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Impact of the ECOWAS Common External Tariff on the Rice Sector in West Africa

By Rose Fiamohe^{1*}, Souleymane S. Diallo², Aliou Diagne³ and Arsene Agossadou¹

¹ Africa Rice Center (AfricaRice) 01 BP 2031 Cotonou, Benin

² Centre Ivoirien des Recherches Economiques et Sociales (CIRES) 08 BP 1295, Abidjan, Cote d'Ivoire

³ University Gaston Berger, BP 234, Saint-Louis, Senegal

*Corresponding author: 01 BP 2031, Cotonou, Benin

Tel.: +229 21350188; fax: +229 21350556; E-mail: e.fiamohe@cgiar.org

Abstract

Rice is the first strategic product in West Africa since 2008 crisis. To create a customs union, ECOWAS has adopted in October 2013 the final structure of its Common External Tariff (CET). This CET established a fifth band of 35% but taxes milled rice at 10% and will come into force on January, 2015. As the adoption of this CET will have significant effects on the rice sector, it is necessary to assess its potential ex-ante impact on this sector within the region. The results obtained using a GCE model show that this CET will have various effects on the regional rice economies. Urban poverty was more pronounced than rural poverty and intra-regional trade experienced a remarkable increase. The negatives effects of the CET are more pronounced in Nigeria and Guinea. Therefore, the current version of the CET will have rather mixed effects if support measures are not implemented.

Keywords: ECOWAS, CET, Rice, impact, GCE

JEL codes: D58; E37; O55; O57



1. Introduction

Rice is playing a key role in providing food security for low-income households of rural and urban populations. It is clear since 2008 crisis that rice is no longer a luxury food, but a staple food which is the leading provider of food calories in West Africa (AfricaRice, 2011; Calpe, 2006 ; Fiamohe et al., 2012). Indeed, rice increased from the fourth most consumed cereal in 1990 to the first in 2014 followed by corn, millet and sorghum in the region (USDA, 2015). After the crisis, the Coalition for African Rice Development (CARD) was launched with the aim of doubling rice production in sub-Saharan Africa within 10 years, i.e., from 14 million tons in 2008 to 28 million tons in 2018 (CARD, 2014). In this context, the ECOWAS countries members have subsequently developed ambitious National Rice Development Strategies (NRDS) and implemented important policy measures to stimulate domestic production (Seck et al., 2010). These investments have had a positive effects on regional production with an average annual growth rate estimated at 11.84% between 2008 and 2012 against a rate of 1.83% between 2000 and 2007 (FAOSTAT, 2014). In addition, local rice production systems are competitive and make efficient use of domestic resources (AfricaRice, 2011; Fiamohe et al., 2011; Seck et al., 2013). These importants results are obtained with the development assistance from many developed countries which fund projects through international research centers like AfricaRice and the National Agricultural Research Institute (NARI). But at the same time, the annual rice consumption also increased in the region very fast by an average of 5.51% per year between 2008 and 2012 against a rate of 2.08% for the period 2000-2007 (USDA, 2014). As a consequence, rice consumption outpaces rice production, leading to a relatively low self-sufficiency ratio estimated at 60% for West Africa, indicating a level of reliance on rice imports in average about 40% (AfricaRice, 2011).

The goal of self-sufficiency in rice in West Africa existed since the 1990s. However it was not until the early 2000s that this goal gradually start to take shape with the increase in Africa of projects of establishment of Common Agricultural Policies (CAPs), as part of the recent revival movement of regional integration on the continent (Balié and Ricoy 2010). In this context, the West African Economic and Monetary Union (WAEMU) has developed a common trade policy which established a customs union among the member states and also set a Common External Tariff (CET). But many actors have denounced its weakness and liberal character specifically the tariff band of 10% in which rice is classified. For the ROPPA (Network of Farmers' and

Agricultural Producers' Organisations of West Africa), the tariff of 10% provides only weak protection of the region with respect to imports (ROPPA, 2008). Indeed, rice appears to be the most subsidized and most protected agricultural product in the world. For example, the United States support their rice producers through price support measures in the form of production contract between the Government and the producer and a farm loan available in case of falling world prices (Abiassi and Eclou , 2006). In addition, Japan, India, Indonesia and Uganda respectively apply rates 778%, 70% and 80%, 75% and 40% (Fiamohe et al., 2011).

Since October 2013, the Economic Community of West African States (ECOWAS) in order to create a customs union adopted the final structure of the ECOWAS CET. This CET, which will be entitled to superiority on the WAEMU CET, established a fifth band of 35% and will enter into force on January, 2015. Ranked as first strategic product in the region, many stakeholders expected a better protection for rice by the new CET by classifying it into the fifth tariff band. But the final structure of the ECOWAS CET has classed rice in the categories of 5%, 10% and 20% depending on the types of imported rice and classified the milled rice in 10% band like WAEMU.

There is evidence that the weakness of customs duty on imported milled rice leads to increased imports. According to Ndiogou (2005), the CET is so small that West Africa has rapidly become a free zone for many imported food products including rice. It is clear that the dependency on rice imports is a risky strategy for food security. It is also clear that the steady increase in rice imports into West Africa seriously compromises the effort of governments to increase domestic rice production (Fiamohe et al., 2013). Laroche Dupraz and Postolle (2013) report that long-term food security cannot depend on food imports but must be built on the development of domestic production, with enough barrier protection against world price fluctuations and unfair trading. In addition, many authors have recommended that market policies should be designed to exercise the rights of a country to protect its domestic market from cheap imports (Katrak 1977 ; Svedberg, 1979 and Baldwin, 1992; Fiamohe et al, 2011; FAO, 2012). Faced with the uncertainty over the future of world rice market and the risk of shortage of the commodity in the market, the formulation of policies to reduce dependence on rice imports, saving and improving the acquired of the post-crisis period prove more crucial than ever. There is every reason to believe that the world's major economies will reconsider their relationship to the world market. A return to

greater protectionism is already on the agenda. Hence, to ensure a sustainable growth of the rice sector and meet the objective of food sovereignty advocated by the Comprehensive Africa Agriculture Development Program (CAADP), it is essential to know if the current level of ECOWAS CET will allow to achieve this goal and reduce poverty in West Africa. ROPPA is currently lobbying for an increase of ECOWAS import tariff to 35% but in contrary to their viewpoint, the CET should not improve only the producers welfare but also the consumers' welfare. This is the dual challenge facing by policy makers who must not only ensure better income for producers but also a better welfare to consumers and the state.

This study is a contribution to the understanding of the challenges and issues related to the CET to provide strong scientific arguments to improve trade measures in the ECOWAS region. The objective of the study is to assess the ex-ante impact of the implementation of the Common External Tariff on the development of the rice sector and on households' welfare in ECOWAS members states. This research is very important since the adoption of a tariff policy instrument will have significant effects on relative prices, production, imports, household's welfare, intra-regional exchange, etc. In addition, limited to our knowledge this study is the first contribution on this area since the adoption in October 2013 of the final structure of the ECOWAS CET. To achieve this goal, the following section presents the methodology of the study, the second section is devoted to results, the third section to discussions and the last session focuses on the conclusion and some recommendations.

2. Methodology

2.1. Study area and model simulation

This study covers six ECOWAS countries namely Benin, Côte d'Ivoire, Ghana, Guinea, Nigeria and Togo (see Figure 1). These countries are representative of the various economies of the West African sub-region. Their choice also depends to the availability of complete and quality data.

[Figure 1 here]

Given the broad economic and strong general equilibrium's effects induced by any tariffs changes, impacts expected in the case of this study can only be conveniently examined in the context of a General Computable Equilibrium (GCE) Model. It is recognized in the literature that

among the tools for analyzing the effects of different economic policies, the GCE model is a good tool for quantitative simulation of these effects. Thus, it has been a tool used in many studies in recent years to analyze economic policies in general and in particular trade policies in many African countries. Mention may be made on Aka and Diallo (2011) and Diallo et al. (2010) in Côte d'Ivoire, Diallo and Diallo (2012) in Guinea, Boccanfuso et al. (2003) in Senegal and Nwafor et al. (2007) in Nigeria. The analysis of the impact of the CET on the rice sector and other sectors as well as the interactions between sectors has then been made using a GCE Model. This is a static model based on the assumption of small open economy and real government. Its general structure is based on the standard model EXTER developed by the University of Laval, Quebec and is a one country model. The EXTER model reflects the Walras system in the circular flow of income in an open economy with government. The analysis has been done by using an adapted model for each country taking into account the specificities of each country.

The model described by Decaluwé et al. (2001) was used for Benin, Côte d'Ivoire, Guinea, Ghana and Togo. Contrary, for Nigeria, the version of EXTER model developed for Nigeria in Nwafor et al. (2007) was used. In each country, the basic model has been modified to suit the needs of the study. Thus, the structure of the model differs from one to another country. Then, we aggregate the simulation results from these specific models. The innovation brought with respect to the basic model lies in the modeling of external trade which was divided into two blocks of trading partners namely ECOWAS and the rest of the world. The model makes it possible to well highlight the impact of ECOWAS CET on intra-regional trade on the one hand and on trade between ECOWAS countries members and the rest of the world on the other hand. The simulation model is generally structured in four blocks of equations: Production, demand and income, foreign trade and equilibrium conditions.

2.1.1. Production

The production sectors differ somewhat taking into account the specificities of the studied countries. The model included in general four factors of production namely land, skilled labor, unskilled labor and capital.

In Benin the model contains twenty-one (21) production sectors including seven (7) agricultural sectors namely maize, rice, other subsistence agriculture, industrial agriculture, breeding, forestry

and fishing and four (4) factors of production. In Côte d'Ivoire, Ghana and Guinea, the model includes eight (08) production sectors (rice, corn, other agriculture, fishing, breeding, industry, merchant services and non-merchants services) and four factors of production as Benin. The model used for Nigeria has ten (10) production sectors and products: rice, corn, livestock, fisheries, agriculture, export agriculture, oil, agribusiness, other industries and services but three (03) factors of production (land, labor and capital). By comparison, in Togo, there are nine (09) production sectors namely rice, corn, other agriculture products, livestock, fisheries, food industry, other industry and market and nonmarket services.

The supply of different production branches is determined by a nested production functions. The total production of each branch is obtained with Leontief technology function combining a fixed proportion of value added and intermediate consumption. The fixed share of intermediate consumption of the different branches correspond to the coefficients input - output which are obtained from the Social Accounting Matrix (SAM) of each country. As for value added, it is the combination with CES technology between two composite factors: the composite labor on the one hand and the composite capital of the other. The first combines skilled labor and unskilled labor and the second stems from the combination of physical capital and land capital.

2.1.2. Income and demand

Income of different categories of household comes from the remuneration of the factors of production they hold, transfers received from the government and ECOWAS countries and the rest of the world outside ECOWAS. To these elements are added dividends paid to households by firms.

Demand for final consumption is described by a linear expenditure system (LES) functions resulting from the maximization of a utility functions type Geary-Stone. Aggregate demand for each industry is divided between household final consumption, intermediate consumption and investment spending.

As for the government, which produces non-merchant services, resources come from direct taxes paid by households and firms, taxes on foreign trade (export taxes and import taxes) and indirect taxes on products. In addition to the later, the transfers received from the rest of the world (ECOWAS and non-ECOWAS) were added to the government resources. These resources are

used mainly to finance public consumption, with the remaining being allocated to public transfers to households, enterprises and the rest of the world.

2.1.3. Modeling International Trade

The modeling of foreign trade is carried out by a two levels nested functions at both for exports and imports. It was designed to make the model able to deal with the issue of ECOWAS CET.

In exports, firms maximize profits by allocating production of merchant goods and services between the domestic and international markets. The distribution of production between these two blocks is done using constant elasticity of transformation functions. At the second level, the total export is divided between exports to ECOWAS countries and export to the non-ECOWAS countries using the same functions.

Symmetrically, on the import side, total composite supply is a combination of locally goods and imported goods produced. It is obtained through a constant elasticity of substitution (CES) Function. As in the case of export, import origin can be either, ECOWAS members countries or the rest of the world. Thus, the total volume of imports is a combination of imports from ECOWAS and non-ECOWAS countries, with a CES functions.

2.1.4. The equilibrium conditions

The equilibrium conditions of the model required equality between supply and demand of goods and factors in all markets, and equality between aggregate savings and total investment. Prices were adjusted to ensure a balance between supply and demand. hypothesis of "small economy" or "small country" has been made. Thus, no country can individually influence the international price of imports and exports. Transfers inter-agents as well as consumer spending in real terms in the state are set to their initial level.

Moreover, the current account of the balance of payments is fixed at its initial level, which excludes any increase welfare by increasing external debt. In addition, we assume that the total investment in real terms and inventory changes are exogenous. In doing so, and as foreign savings is exogenous, any decline in the savings of other agents should be offset by an equivalent increase in household savings in order to maintain the balance between savings and real investment.

2.2. Poverty Analysis

The literature provide a lot of indices to analyze the poverty (FGT, Watts, Gini, Clarck, Hemming, et Ulph (CHU)). However, the Foster-Greene-Thorbecke (FGT) P_α measures (Foster et al., 1984) indices are the most common poverty indicators. The FGT P_α class of additively decomposable poverty measures allows us to measure the proportion of poor in the population (the headcount ratio), and also the depth and severity of poverty. The FGT P_α measure is expressed as follow (Cockburn, 2001, Delacuwe et al., 2001):

Equation

$$P_\alpha = \frac{1}{Nz^\alpha} \sum_{j=1}^J ((z - y_j)^\alpha)$$

where j is a sub-group of individuals with income below the poverty line (z), N is the total number of adult equivalents in the sample, y_j is the income of individual j and α is a parameter that allows to distinguish between the alternative FGT indices. When α is equal to 0, the expression simplifies to X/N or the headcount ratio, a measure of the incidence of poverty. Poverty depth is measured by the poverty gap, which is obtained with α equal to 1. The severity of poverty is measured by setting α equal to 2.

2.3. Data source and simulation Scenarios

2.3.1. Data Sources

The data used are mainly elasticities and other specific parameters and the national statistics. These data are derived both from the literature, national statistics structures but also and especially the recent Social Accounting Matrix (SAM) available for each country. Social Accounting Matrices were adopted to reflect the specificities of the study in each country.

The SAM used for Benin is an adaptation of one developed by the WAEMU Commission for the year 2007. For the Cote d'Ivoire, it is one built by Fofana and Diallo (2010) from data of national accounts in 2007. The SAM used for Guinea is that developed by Fofana (2009) primarily based on data from the national accounts for 2008. In Ghana, the model parameters are calibrated using 2005 data from the SAM which was built by the Statistical Service of Ghana and the International Food Policy Research Institute (IFPRI) and edited by Breisinger et al. (2007). In

Nigeria, the main data used above come from the SAM adapted from Nwafor et al. (2010). This SAM was constructed using data from the Nigerian economy in 2005.

2.3.2. Simulation scenarios

The new ECOWAS trade policy aims firstly to create a free trade zone in the ECOWAS by removing all trade barriers between countries members. Therefore, all countries of this region have to apply the same tariffs on all products from outside ECOWAS. The final structure of the ECOWAS CET adopted by the Heads of State and Governments for all products consists of five tariff bands (0%, 5%, 10%, 20% and 35%). As stated earlier, the milled rice is still taxed at 10%. The exercise involved in the one hand the remove of all existing customs duty on the products from ECOWAS and the other hand the application of an average applicable rate of customs duty to all products from non-ECOWAS states. In this latter case, it consists to simulate the change in the average tariff applied to products. The change in the average rate of the branches of the model is obtained through data processing between the average applicable rates taken from the tariff bands provided under the ECOWAS CET and the actual tariffs average rates currently in use in each country (WAEMU CET or not). To ensure greater rigor in defining of the simulations, ten-digit Harmonized data (SH10) system was used to perform a classification of products in 5 tariff bands.

Table 1 shows the tariffs changes induced by the implementation of the ECOWAS CET in some countries. It is thus noticed that the implementation of the ECOWAS CET will cause an increase of customs in many countries except Ghana and Nigeria. Indeed, Benin, Guinea and Cote d'Ivoire recorded an increase of tariff on rice sector respectively by 26.20%, 13.11% and 13.11%. By comparison, in Ghana, the rice sector experiences a 50% tariff reduction.

Since the Nigerian government has traditionally protected the rice sector we assume that in the event of its proper adoption of the CET it would fix the highest tariff rate allowable under the CET (35%). Under this assumption, there is a reduction of the national weighted average tariff on goods by 2%. The weighted average tariff applied to products of ECOWAS and the rest of the world fell by 50% and 42% to 0% and 35% respectively. The overall weighted average tariff is reduced by 18%, from 42.2% in the base year to 34.6% in the ECOWAS CET.

[Table 1 here]

Even if many outcomes can be analyzed through this kind of study, the study investigate the impacts on some specifically outcomes as the change in rice imports through the changes in intra-regional imports and imports from the rest of world, the change in rice production and on poverty.

3. Results

3.1. Impact on imports

[Figure 2 here]

[Figure 3 here]

The impact of the ECOWAS CET on imports varies across countries (see Figure 2) because they do not have the same rice economy. Below are the results according to each country.

In Benin, the overall imports will experience a reduction of 0.13%. However, the effects are somewhat different for some sectors which recorded a very high decrease in imports. Indeed, the total rice imports fall by 16.34% while the maize recorded an increase by 58.42%. The decrease observed in rice imports is the result of a fall of imports outside ECOWAS (-16.49%) and an increase of ECOWAS imports of 0.12%. It appears that the CET will significantly reduce imports from non ECOWAS countries but have a very marginal effects on intra-regional trade.

In Côte d'Ivoire, all sectors recorded an overall decline in imports outside the "other agriculture" sector, which experiences an increase of 11.46%. Imports of all sectors fall by 3.63% while those of rice decreased by 6.3% due to import prices which will increase by 4.03%. This overall decline is related to an increase in import prices in each respective sector. However, the decrease in volume will remain insignificant and the country will continue its imports unless the rice policy will allow to reverse the trend. An analysis by region for all products shows that imports from ECOWAS increase by 4.35%, while those from non-ECOWAS region fell by 0.73%. But all decrease noticed in rice imports is about imports from non-ECOWAS countries.

In Ghana, the most important effect on rice sector of CET is an increase by 104.16 % in total rice imports, driven by imports from non-ECOWAS countries (+104.12 %) while rice imports from ECOWAS countries will increase by 127.15 %.

In Guinea, the simulation shows a decrease of total imports of about 0.92% and of rice imports by 30.31%. The impact of the rice is the most important in relation to other products. This result is explained by the effect on the price of rice imports increased by 0.10%. Imports in the ECOWAS space will experience no change. This decrease is entirely due to the decline in rice imports from non-ECOWAS countries (-30.31%).

In Nigeria, the CET implementation lead to a reduction in import tariff of -100% for ECOWAS and -17% for the rest of the world and this is mirrored by the fall in prices with ECOWAS experiencing a much larger fall in prices. As a results, total nominal imports increased by 0.18% while total exports increased by 0.11%. Regarding rice, we noticed that total rice imports increased by 10%. An analysis of origin of imports indicates that the volume of rice imports from ECOWAS increased by 120% due to lower prices of rice induced by the fall in rice tariffs, while the imports from the rest of the world increased by 10% due to the general decline in consumer prices. However, due to the low share of imports in the ECOWAS region in the basic scenario, the share of imports from ECOWAS still represents less than 5% of total imports.

In Togo, the simulation results reveal that all the sectors experience a decrease in the volume of total imports except merchant services sector which experiences a positive change of 6.37%. Indeed, the rice imports (from all the world) decrease by 20.34%. when we look closer on the origin of the imports, it appears an increase by 15.36% on imports from ECOWAS and decreased 21.23% of imports from outside ECOWAS.

Figure 3 shows that the implementation of ECOWAS-CET will have a very weak positive or negative effects on the global imports in the studied countries.

3.2. Impact on Production

As imports, domestic production of rice countries react differently to the implementation of the ECOWAS CET (Figure 4).

In Benin, the implementation of ECOWAS CET will cause a contraction of total prodction by 0.10%. However, it is important to note that the rice sector knows the largest increase in production with 3% while the maize sector recorded an increase in production by 0.82%. By

comparison, in Côte d'Ivoire, the national production of all branches increases by 0.07%. while national rice production knows a slight increase of 1.00%.

In Ghana, in general, the implementation of the ECOWAS CET have a negative effects on national production. Indeed, the domestic production record a contraction for all sectors (-0.05%) of the Ghanaian economy except fishing, rice and maize which record in contrary an increase in the production. National rice production increases by 10 % while the fishing sector records an increase of its output by 73.65 percent and maize output only recording a marginal increase. In Guinea, there is an overall increase in production of about 1.24%. For the rice sector, the CET leads to a decline in output of 18.61%.

In Togo, some sectors experiences a negative effects. The rice sector is one of these sectors with a decrease of the production by 3.64%. The largest increases were recorded by merchants services sectors and other agriculture with 37.18% respectively and 20, 75%.

By comparison, in Nigeria, after the implementation of ECOWAS CET, the rice and agriculture sector as a whole experience a reduction in gross output and value added while other sectors experience an increase in both. The national production increases by 0.02%. Consequently, the impact on domestic production is very marginal. Specifically, rice production recorded a decline in production of 1.23%.

[Figure 4 here]

3.3. Impact on poverty

The ultimate aim throughout policy is the reduction of poverty and the improvement of the welfare of the populations. In this section, we present the impacts of ECOWAS-CET on the poverty by country (see Figure 5).

[Figure 5 here]

In Benin, due to the decrease of domestic production, the households income and their consumption follow the same trends. However these negative effects are more pronounced for urban households who recorded a decrease in their income and their consumption respectively by 0.82% and 0,82% against -0.48% and -0.50% for rural households. This has been confirmed by

the incidence of poverty which decrease in rural area by 4.64% but increase in urban area by 3.90%.

In Côte d'Ivoire, the implementation of ECOWAS CET will have a various effects on households welfare. The national welfare increase by 0.35%. The same trends has been noticed on incidence of poverty. In overall, positive effects were noticed on households with a reduction of 3.17%. However, there are a big differences when we take account the area of residence. Indeed, the reduction observed at national level is mainly due to the high reduction observed in rural areas induced by the improvement of their income. While the poors numbers of rural households decrease by 12.06 % number the urban households highly increase by 12.26%.

In Ghana, the CET will reduce both rural and urban poverty from their levels in 2005/2006 round of the Ghana Living Standards Survey (GLSS). Simulations results show that ECOWAS CET will induice reductions in the level of national poverty by 0.35 %. An analysis by zone of residence shows that the reduction recorded at national level is mainly due to the reduction of poverty among rural households (0.43 %) than urban households (0.21 %). This reduction in rural poverty is significant given that poverty in Ghana is a rural phenomenon (GSS, 2007), and particularly because food crop farmers who constitute the bulk of Ghana's poor will record the highest reduction by any group (0.57 %). These results generally show that the ECOWAS CET will likely generate very weak welfare effects.

In Guinea, the implementation of the ECOWAS CET leads to an increase of the incidence of poverty by 10.78% from 49.42% to 54.75%. However, this increase is more marked in rural areas because the incidence of poverty changes to 57.96% to 67.13%, an increase of nearly 10 percentage points. In urban areas, the incidence of poverty increased from 13.91% to 28.6% which represent a variation of 105.6%.

In Nigeria, there is an decrease of 0.04% in the incidence of poverty at the national level. An analysis according to zone of residence shows a decrease in the incidence of poverty by 0.12% in urban areas. By comparison, in rural areas, there were no changes in the incidence of poverty. So it is clear that the observed change at the national level is mainly due to the change observed in urban areas. It therefore follows that urban households are more favored by the reduction of tariffs on rice while it does not change the situation in rural areas.

In Togo, the CET has a negative effects on incidence of poverty in general. Indeed, at the national level, there is an increase in the incidence of poverty by 12.25%. However, the effects were opposite between urban and rural households. Indeed, the incidence of urban poverty declined by 4.89% while rural incidence of poverty has increased by 16.55%.

4. Discussion

The ECOWAS CET is an instrument for tariff setting and liberalization which ought to take care of a common market access within the ambits of sub-regional trade and economic integration. It is generally expected, under traditional trade theory, that such tariff increases will protect domestic producers and stimulate domestic production and exports, while the reduction will increase imports of rice and other agriculture thereby discouraging domestic production of rice and other agricultural commodities. Specifically for this study, it is also expected that the suppression of all taxes in the region must increase the intra-regional trade. According to the results, it appears that Ghana and Nigeria are the countries which experience a decrease in the tarrif applied for rice while Benin, Guinea, Cote d'Ivoire and Togo experience an increase of the tarrif applied for rice.

As expected, the rice imports decrease in Benin, Cote d'Ivoire, Guinea and Togo respectively by 16.34% and 6.3% , 30.31% and 20,34%. But the increase in intra-regional trade known an improvement only in Benin and Togo with a small increase of 0.12% in Benin and 15.36% in Togo. Indeed, in Cote d'Ivoire, the national account didn't mention rice imports from ECOWAS region so that all rice imports are from countries outside of ECOWAS. It appears that Cote d'Ivoire haven't any trade relation with other ECOWAS country members specifically on rice. For this reason, CET implementation have not any effect on intra-regional trade but only on imports from Non-ECOWAS countries. In Ghana and Nigeria, rice imports as expected increased respectively by 104.16 % and 10% and the intra-regional trade also increase. It then appears that among the six (06) studied countries, four has increased their trade relation with other countries in the region. This is a one the objectives of regional integration which have lead the implementation of CET in ECOWAS region. However, the intra-regional trade will experience a very weak increase since the share of ECOWAS rice imports in total rice imports of first rice importer in Africa (Nigeria) is very low and less than 5%. This demonstrates the extent of the problem of low intra-community exchange.

Concerning the production we noticed that the expected results has also been obtained for some countries even if the proportion of the increase are very low. Indeed, In Benin, Cote d'Ivoire and Nigeria we observed an increase in rice production. But in Guinea and Togo where the imports experience a decrease, we noticed an unexpected decrease of rice production. However the production of all products recorded the expected results. The findings about increase of all production sector in Guinea (+1.64%) is in accordance with those of Diallo and Diallo (2012). The decrease in rice production in Guinea could be explained by the decrease of employment in the rice sector. The results confirm this reason as we noticed a decrease of 9.53% of the employment (-16.11% and -9.24% respectively for skilled and unskilled labour). The unexpected result observed in Togo could be explained by the decrease of the value added of rice sector by 1.65%. Ghana also experiences an unexpected result in rice production which increase by 10 % after decrease of tarrif which lead to an increase of imports. This result could be explained by the returns to key resources employed in the sector. For example, return to land in rice production rising by over 120 % while return to capital rises by about 15 %. The above changes basically reflect responses of the system to price signals. For example, the producer price of local rice and fish on the domestic market will rise by 20 and 3.9 percent, respectively, compared to a fall of 1.66 percent for the producer price of tradable services.

About poverty, it is expected that an increase of tariff will improve the population welfare. It is then expected in the countries which experience an increase of the tariff that the poverty will be reduce. However, we observed a various effects leads by ECOWAS CET on poverty. As expected, we noticed a reduction in poverty in general in CIV but the urban households experience a high deterioration of their situation. The same trend is observed in Benin. By contrast, in Guinea and Togo it appears that this trade policy will have a negative effects on poverty. But while the urban households experience a deterioration of their situation in Guinea, it is the rural households who experience a deterioration of their situation in Togo. In Nigeria, we noticed a decrease of poverty at national level. However, there is no change in rural poverty while urban poverty decreased by 0.12%. This result is in accordance of the results of Nwafor et al. (2007) who conclude that ECOWAS CET would increase rural poverty while decreasing urban poverty in Nigeria. Contrary to these authors no change has been noticed in this study regarding rural poverty. Obi-Egbeli et al. (2012) also examine the effect of rice trade policy on household welfare in Nigeria. They employed a static CGE model to assess the impact of rice

trade policy of an import ban, 80% tariff increase, 5% tariff reduction and 0% rice import tariff on households' welfare. The simulation results suggest that no rice trade policy improved social welfare. However, they reported increase in the incomes of household producers of rice under the protectionist policies of ban and high tariff.

To reduce the negative effects of the reduction of tariff for some countries, ECOWAS should more analyze the regional bulk purchase of imported rice by the region regarding the findings of Fiamohe et al. (2012). These authors attempted to provide empirical evidence which support or reject the implementation of regional bulk purchase of imported rice by ECOWAS. The empirical results indicate that ECOWAS as a whole does possess a strong and significant market power in the international rice export market. Their findings imply that bulk purchase of imported rice can confer to ECOWAS member states a greater bargaining power into rice import market. They concluded that with the enhancement of the ECOWAS CET on imported rice, the implementation of bulk purchase for imported rice would facilitate rice imports trade as well as allow a better balance between rice imports and rice production, thereby giving producers the chance to bring production into line with regional market development.

5. Conclusion

This study is focused on the potential impacts of the implementation of ECOWAS CET on rice sector specifically. Using a Computable General Equilibrium model, we assessed the ex-ante impacts of the ECOWAS CET on rice sector in six countries namely Benin, Cote d'Ivoire, Ghana, Guinea, Nigeria and Togo. The findings show that the implementation of this policy will have diverse effects on the economies of these countries. From the standpoint of production, some countries have increased their production against other record contraction. The same effect is noted on the poverty. However, urban poverty was more pronounced than rural poverty. Intra-regional trade experienced a remarkable increase due to the elimination of tariffs in the ECOWAS countries members. Although most of the six countries studied reduced their imports, others increased their imports. Nigeria and Guinea longer undergo the negative effects of TEC. Therefore, the current version of the ECOWAS Common External Tariff will have rather a mixed effects about the whole regional economy if support measures are not implemented.

In the light of the foregoing, the regional authorities must i) take accompanying measures to mitigate the negative effects of this policy; ii) develop more incentive policies to complement the

CET and to boost more production and reduce the effect of dearer tariff change on consumer prices in order not to penalize urban consumers; iii) Work towards the effective liberalization of trade in the sub-region iv) implement specific strategies in Nigeria and Guinea. To better understanding and carried out the middle and long run impact of the ECOWAS CET on rice sector, it will be more appropriate to use in the future study a dynamics GCE model. In addition, the SAM must reflect the current structure of economy for each country since the 2007/2008 crisis has induced many changes in their respective economy.

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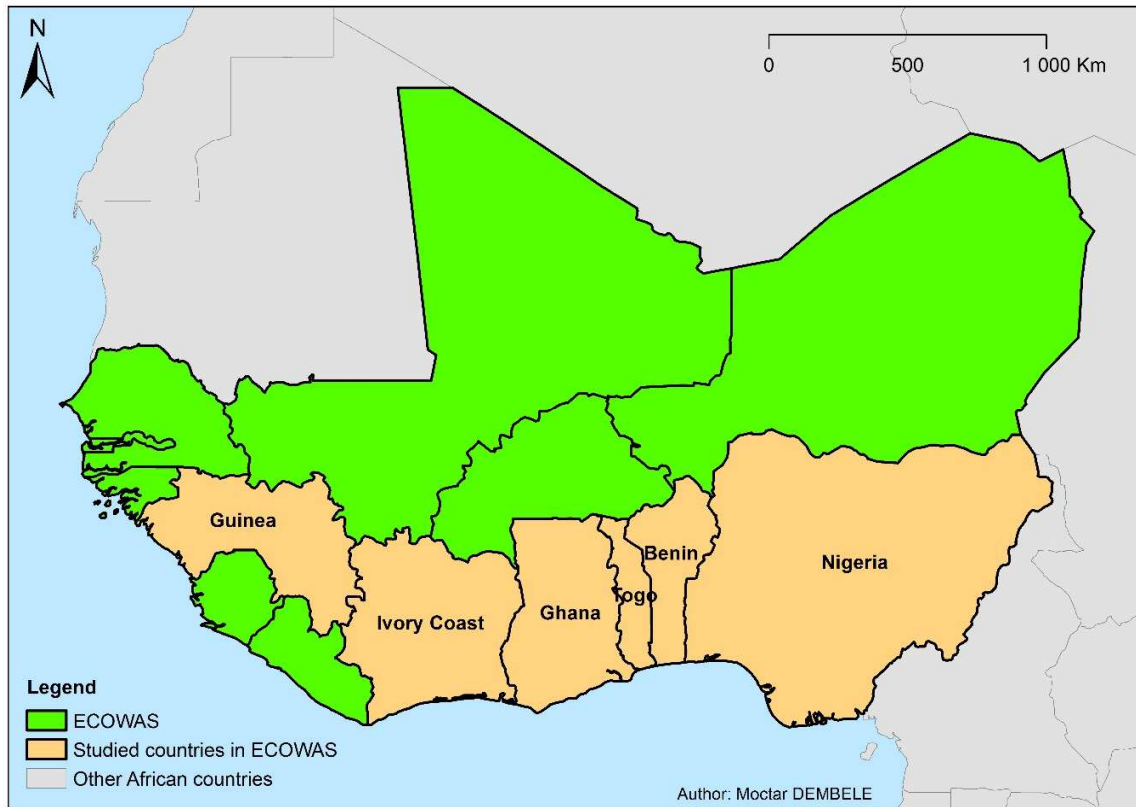


Figure 1: Studied area

Table 1: Average Rate Change induced by the ECOWAS CET (%) for some sectors and some countries

	Bénin	Guinea	CIV	Ghana
Countries				
Sectors				
Rice	29.20	13.11	13.11	-50.00
Maize	68.38	2.44	2.44	56.00
Livestock	-	-8.16	7.62	-
Fisheries	-	4.25	19.34	121.00
Others agriculture	5.62	2.29	-0.33	-21.00
Others industries	1.02	4.67	8.48	11.00

Source: Study Results

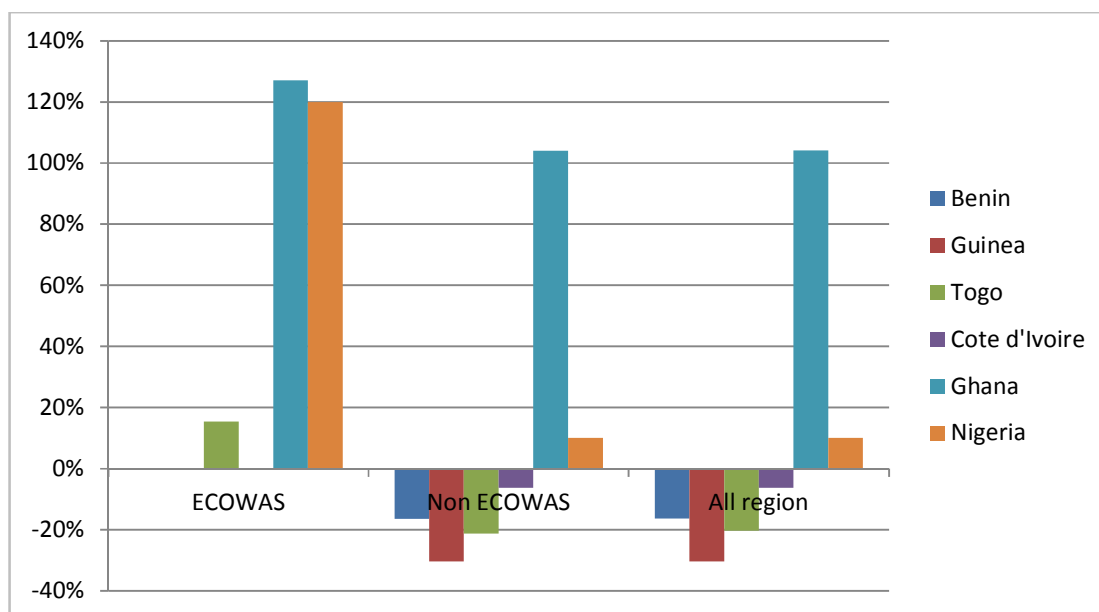


Figure 2: Impact of the ECOWAS CET on rice imports by area of origin and country

Source: Study Results

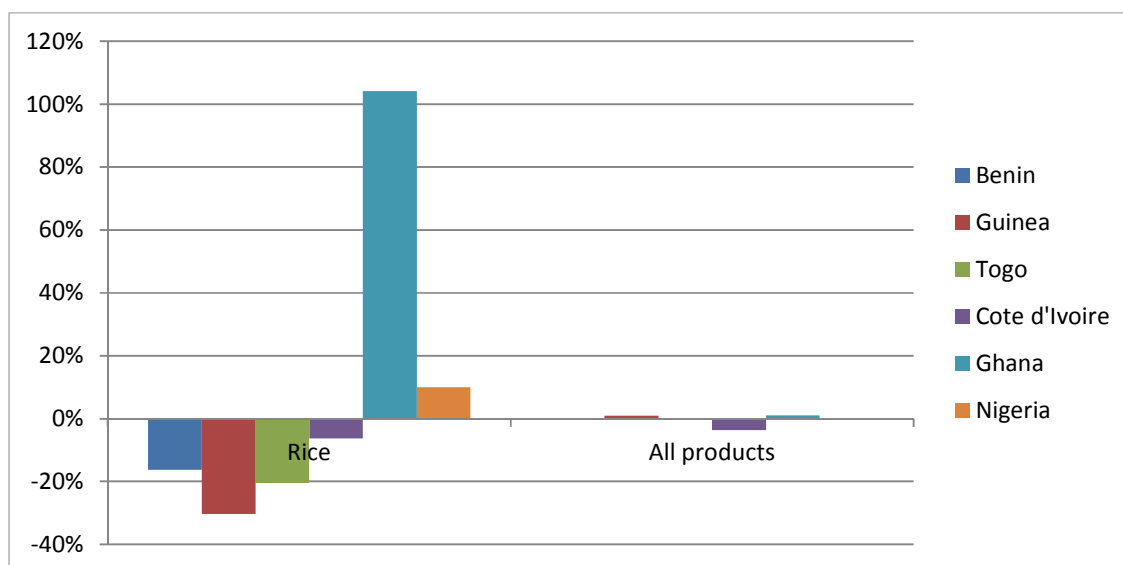


Figure 3: Impact of the ECOWAS CET on rice imports and total importations by country

Source: Study Results

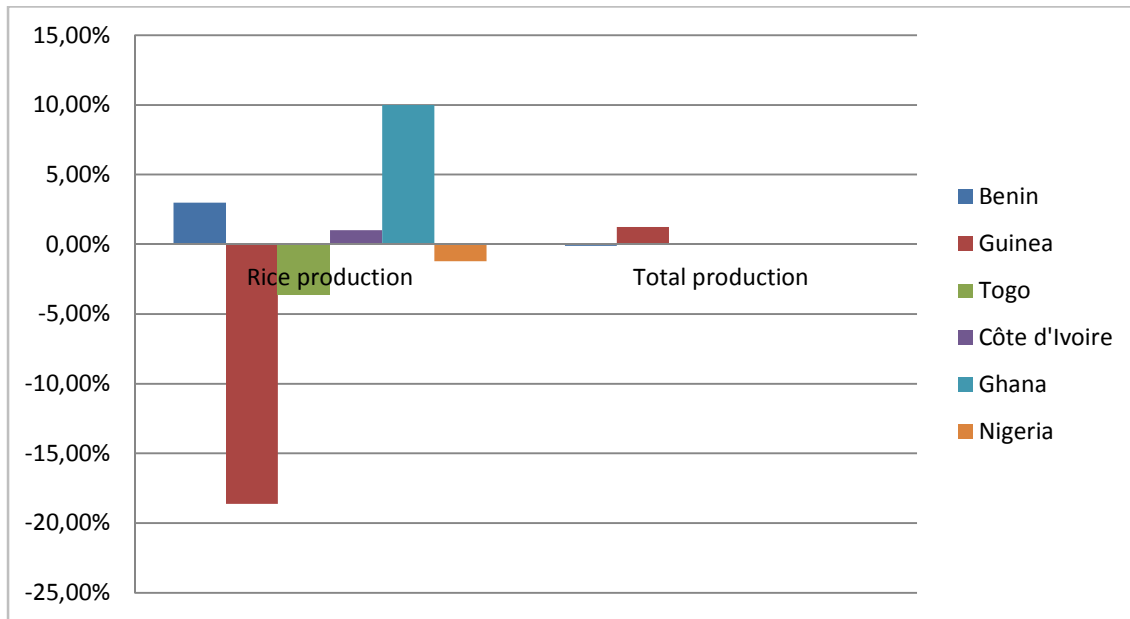


Figure 4: Impact of the ECOWAS CET on total production and rice production by country

Source: Study Results

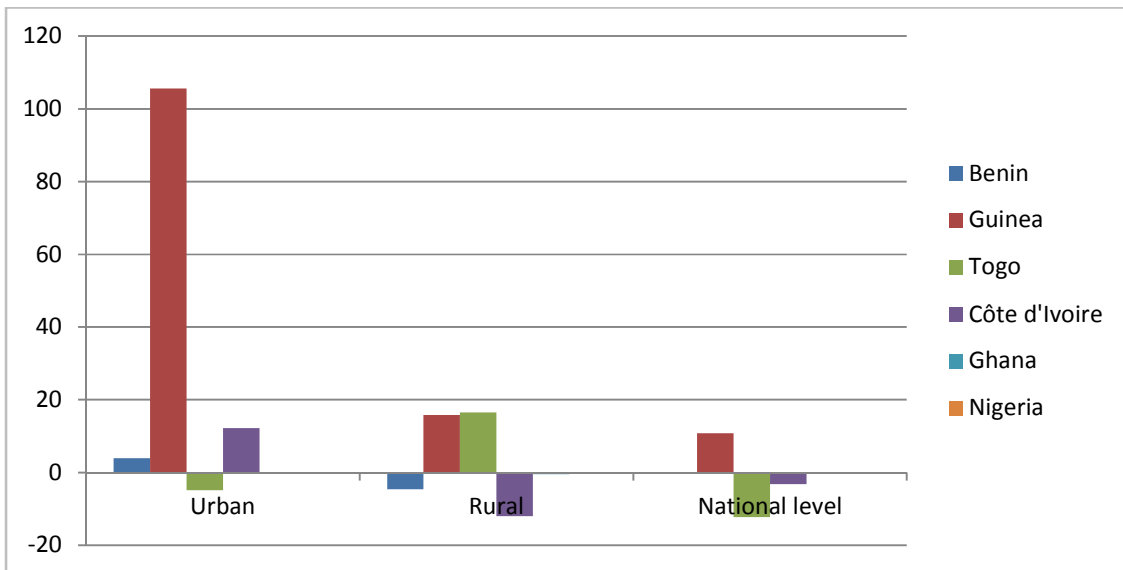


Figure 5: Impact of the ECOWAS CET on the incidence of poverty

Source: Study Results

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