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# REGIONAL INTEGRATION AND AGRICULTURAL TRADE DEVELOPMENT IN RWANDA: THE CASE OF STAPLE FOODS SECTOR

## SUMMARY

This paper investigated the impact of regional integration on the agricultural trade development. Using a literature review, the study showed that the results of common agricultural initiatives aiming at agriculture sector and agricultural trade development have not been convincing due to lack of appropriate mechanisms and institutional actions to operationalize regional agricultural policy and strategy at the national level. The paper also revealed that Rwanda benefited from its accession to EAC, especially in terms of the ease of access to regional markets through the establishment of the Common Market, the Customs Union and the alleviation of some of regional trade barriers for basic foodstuffs and consumer goods. This led to an increased value of its agricultural products exports to neighboring countries. The analysis of the Net Export Index and the Grubel-Lloyd measure for maize, potato and bean revealed that Rwanda is a net importer of maize and a net exporter of potato and bean. For these two staple foods, the results revealed that if Rwanda manages, through policy and institutional actions, to remove or alleviate the bottlenecks that prevent farmers from producing enough for export, it can have a competitive advantage on neighboring countries' markets whose access has been facilitated by its accession to the EAC.

**Keywords:** Regional integration, agriculture, trade, staple food, Rwanda

## INTRODUCTION

The ability of the Rwandan agriculture to deal with increasing competition from trade liberalization and its membership to East African Community (EAC) has significant effects on the macro and micro levels of the national economy. Rwanda's economy is highly depending on agriculture sector which contributes up to 33% in the GDP at the current market prices of 2013 (NISR, 2014). This sector continues to be the leading employer (Alinda and Abbott, 2012) with more than 85% of the economically active population. It is also considered important for national food self-sufficiency, accounting for well over 90% of all the food

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consumed in the country (RDB, 2012). To boost its economy, the country initiated various programs and adopted different policies and strategies. These were developed in line with Rwanda's socio-economic policy document in the form of Vision 2020 (Alinda and Abbott, 2012) which also considers regional economic integration as one of the crucial elements of achieving sustainable economic development (MINECOFIN, 2000). In July 2007, Rwanda officially joined the EAC to form a bloc of five countries with Kenya, the United Republic of Tanzania (hereafter referred to as "Tanzania"), Uganda, and Burundi. It sees its membership to EAC as a way of enhancing initiatives to boost its economy by increasing the share of agricultural production on regional markets. Consequently, the country has revised its trade policy and initiated several agriculture-related programs and strategies to be able to integrate economically in this community, and thus derive economic and social benefits from its membership.

While a lot of domestic and regional political initiatives have been put in place to enable farmers to take advantage of economic benefits offered by the EAC, a major concern arises: is the Rwandan accession to EAC having a substantial impact on the development of regional and cross-border agricultural trade development, especially for Rwandan priority foodstuffs? Therefore, the paper seeks to establish the relationship between regional economic integration, agricultural growth and agricultural sector development in Africa, and analyzes agricultural trade flows between Rwanda and neighbouring and EAC member countries. It evaluates the trade performance of Rwanda, especially for maize, irish potatoes (hereafter referred to as "potato") and bean sectors. The choice of these food crops is based on their importance in the Rwandan agriculture (Musabanganji et al., 2015) and cross-border trade (USAID/EAT, 2013).

## MATERIAL AND METHODS

Besides the literature search undertaken by reviewing literature in databases of peer-reviewed scientific publications, books and official publications using the following key words: regional integration, agriculture, staple food, trade, Rwanda, this paper used secondary data on imports and exports retrieved from FAOSTAT website to analyse the level of trade performance for maize, potato, and bean sectors from 2004 to 2013. The analysis of trade performance at the sector level can be carried out by assessing trade indices of competitiveness. Latruffe (2010) presents a list of indicators based on the neoclassical economics which focuses on trade success and which measures competitiveness with the real exchange rate, comparative advantage indices, and export or import indices. According to Frohberg and Hartmann (1997), the use of trade indicators offers two advantages compared to those based on accounting data: (i) the costs of marketing and transport to and from the port of entry are also taken into account, and (ii) demand and supply responses are considered simultaneously. In our analysis, we used the net export index (NEI) and the Grubel-Lloyd (GL) measure for each of the three sectors. The NEI is the difference between a sector's exports and imports divided by the total value of trade (Banterle and Carraresi, 2007). The GL indicator assesses the health of exports by accounting for the fact that a product is often exported and imported at the same time (Latruffe, 2010). It measures intra and inter-industry trade for a given product. The used indicators in the case of one country trade analysis are given by the following equations:

$NEI_i = \frac{X_i - M_i}{X_i + M_i}$ (1), where *X* are exports; *M* are imports; *i* denotes the sector or product considered. The NEI values lie between -1 (when a country imports only) and 1 (when a country exports only), with a value of 0 in the case of the equality of imports and exports.

$GL_i = 1 - \frac{|X_i - M_i|}{X_i + M_i}$ (2), where *X* are exports; *M* are imports; *i* denotes the sector or product considered. GL measure has a range between 0 and 1, with the value 0 indicating inter-industry trade, while the value 1 indicates an intra-industry trade only.

## RESULTS AND DISCUSSION

### Regional integration and economic growth

The literature shows that many authors have worked on tracing the impact of the regional integration on a country's economic growth (for example, grossman and helpman, 1995; n'diaye, 2001; van dijk, 2011; tmea, 2014). Reference made to the statement by trademark east africa (tmea): "the success of one nation depends on the success of its neighbors" (tmea, 2014), one can conclude that, to become a developed nation, a country needs its neighbors. This becomes true in the case of regional integration because, for example, when a company produces in a given country, it may not target only local residents as potential buyers but also those from neighboring countries. Intra-region trade, oncemade possibleby regional agreements, also called regional integration agreements (rias), is seen as a leverage of economic development of the countries belonging to the same agreed trade bloc. As asserted by van dijk (2011), the economic rationale of the regional integration is perceived as an important stimulus for trade, investment, and economic development. In this line, n'diaye (2001) states that for african countries which are handicapped by the small size of their markets, deficiencies in basic infrastructure and insufficient financial and human resources, the regional integration can actually speed up globalization as it allows to achieve economies of scale and streamline production processes, making firms competitive in international markets.

As for the trade considered as one of the main targets of the regional integration, grossman and helpman (1995) contend that it is regarded as an important channel for the diffusion of technology, which will, in turn, stimulate long-term growth and development.in addition, farole et al. (2010) confirm that there exists a strong relationship between a country's trade share and its economic growth performance.

**Implications of regional agriculture-led initiatives for agriculture sector and trade development: a focus on some african rias**

Although its contribution to countries' economic growth varies from country to country and from region to region, agriculture continues to be the main basis of life for many inhabitants around the world. This reality seems to be more pronounced in developing countries where, as asserted by dowlah (2015), approximately one-third of the population still obtain their livelihoods from agriculture. In this line, the world bank (2015) argues that agriculture sector, which accounts for one-third of the gross domestic product and three-quarters of employment in sub-saharan africa, remains fundamental in the 21st century for eliminating poverty and increasing economic growth.

African countries' leaders are mindful of the role of agriculture sector in alleviating poverty and enhancing the livelihoods of their populations. Aiming at the development of this sector, the leaders have signed many international commitments among which the comprehensive africa agriculture development programme (caadp) was adopted in 2003. This initiative of the new partnership for africa’s development (nepad) attracted the most attention of the leaders and their respective countries adhered massively to it. With this program aiming at boosting sustainable agricultural growth throughout the continent, and calling for a minimum commitment of 10% of national budgets to agricultural investment (nepad, 2003), it is not surprising that these countries are putting emphasis on agriculture and agribusiness. One of the nepad principles to create a positive environment for agricultural development is to remove obstacles to cross-border trade and investment, including harmonizing tax and investment codes to promote regional integration. Regional integration may, despite its challenges, be an important way forward for african countries and can be a learning ground for more ambitious global trading if they can resolve the bottlenecks that constrain even the limited existing trade opportunities (nepad, 2003).

Regional initiatives for trade promotion should go together with those focusing on the development of agriculture sector which contributes significantly to the value of imports and exports in sub-saharan africa. Country specific agricultural policy and strategies have been, for a long time, tainted with several critics such as their inappropriateness and failure to address effectively the challenges of agricultural sector at country level (sadc, 2011). Consequently, within the frame of recent efforts to encourage regional integration initiatives in africa since the beginning of the 21 century, numerous projects aiming at implementing common agricultural policies and strategies started (calza bini and boccaleoni, 2010). In this regard, the eac adopted in 2006, the common agriculture and rural development policy. With an overall objective of achieving food security and rational agriculture, this policy was expected to provide a guide in the development of strategies, programs and projects, and a pillar for the development of a shared regional vision for sustainable development and takes advantage of the opportunities arising from globalization and regional integration (eac, 2006). In sadc , in july 2007, partner-states adopted a regional agricultural policy (rap) to address the low levels of economic growth and investment, the high levels of unemployment and poverty, the lack of competitiveness of regional economies, and the intra-regional and inter-regional economic disparities, all of which negatively impact the sadc region's development, integration and competitiveness (sadc, 2011). In western africa, in january 2005, ecowas , has also adopted a regional agricultural policy with the main objective of contributing in a sustainable way to meeting the food needs of the population, to economic and social development, to the reduction of poverty in the member states, and thus to reducing existing inequalities among territories, zones and nations (eu/ecowas, 2008).

In the staple foods sector too, regional efforts have been put in place in eac to move away from traditional approach to competitiveness in the form of the regional strategy for the staple foods value chain though challenges still remain regarding its implementation (usaid/compete, 2010).

However, despite the efforts that have been put in place at regional level leading to common agricultural policy (cap) or agriculture-related strategies in different african rias, results do not seem to be convincing in many african countries. As evidenced by oxfam international in highlighting the case of sadc-rap, the options for achieving the objectives of promoting actions and supporting the development of regional-level mechanisms and instruments have never been put on the table, and consequently, the promise of a vibrant smallholder sector that enables the realization of rights and supports poverty eradication remains a dream for many smallholder farmers (mutamba and dlamini, 2015). The same applies in eac, where the lack of appropriate application of cap in member countries has been noted. Indeed, according to the study conducted in 2013 by africa lead examining the institutional architecture for food security policy change in eac, the overall performance of the agricultural sector in the five eac partner states has been less than its potential and the overall caadp 6% target agricultural growth rate (usaid/africa lead, 2013). The same study reveals that the agro-industry sector in the eac is stagnant, with little added-value in manufacturing sectors. The main causes associated to this low average performance include: (i) inadequate research, education and skills development; (ii) inadequate financial and budget allocation; (iii) limited institutional capacity at the eac secretariat (and also partner states); and (iv) weak institutional structure at the eac secretariat (usaid/africa lead, 2013).

With regards to the agricultural trade performance, even though results described in the literature (see van dijk, 2011) reveal a positive impact of regional agreements in most of african regional trade blocs, the effect is not very significant as expected. In support of this view, hartzenberg (2011) states that africa's regional integration record is not impressive. This could be explained by the lack of financial and institutional instruments to apply, at the country level, policy measures taken within the regional framework. Another cause could be rooted in the fact that, according to hartzenberg (2011), african rias are qualified as ambitious schemes with unrealistic time frames towards deeper integration and in some cases even political union, and are usually neighborhood arrangements.

This situation enables to understand that novel mechanisms need to be developed at country level towards the alleviation of existing challenges in applying and implementing appropriately regional adopted agriculture-oriented actions and interventions. This will lead to the development, in a sustainable way, of their respective agriculture sector characterized by stagnant production coupled with significant demand growth, and poor productivity and limited improvement for key staples (usaid/compete, 2010), and qualified by calza bini and boccaleoni (2010) as the most difficult sector in africa.

**Regional agricultural trade and short and long-term gains: the case of Rwanda**

Since its creation, the eac has worked on various programs to improve intra-regional trade and, as pointed out by kagira (2011), to stimulate and increase investment in agriculture by targeting intra-regional market. The customs union of the eac was designed to encourage intra-regional agricultural trade (karugia et al. 2009). In this context, tariffs on intra-regional trade have been reduced to zero since 2005 and regional products are protected from external competition through the application of the common external tariff, which lies between 25% and 75% (kagira, 2011). The common market for eac was set up in july 2010, and therefore, trade between the community members was much accelerated with an increase of 50% in less than a year. On the rwandan side, this pushed up the value of exports in 2010 to usd 269 million compared to170 million in 2009.

The analysis of the role of the primary sector in the life styles of the population and in trade between the eac countries shows that actions and strategies to develop this sector are essential in the region. Indeed, this sector continues to be the basis for the sustainable economic growth of the community because the majority of the population of the eac countries lives in rural areas with over 80% of the population depending on agriculture for their daily lives. In addition, 70% of exports in the community member countries are mainly composed by the agri-food or agriculture-related products (onyango, 2010).

Rwanda has an open economy with trade accounting for nearly a third of gross domestic product. Its main trading partners are the european union, eac, and comesa. In 2013, trade with the eac was estimated at 23.8% for imports and 23.3% for exports (nisr, 2014). The 2015 report of the world trade organization (wto) reveals that the share of agricultural products in imports and exports of rwanda were respectively estimated to 16.3% and 30.9% in 2014, and the main export destinations were tanzania, the democratic republic of congo (drc), uganda, kenya and european union (wto, 2015). According to usaid/eat (2013), cross-border and regional trade has considerable potential for the rwandan agriculture. Their study shows that the eastern drc, inhabited by over two million people who cannot be fed only by local production, has become the main destination of the rwandan formal and informal foodstuffs exports. The main products exported to this area are maize, maize flour, beans and livestock (usaid/eat, 2013). The akagera region of tanzania, burundi, and uganda are also the main importing regions of rwandan agricultural products and constitute the main markets for its agricultural production (usaid/eat, 2013). The integration of rwanda to the eac facilitated its access to these markets and provides rwanda with opportunities to increase the amount of exported agricultural products. According to official rwandan trade statistics, the value of total cross-border trade exports in 2011 was usd 88 million, accounting for 23% of the total exports while the value of cross-border imports over the same period was usd 260 million, with usd 258 million traded formally (usaid/eat, 2013).

Statistics from the national bank of rwanda (bnr) show that for years, the formal foreign trade balance of rwanda with eac countries is negative. Indeed, from 2009 to 2014, the country recorded a considerable trade deficit (bnr, 2014) due to strong demand for intermediate goods and consumer goods because of the continued growth observed in rwanda (usaid/eat, 2013). The overall trade deficit comes from the formal trade while the informal cross-border trade has surplus since 2010. This informal trade consists mainly of agricultural products and livestock, and the main partner countries are the drc (80% of informal exports) and uganda (bnr, 2014; usaid/eat, 2013).

Regarding the distribution of rwanda's formal imports from eac countries, data show that uganda and kenya have the largest shares in imports of rwanda with 50.9 and 30% respectively (nisr, 2014). Although kenya has a large share of imports, available statistics show that their value have gradually decreased over the years, from 36.5% in 2010 to 30% in 2013 (nisr, 2014). Trade with uganda dates back a long time because available figures point out that on average, from 2009 to 2011, 43% of imports from rwanda were dominated by this country (nisr, 2011). As stressed by usaid/eat (2013), this could be explained by the porosity of borders between the two countries that leads to trade flows in the region even in the case of short-term seasonal price fluctuations. The statistics from nisr (2014) reveal that in 2013, the formal exports of rwanda in the eac were mainly intended to kenya with 70.4% followed by tanzania and burundi with 13.5 and 10.9%, respectively. Increased export of rwanda to kenya is likely related to the fact that the selling auction market of the rwandan tea, one of the main export products of the country, is located in mombasa.

**Rwandan agricultural trade performance analysis**:
**A case study of maize, potato and bean sectors**

The results reported in table 1 on nei and gl indices reveal different trends for the three food crops. The nei index for the considered period is negative for maize. This indicates that the country is qualified as the net importer of maize. The nei values for potato show that the country has been a net exporter for some years and as an importer and exporter for other years. The same is observed for the bean whose corresponding net export indices reveal quite a similar pattern except the first two years during which rwanda was the net importer. The gl index values show a quite similar pattern for maize, potato, and bean. Using a threshold of a gl measure of 0.5 (banterle and carraresi, 2007), the findings reveal that rwanda is exhibiting a strong inter-industry trade for many years out of the ten considered for the study period, and this is pronounced more for maize and less for potato and bean.

## CONCLUSIONS

This article clarifies the contribution of the regional integration in the development of agriculture and agricultural trade. The literature review showed that, for most African RIAs, the results of common agricultural initiatives aiming at agriculture sector and agricultural trade development have not been convincing due to lack of appropriate mechanisms and institutional actions to operationalize regional agricultural policy and strategy at the country level. The benefits of Rwanda's accession to EAC in terms of agricultural trade with the community are presented and analyzed. The study shows that, notwithstanding the insufficiency of agricultural production for the domestic and regional demand, the country registered substantial gains injoiningthe community. The ease ofaccess to regional markets through the establishment of the customs union and alleviation of some of regional trade barriers is one example among others. This led to increased value of its exports to the community. The analysis of NEI and GL trade performance indicators for maize, potato and bean reveals that Rwanda is a net importer of maize and a net exporter of potato and bean. For these two foodstuffs, it is clear that if Rwanda manages, through policy and institutional actions, to remove or alleviate the bottlenecks that prevent farmers from producing enough for export, it can have a competitive advantage in the neighboring countries' markets whose access is facilitated by its accession to the EAC.

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