now could support the various nodes in line with the Regional economic Communities (RECs). Each node is supporting the establishment of country specific SAKSS nodes such as the Uganda SAKSS node.

Question: What are some of the findings of the evaluation of the impact of the CET in COMESA?

Response: COMESA intends to form a Customs Union by the end of 2008. The CET study is informing this initiative using a simulation model. There are three main objectives of the study and these include

- ï To identify sensitive products per country; which commodities countries will not be willing to subject to the CET
- ï Evaluate the impact of the CET on production and welfare (incomes) and trade
- ï Effects of tax evasion

The CET study report is ready for COMESA and will soon be presented in Lusaka, Zambia. The study shows that products common across countries designated for protection against the CET include maize, wheat, milk and rice. The impact analysis points to among other things an upsurge of agricultural imports; decline in domestic production in the region; member countries will purchase intermediate goods outside COMESA; an expanse in industrial exports for countries like Kenya since it will be cheaper to source inputs within COMESA. Exports of industrial goods will go up.

Key Findings of the CET Study

- ï CET will negatively impact incomes in the region. A few countries will gain, principally, the oil exporting countries - Lybia and Sudan
- ï The CET will lead to trade creation outside COMESA member states. Not clear how COMESA will gain from this extra-COMESA trade creation
- ï Negative effects on government tax revenue as governments are set to lose tariff revenue.
- ï Pilot studies on tax evasion in Kenya and Mauritius show no evidence of tax evasion in Mauritius, but this is high in Kenya. There is need to lower taxes so that companies are motivated to pay taxes to government.

Comment: The picture of livestock trekking in the slides does not depict the successes of ILRI interventions over time
Response: There is no harm in depicting the realities of the region. The picture portrays the need for more intervention in the livestock sector

Session II: Developing the Policy Messages

This session was chaired by Dr. Joseph Karugia and focused on generating commendations from the participants on improving the various areas of the report. These comments were then regrouped into sections as shown below:

Comments on improving the draft reported results

- ï Comment: The sticky issue that still needed to be addressed was the measurement of NTBs. This field of work had received limited research interest. A systematic method to the evaluation and summation of costs incurred e.g. at the road block, some of these include time wasted, days spent to procure a permit, amount paid in actual fees and bribes needs to be proposed and outlined. Standardisation is also still an issue e.g. no. of trips is not a standard unit since commodities and volumes transported vary. This group still needs to delve into these measurement aspects.
- ï Regarding the NTBs, it is important to disaggregate the welfare impacts and conduct a sensitivity analysis to determine the effects of various levels of elimination of NTBs on trade and welfare indicators

- Include a section on areas that require further research.
- This study should take note of the findings of other studies. There is also need to mention that there is a proportion of the impact of NTBS this study cannot account for due to data and measurement hurdles.
- The model should be improved to be indicative of the realities on the ground. Currently the model assumes that all the countries in the region can influence trade (large countries). Also the different countries trade is not linked.
- May need to revisit the assumptions and see those that can be addressed e.g. assure exogeneity of prices as this would be a serious flaw in the analysis.
- There is still need to calibrate elasticities from different sources.
- Need to attach figures to the impacts on welfare. The robustness of the model estimates is critical.
- The results were needed as quickly as possible by the clients in this research to provide evidence for policy making at EAC. Participants' input to expedite this was hence crucial.

Comments on improving the draft recommendations

- The recommendations are too broad, e.g. '… *lowering trade barriers'* (this is obvious), can we be more specific?
- It is not possible to eliminate NTBs; new ones will always crop up.
- Prioritising of the key messages from this study for policy makers is critical as too many recommendations are not very useful for policy making. The suggestion was that 5 key NTBS should be identified and policy recommendations developed for only the priority 5 NTBs.
- Recommendations could be classified as long term and short term
- Some issues can only be handled at country level but there are regional issues that need to be identified and recommendations made to EAC e.g. regional trade corridors, border procedures and how these can be harmonised, etc.
- Traders need to form networks to advocate for their concerns. This would help in eliminating some of the barriers.
- Competence and infrastructure vary from region to region and by rural and urban divide. This study should advocate for a regional approach that demands the presence of minimum standards on infrastructure facilities along all major trading routes in the region and the streamlining of all administrative requirements from source to destination markets in the region.
- What exact forms of support do officials need to improve their efficiency at border points? It may not be re-training but an issue of facilities; customs officials may be in place, but there may be no health experts. Can we be more specific about the basis for re-training as a recommendation? A Customs Union for instance, involves a lot of paper work at administrative points. Capacity and numbers for these may be lacking or not streamlined across countries. Currently, EAC member states have not harmonised custom procedures and facilities for intra –EAC trade.
- Ability to provide effective infrastructure facilities is related to funding capacities of each country; can this study advocate for the region to empower resource constrained countries?
- The model requires a lot of data whose availability is not available or too expensive to collect. Can we recommend that policy makers at EAC level establish a statistical data unit to avail this kind of regional data? ReSAKSS was

developed to fulfil this very mandate but capacity and resources to do this still need to be addressed. Commitment and collaborative effort from government is also still lacking, so a strong recommendation to this effect should be included.

Recommendations for further research

- When does an NTB become a hindrance to trade? Can commodities be tracked along the entire value and marketing chain of the commodity to determine the range of NTBs faced in the region?
- Most policy recommendations focus on producers and ignore participants higher up in the chain such as exporters, processors of live cattle and maize. What policy options are needed for improving trade higher up in the commodity chain?
- Language barriers are especially critical in Uganda. How can culture be integrated so that it ceases to be an impediment to trade participation?
- NTBS vary but some especially the institutional ones (rules and regulations that govern actors) e.g. indiscriminate bans on trade have not been adequately addressed by research. How do actors lose from such bans along the value chain and how can they be compensated? There is need to sensitize policy makers on the negative implications of faulty policies.
- Are capital constraints to trade such as lack of access to credit important in the question of NTBs?

Comments outlining ongoing initiatives at EAC towards the elimination of NTBs

- The council of ministers in EAC recognised the impact of NTBS on trade and have requested for a continuous review of NTBs. This study will help inform decisions at the EAC level. Already regional infrastructure initiatives under the auspices of EAC are underway, e.g. the Nairobi-Arusha highway is being reconstructed with EU funding.
- The lack of data has also been recognised at EAC. EAC established a statistical unit with a data base on the 5 countries. Heads of Bureau of Statistics were in Arusha in the second week of September 2008 to discuss this issue. A regional agricultural census is being planned following the ongoing livestock census in Uganda.
- Information on the requirements for regional trade in commodities- documents required /offices is not readily available. EAC guides are being developed to this end. Data and mapping of livestock routes in EAC will also be handled by ReSAKSS
- On the question of establishing a monitoring and evaluation system for the region, EAC and COMESA already have a monitoring mechanism. It is the small traders who are not organised or empowered to use these tools.

Other Comments

- On the question of which other NTBS might have been over looked, Julius- one of the participants commented that the list of NTBS seemed exhaustive.
- Livestock facilities needed to facilitate trekking of animals to markets- Abattoirs, holding yards, markets, etc are lacking along cattle corridors. The issue of chilling plants for livestock trade also needs to be addressed through various incentives to investment to encourage trade. Incentive mechanisms to encourage entrants into the livestock industry need to be provided by policy.

- For the region to increase trade in beef rather than live animals, there are pending aspects that need to be dealt with, e.g. capacity to transport beef, capacity to attain international SPS standards on beef. We may need to develop strong recommendations on live animals as a medium term strategy e.g. holding grounds, watering facilities. However improving cross border trade in beef should be developed as a long term strategy.

Session III

Presentation 1:

Discussions on national variations for different variables e.g. Production, surplus, deficit, prices by Stella Massawe, ReSAKSS

Discussions

After Ms. Massawe's presentation, a discussion was held in the plenary with participants on how the critical data gaps could be filled to enable more realistic estimates of the welfare effects of NTBs.

Critical data gaps across the EAC countries

- Productivity estimates per country/ per region
- Consumption statistics per country/ per region
- Livestock numbers at sub-national levels- limited livestock census data especially for Uganda
- Price data lacking at the regional—most data is for selected regions. Tanzania and Uganda have no price data on maize, beef for several years
- Livestock producer prices lacking especially in Uganda
- Maize, beef export destinations and import sources.
- Need to update information on road networks and state of the region' roads
- Disaggregated data on production, prices, consumption, inter district information
- Elasticity estimates

In addition to these, a few more comments were given in the plenary by Ade Freeman, Dr. Michael Waithaka, Dr. Ayele Gelan and Ms Stella Massawe. They noted that disaggregation was critical to determining surplus, deficit areas for targeting purposes. There was also need to validate the data used for the development domains; some of the grey literature (in unpublished dissertations for instance) available in each country could be used to this end. The team needed to explore creativity to enable data generation to fill the gaps e.g. using data conversion factors to convert live cattle into beef equivalents or number of dairy cattle into milk supplies using productivity per cow estimates for each region. There was also need to validate data from global sources. It was suggested that exchanges between country teams continue beyond the workshop e.g. through an email or d-group.

Responses

- TEGEMEO has a data compendium which would be shared, however, some of the district information was lacking. Use of this dataset, however, would also

pose the challenge of dealing with disparities between district and national estimates.

- COMTRADE, COMESA, UNCST has information on trade flows between countries. However, discrepancies exist. Furthermore a password is needed to access these data sets; but trade institutions in each country could be contacted as they have access to these passwords.
- A livestock census ongoing in Uganda but currently, more recent historical time series data on livestock was not available even in UBOS and MAAIF.
- Maize production data for Tanzania is available up to 2007 at national and regional level (The 4 divisions)
- Jonathan offered to help with generating consumption estimates with ReSAKSS.
- Better to treat countries as regions and we provide estimates for policy makers on relationships between countries.
- Estimates on trade data in Uganda had been complied and would be availed by EPRC
- For SEM all we need is reliable baseline data to generate the scenarios (In current results 2003 used as the baseline). Time series are not critical at this stage, except for complete data in the base year.
- Impossible to generate time series data at the level of disaggregation required.

Way forward

- A team of 6-7 people would stay behind for two additional days to finalise the report
- Comments given in the plenary would be used to refine the policy recommendations
- John would take charge of forming a discussion group involving all the participants
- More focus would be given to the entire value chain and sensitivity analysis

Findings of the workshop evaluation

Participants were requested to fill in workshop evaluation forms; the results of this exercise showed that;

ANNEX I: REVISED PROGRAMME FOR THE NTB WORKSHOP -22ND TO 26TH SEPTEMBER, 2008

Day & Date	Time	Activity	Person Responsible
Day 1	8.30-09.00	Arrival of participants and Registration	Ruth
	09.00 - 09.30	Welcome and objective of the workshop	Michael Waithaka and Joseph Karugia
	09.30 - 10.00	Country presentation-Uganda	Nicholas Kilimani
	10.00 – 10.30	Country presentation-Tanzania	John Kajiba
	10.30 - 11.00	**Coffee Break**	
	11.00 - 11.30	Presentation of the NTB study	Julliet Wanjiku
	11.30 – 12.00	SEM results	Ayele and Simeon
	12.00 - 1.00	Facilitated feedbacks from all presentations	Joseph and Michael
	1.00 - 02.00	**Lunch**	
	2.00-3.45	Background to the Spatial Equilibrium modeling in GAMS (with examples)	Ayele and Simeon
	03.45- 04.15	**Coffee Break**	
	04.15-05.15	Background to the Spatial Equilibrium modeling in GAMS (with examples) plus Questions and answer session	Ayele and Simeon and participants
Day 2	Morning	SEM Model conceptualization and tools - Practice	Ayele and Simeon
	Afternoon	Impact modeling with NTB	Ayele and Simeon
Day 3	Morning	Policy messages, sum up the modeling, discuss constraints, data gaps and way forward	Ayele and Simeon and Joseph and Michael
	Afternoon	Discussions on national variations for different variables e.g. Production, surplus deficit, prices etc	Stella, Julliet and Miriam
Day 4	Morning and afternoon	Report writing	Ayele, Julliet, Stella, Miriam and national, researchers
Day 5	Morning to 15 hrs	Finalizing report writing and Departure	As above

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Annex III: NTB WORKSHOP EVALUATION FORM

Please take few minutes to evaluate the following areas using 5=excellent, 4= v. good, 3=good, 2= need improvement 1= Bad

Tick below as appropriate

	5	4	3	2	1
Workshop					
Relevance of workshop materials					
Relevance of training					
Resource person well prepared					
Resource persons and presenters communicated effectively					
Answered questions comprehensively					
Examples given were relevant					
Relevant to non tariff barriers in East Africa					
Results well communicated					
Discussions were stimulating					
Other (please specify)					
Logistics					
Communication on workshop details –invitation letter, air travels and other logistics					
Hotel logistics -pick up at airport					
Hotel services –meals					
Hotel services –Rooms					
Hotel services –Internet and IT services					
Workshop room facilities					
How you rate workshop generally					
Other (please specify)					

1. In your own assessment, did the workshop meet its objectives?
Yes _____No._____

If not give reasons
_____
_____
_____
_____

2. Have you learnt anything new in this workshop?

Yes_____ No. _____. If yes specify.
_____

_____
_____

3. Suggest ways we can improve in future workshops

   - Workshop logistic organization
     _____
     _____
     _____
     _____
     _____
     _____
     _____
     _____
   - Workshop presentations

_____
_____
_____
_____
_____
_____

   - Workshop training facilitators and training material

_____
_____
_____
_____
_____

   - Workshop in general

_____
_____
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_____
_____

ANNEX IV: Results of the evaluation of the technical workshop on the use of SEM in the assessment of impacts of NTBs to trade in the EAC

This report presents an evaluation of various aspects of the workshop as viewed by the participants. A workshop evaluation form was provided- see Annex III. A total of 15 completed forms were received from a total registration of about 23 people, representing a 65% rate of return. Workshop activities, materials and logistics were rated, ranging from 1 for bad to 5 for excellent.

The results (in percentage of respondents) are shown in tables below. Most of the participants appear to have been satisfied with the workshop activities and materials. The relevance of the materials, relevance of training, and rating of the resource persons, results communication and discussions were mainly rated as being very good or excellent.

Table A1: Assessment of workshop activities and materials

Rating	workshop materials	relevance of training	Resource person well prepared	Resource persons and presenters communicated effectively	Questions answered comprehensively	Examples given were relevant	relevant to non tariff barriers in EA	results well communicated	discussions stimulating
Bad	-	-	-	-	-	-	-	-	-
Need improvement	-	-	-	-	-	-	-	6.7	-
Good	13.3	6.7	20.0	20.0	33.3	13.3	6.7	33.3	21.4
Very good	20.0	26.7	40.0	60.0	66.7	73.3	46.7	60.0	35.7
Excellent	66.7	66.7	40.0	20.0	-	13.3	46.7	-	42.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

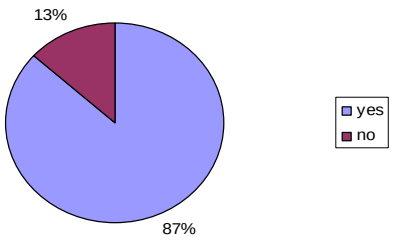
Generally workshop logistics and hotel services received a lower rating than the above workshop activities. Pick up at airport requires improvement as many respondents indicated that they faced delays at the airport waiting to be picked. Meals received a good rating with 62% of participants rating meals as very good. Hotel rooms were also rated as good. However internet services were rated as bad (39%), requires improvement (23%) and 31% reported the internet service was good. Half of the participants reported the workshop room facility to be very good.

Table A2: Assessment of workshop logistics and hotel services

Rating	Communications on workshop details-invitation details, air travels etc	hotel logistics - pick up at airport	hotel meals	hotel rooms	Internet services	workshop room facility
bad	6.7	10.0			38.5	-
need improvement	6.7	40.0			23.1	7.1
good	13.3	40.0	15.4	33.3	30.8	21.4
very good	33.3	10.0	61.5	33.3	-	50.0
excellent	40.0	-	23.1	33.3	7.7	21.4
Total	100.0	100	100.0	100.0	100.0	100

Generally the workshop was rated to be very good (73%), good (13%) and excellent (13%). In the assessment of the participants, the workshop achieved its objectives mainly

of capacity building for carrying out impact analysis of trade policies by use of SEM as shown by below participants respondents



Approximately 90% of all participants had learnt a new thing in the workshop. Among the new things learnt during the workshop included use of GAMS and the spatial equilibrium model. The participants understood the NTBs which hinder trade in the region and also leant the new concept of development domains.

Ways to improve future workshops and specific areas requiring improvement

Participants suggested the need to have their air tickets booked at their convenient travel time, printing and internet services provided in the workshop room among other areas that were not efficient and required improvement.

Table A3: Areas that require improvement

Areas to be improved	**Percent**
Proper airport transfer arrangement	14.3
Internet and printing services in the workshop room	14.3
Book air travels at time convenient for the participants	28.6
Have local participants in the hotel for conveniences	14.3
Advance explicit communication to all participants	14.3
Provide computers when sure they are needed to avoid bringing of own laptops and associated security reasons	14.3
Total	100.0

The participants also suggested the need to have more than one resource persons in a capacity building workshop, have workshop materials in advance especially presentations and also stressed the importance of having each country carry out comparison of their results with other countries if work is across borders. Engaging participants in more practical exercises for skill building was also suggested. Participants also felt need to have more time devoted to the whole workshop especially more time in teaching on the use of programs or models like SEM.

In general, participants suggested that the future capacity building workshops can be improved by having strict time management, having more time for training and practice and providing internet services.

Table 4: General ways to improve future workshops

General ways to improve future workshops	Percent
Strict time management	37.5
Internet and printing service availability	25.0
Locate more time for the workshop to be able to learn SEM with adequate practice	25.0
Being an EAC study, equalize the distribution of participants who attend the workshop equally across the 3 countries	12.5
Total	100.0

In conclusion, despite the few areas that require improvement, this workshop was a success and a great learning experience to many participants. Thanks to every one who contributed in their own ways to make the workshop successful.