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Effects of Economic Partnership Agreements Between Ecowas and the EU on Trade, Revenue and Welfare of Agricultural Trade of Ecowas Bloc

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ABSTRACT

This study examined the Effects of Economic Partnership Agreements between ECOWAS and the EU on Trade, Revenue and Welfare of Agricultural trade of ECOWAS bloc. The specific objectives of the study were to:(i) estimate the potential trade creation and diversion effects of EPA on agricultural trade of ECOWAS bloc, (ii) estimate the potential revenue effects of EPA on agricultural trade of ECOWAS bloc and (iii) estimate the potential welfare effects of EPA on agricultural trade of ECOWAS bloc. World Integrated Trade Solutions provided access to an online secondary data as classified by United Nations Harmonized system. The result on the potential trade creation and diversion effects of EPA on both trading blocs showed that ECOWAS will gain US$198.9million in trade creation and lose US$58.4 million in Trade Diversion. On the other hand, there will be no trade creation for EU with negligible trade diversion of – US$0.2million. The result showed total potential tariff revenue losses of US$366.4million for ECOWAS bloc post EPA. On the other hand, EU will lose (US$951.8million) its agricultural products post EPA. The result further showed potential welfare gain of US$27.6million for consumers of ECOWAS bloc. On the other hand, there will be welfare gain of the EU at US$243.5million for their consumers post EPA. Among all the recommendations, the study therefore points out that the on-going EPA negotiations between ECOWAS and the EU need not to be hurriedly signed by ECOWAS bloc. Also, ECOWAS needs to strengthen its agricultural production efficiency to be able to compete globally and encourage its individual countries to return to a single digit borrowing interest rate to encourage more investment by local agricultural producers if they want to enjoy the benefits of trade treaties at long run if EPA is eventually signed.

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Introduction

The aim of international policy on trade is to aid smooth running of nation's international trade, this is by setting standards and goals clear which can be understood by trading potential partners. Patterns of trade might in several ways be altered that can lead to creation or diversion of trade. Creation of trade increases trade among the trade union members, while trade diversion relates with trade between non-members and members. Though, there will be enhancement of welfare with trade creation and losses in welfare benefits with trade diversion (Viner, 1950; Morrissey and Zgovu, 2011).

The Economic Partnership Agreement (EPAs) between Economic Communities of West African States (ECOWAS) and the European Union (EU) are targeted at promotion of trade between the two custom unions. This type of agreement (EPAs) is expected to bring development, growth and reduction of poverty in the ECOWAS sub-region. With EPA in place, West African Countries are set to be integrated into the economy of the world and reap its globalization offered benefits within and outside the ECOWAS sub-region. Also, it hopes to bring range of trade co-operations in the ECOWAS sub-region and rules of law in the Economic field will be strengthened (ECOWAS Statistical Bulletin, 2012).

Despite assurances given by the EU to deliver the desired outcomes (providing West African producers,

businesses and banks with a secure legal framework to engage with them in trade), and while recognizing the ECOWAS countries' need to retain the right to protect, a share of their sensitive industries from European competition; it seems that as at the early developmental stage of this new agreement and as negotiations were still ongoing, there was expression of fear by Africans on the need for their own markets to be protected. This was reflected in their wish to exclude certain subsidized agricultural products from what was foreseen as negative elements of market liberalization dictated by the EPA (Harris and Guanchen, 2015).

However, with lengthy decades of privileged EU market access to the ECOWAS, ECOWAS trade or economic development seems not to have benefitted from it as intended. In same vein, ECOWAS privilege access to EU market has failed to stimulate growth and boost local economies in ECOWAS and ACP countries in general. The ECOWAS countries still export just a few raw materials such as Oil, Coffee, Cocoa or minerals, which are subject to frequent and severe price fluctuations (Brenton and Ikezuki, 2007). Similarly, there is isolation in ECOWAS products exported from the other economies since usually little value is added and hardly does any processing take place. Presently, two out of 15 ECOWAS members have not signed EPA and they are Nigeria and the Gambia and their fear still revolves around above facts (ECOWAS newsletter, 2016).

On same note, Harris and Guanchen (2015) estimated that once the EPAs between the European Union and individual African countries are signed, they guarantee that in a decade, African countries' markets will be 80% open to EU goods and services. While this sounds like great news for European producers, it is feared that cheaper EU products flooding the market will carry the threat of harming local production in the West African region. After ten years of negotiations, both sides agreed on a final document on February 24th 2014. However, ECOWAS leaders agreed in principle to the trade pact and couldn't agree in all terms of the negotiation and this might be one of the reasons they sent the document to its individual countries for signing and ratification. Nigeria and the Gambia refused to sign and rectify this agreement and their concerns is that some of the agreements negotiated by ECOWAS might have adverse effect on their manufacturing and agricultural sectors and thus jeopardizes the entire development agenda of ECOWAS member states (Harris and Guanchen, 2015).

Besides**,** Onogwu, Arene and Chidebelu (2011), noted that during the structural adjustment programme (SAP) era (1986-1993), policies of most ECOWAS member nations were directed to encourage specialization, domestic expenditure and production patterns to minimize over dependence on imports; enhance non base on oil export and ensure a steady and balanced economic growth. In spite of all these efforts, potential trade creation and diversion effects, revenue, and welfare effects EPAs will bring to intra-ECOWAS traded of agricultural products are not known as to guide ECOWAS in their negotiation of EPA with EU towards arriving at EPAs that will accommodate trade and developmental interests of the sub-region. These lingering negotiations seem to have created a lot of resentment and recrimination which have affected Africa's relations with Europe.

It is against the above background that this research work specifically:

- Estimated the potential trade creation and diversion effects of EPA on Agricultural trade of ECOWAS bloc;
- Estimated the potential revenue effects of EPA on Agricultural trade of ECOWAS bloc;
- Estimated the potential welfare effects of EPA on Agricultural trade of ECOWAS bloc;

Methodology

Sources of Data

Data were collected from secondary sources only. World Bank provided access (https://wits.worldbank.org) to World Integrated Trade Solutions (WITS) which in turn provided access to international trade panel data and offered built-in sources of data which included: United Nations Conference on Trade and Development (UNCTAD), Common format for Transient Data Exchange (COMTRADE), Trade Analysis and Information System (TRAINS); International Trade Centre (ITC), World Trade Organization (WTO) and United Nations Industrial Development (UNID).

Panel data on various agricultural commodities as grouped, were purposively selected based on the United Nations Harmonized System (UNHS) of classification code 1-24. The panel data were used due to efficiency increases in its estimation that reduce significantly the likely challenges that can arise due to variable omission (Serrano and Piniella, 2010)**.**

Agricultural trade imports only were purposively used for the study. Since Mckay, Milner and Morrissey, *(*2005) adopted by this study pointed out that the main limitation of this model (Self World Integrated Trade Solutions /Monitoring, Analysis, and Reporting Technology (WITS/SMART) is that it is a partial equilibrium model, which means the results of the model are limited to the effects of a trade policy change directly (EPA with elimination of tariff imports) only in one sector (in this case Agricultural trade). Furthermore, SMART model (single market) looks at a single importer (ECOWAS in this case) and its relationship with every country from which it imports the product (exporters in this case EU and ROW). SMART equally looks at what happens if the home country (ECOWAS in this case) removes a tariff of one of the exporters (EU, in my case) while it retains it on other countries (ROW, in this case) (McKay *et al.*, (2005).

Agricultural Trade was Studied under the following Agricultural product groups in table 1

Data Analysis

The objectives of the study were realized by the use of simulation partial equilibrium model of trade analysis of Self-Monitoring, Analysis, and Reporting Technology (SMART) using the equations as presented in table 2, accessed (https://wits.worldbank.org) through the online World Integrated Trade Solution (WITS) website (2020) and using 2019 as baseline during the analysis. The results of the analysis were summarized, presented and discussed using descriptive statistical tools such as percentages, graphs, charts and tabular presentations based on different objectives of the study.

Table 1. Agricultural product groups

Product Group	Full products names	Abbreviation of products names
group 1	(Live Animals)	Live Animals
group 2	Meat and its Edible offal	Meat
group 3	Fish, Mollusks, Crustaceans; other animals that are Aquatic	Fish
group 4	Diary produce, birds eggs natural honey, Edible products of Animal origin and have not elsewhere been specified or been included	Diary produce
group 5	animals origin Product and have not elsewhere been specified or been included	animals Product
group 6	Live Trees and other plants; Bulbs, roots and the likes; cut flower and ornamental foliage	Live Trees
group 7	Edible Vegetables and certain Tubers and Roots)	Edible Veg.
group 8	Edible nuts and fruits, citrus fruit peel or melons	Edible nutandfruit
group 9	Tea, Mate, Coffee and Spices),	TeaandSpices
group 10	Cereals	Cereals
group 11	Industry Milling Products; Malt, Starches; Insulin; Wheat Gluten	industry prod.
group 12	Fruits of Oleaginous and Oil Seeds; Seeds, Miscellaneous Grains and Fruits Industrial or Medical Plants; Fodder and Straw	Fruits
group 13	Resins, Gums and other SAPs of Vegetable and Extracts	Resins andGum
group 14	Vegetable Plaiting Materials; Vegetables Products that have not been elsewhere Specified or been Included	veg. plaiting
group 15	Animal or Vegetable Fats and Cleavage products of both; edible prepared fats; vegetable or Animal Waxes	Fats

Source: United nations international trade statistics, 2018

Table. 2 Self-Monitoring, Analysis, and Reporting Technology (SMART) partial equilibrium model of a single sector (Agriculture) trade

No	Equation	Descriptions
(1)	$\Delta C^{M}=\left[\frac{t}{1+t}\right] \eta_{M}^{d}.M_{0}^{EU}$	Consumption Effects Only (CE)
(2)	$\Delta R^{C} = -t\,.\,M_{0}^{EU}$	potential revenue loss due to EPA from consumption effect
(3)	$\Delta W^{C}=(1/2)t.\,\Delta C^{M}$	welfare effect due to EPA from consumption effect
(4)	$\Delta TC_{M}^{C}= (1/2)\left(\frac{t}{1+t}\right).\,\eta_{M}^{d}\,M_{0}^{EU}$	Potential 'Trade Creation' Effects of EPAswith Consumption Effects (TCandCE)
(5)	$\Delta TD_{M}^{C} =(1/2)\left(\frac{t}{1+t}\right).\,\eta_{M}^{d}\,M_{0}^{ROW}$	Potential Trade Diversion' Effect of EPAs with Consumption Effects (TDandCE)
(6)	$\Delta R_{TD}^{C} = -t.\,M_{0}^{ROW}$	Revenue effects of EPA on Agricultural trade of ECOWAS bloc
(7)	$\Delta W_{TC}^{M} = \left(M_{0}^{ECOWAS}\right) t + (1/2)\left(t.\,\Delta TC_{M}^{C}\right)$	Welfare effects from trade creation for ECOWAS with consumption effects
(8)	$\Delta W_{TD}^{M} = (1/2)[\![1/2\,t.\,\Delta TD_{M}^{C}) - (t.\,M_{0}^{ROW}]\!]$	Welfare effects from trade diversion with consumption effects

Note	
t	tariff (in US dollars)
η_{M}^{d}	ECOWAS demand price imports elasticity
M_{0}^{EU}	Imports of ECOWAS from EU pre-EPA
M_{0}^{ROW}	Imports of ECOWAS from ROW pre-EPA
M_{0}^{ECOWAS}	Imports within ECOWAS pre-EPA
η_{M}^{d}	ECOWAS price elasticity of demand for imports on agricultural products from EU
$M_{0}{}^{ROW}$	imports demand of ECOWAS from ROW pre-EPA
$-tM_{0}^{ROW}$	imposed tariff on imports from ROW by ECOWAS pre-EPA
$-t.\,M_{0}^{ROW}$	pre-EPA tariff imposed on imports sourced by ECOWAS from ROW
P_{EU}	ECOWAS import price from EU
$P^{t}{}_{ROW}$	tariff price of imports from ROW
P_{ROW}	non-tariff price of imports from ROW

Analytical Framework and Model Specifications

Economic Partnership Agreements (EPAs) bore both static and dynamic effects within and between the two trade unions (ECOWAS and EU) involved. The first-best modelling framework for this purpose is the model of general equilibrium as applied by Karingi, et al. (2005) and one of the popular Computable General Equilibrium (CGE) applied in their analyses is the General Trade Analysis Project (GTAP) which is a multiple-product and multiple-country computable general equilibrium model base. However, based on the lack of data (disaggregation) majority of African countries are not captured in this work of Karingi, et al. (2005). This means that within a regional trade bloc there could be some countries whose information is lumped together as 'rest of the bloc'; obviously one cannot adequately take into account 'second

round' intra-regional effects in GTAP models where this problem exists. Similarly, Milner et al. (2005) correctly indicates that the CGEs database lacks detail in commodity for the specific and special products of important interest both in EU and ECOWAS regions in the circumstances of EPAs to be taken account of. The detail level of HS tariff six-digit line that this research deals with totally renders CGEs unsuitable. In light of the above problems, this study used partial equilibrium models as they are not data-intensive, and just like CGEs are versatile to capture static effects on import, tariff revenue and welfare. The major shortcoming of the models of partial equilibrium is that they cannot measure the dynamic effects or second-round effects such as interactions between sectors, macroeconomic adjustments, *inter alia*. A couple of models of partial equilibrium have been applied in empirical analyses of trade; for example, the World Integrated Trade Solutions Self-Monitoring, Analysis and Reporting Technology (WITS/SMART) model used by the Milner *et al*. (2005) and McKay, et al (2005). Furthermore, McKay, et al (2005) presented a relatively simple method of partial Equilibrium, (WITS/SMART) and requiring moderate data to measure the likely short-run welfare consequences, static effects on trade flows, and tariff revenue, of EPAs and this makes it more relevant to this study.However, adopting the explanations of Mckay et al., (2005**)** into this study, as they examined the EPA effect for the case of a country j (in our case ECOWAS member countries) that is members of an initial preferential trading area (PTA)(in our case ECOWAS market). These Markets are taken to be competitive perfectly and country j`s domestically produced imports substitutes are treated as perfect substitutes of imports and there is also perfect substitutability between imports from alternative outside sources (in this case of rest of the world (ROW) and the EU). In this type of agreement (EPA) the partner country (EU) supplies j (ECOWAS member countries) at increasing cost conditions while the outside countries (ROW) supply using different constant cost technologies, with the ROW being the least-cost producer. Figure 1, further illustrates this.

Similarly, let's take Country j`s (ECOWAS member countries) demand for imports to be represented by the line Dj, and the PTA (ECOWAS market) supplies (export) to country j along the line SPTA. The supply conditions for the ROW (rest of the world) are shown by the line S_{ROW} (a free trade supply schedule for the EU lies anywhere above S_{ROW}). Under non-free trade conditions (pre-EPA) ECOWAS imposes most favouerd nation (MFN) tariff rates on imports from the EU and ROW, thus $P^t_{EU}=P_{EU}(1+t^{MFN})$ and $P^t_{ROW}=P_{ROW}(1+t^{MFN})$ where P^t_{EU} is tariff rate imposed by ECOWAS on imports from the EU while P^t_{ROW} is same on imports from ROW. Initial cost conditions ensure that $P^t_{ROW}= P^t_{EU}$ (P^t_{EU} is not shown in the graph as the EU is assumed to be the higher cost supplier prior to EPAs). This price differential will bear both trade creation and diversion effects if ECOWAS bloc adopted discriminatory preferential trade policies toward the EU. The relevant tariff – inclusive supply line is S^t_{ROW} (supply from ROW to ECOWAS) and the resulting total imports for ECOWAS as $0M_2$, being the sum of imports $0M_1$ from the ROW and $0M_3$ from the EU. Assuming no domestic production capability for ECOWAS bloc, its supply capability is ruled out for simplicity and therefore we can study welfare effects in ECOWAS using consumers` surplus with respect to the import demand schedule Dj given as area of triangle ABP^t_{ROW} plus the tariff revenue on extra-regional imports (area(a+b)

Now assume country j (ECOWAS member countries) and its PTA (ECOWAS market) partners enter an EPA with the EU in which EU sourced imports enter duty –free. Imports from ROW continue to face import tariffs. Suppose the EPA reduces the price of imports from the EU to a level such as P_{EU} (import price from EU) lying anywhere below P^t_{ROW} (import price from ROW) (but above free trade P_{ROW}) Post EPA, P_{EU} becomes the relevant supply line that allows total import to expand from $0M_2$ to $0M_3$ and all of that comes from EU only .Total import volume can be broken into three distinct components: the increase in import volume M_2M_3 (imports of ECOWAS from EU), which is a pure consumption expansion effect; M_1M_2 (imports of ECOWAS from ROW) diverted from ROW; $0M_1$ is displaced from the PTA (ECOWAS) in post EPA and In technical terms, $0M_1$ represents trade creation arising from the displacement of relatively inefficiently produced ECOWAS goods by the relatively efficiently produced EU goods (although the EU is not the most efficient globally). Also, M_1M_2 is trade diversion as it represents the volume of imports from the relatively inefficient EU producers displacing imports from the relatively efficient (least constant cost) ROW producers (this is diversion between extra –regional suppliers).

At the price level P_{EU} (price of imports from EU) there is a resource loss equal to the potential maximum tariff revenue a+ b as imports from the EU enter duty-free to ECOWAS market. Trade creation brings about a global resource-saving effect given by area c and relocation of producers` surplus area d in the PTA (imports within ECOWAS markets) to consumers, both of which increase consumers` surplus by area c+ d. Adding together the welfare –increasing expansion in consumer`s surplus, pure consumption effect (area e) and trade creation, on different note, means that the net welfare effect can be represented in different scenarios, basing on the strengths relative to other force. It is clear that the more efficient the EU is, the smaller the trade diversion and hence the greater the probability of a welfare-improving EPA.

However, note that in this study, Trade effect was derived by subtracting the trade diversion from creation as indicated by Macky et al. (2005). Therefore, this study assumed that the EU is initially the dominant supplier of Agricultural products to ECOWAS market pre EPA, we can interpret the price of agricultural products to be as $P^t_{ROW} = P^t_{EU}$ (where P^t_{ROW} is tariff rates on imports from ROW imposed by ECOWAS and P^t_{EU} is tariff rates on imports from EU imposed by ECOWAS) (P^t_{EU} is not shown in the graph as the EU is assumed to be the higher cost supplier prior to EPAs as adopted from Macky et al. (2005)); with EPA in place, imports increase by M_2M_3 *(*where M_2 is total ECOWAS imports within its markets and M_3 is imports of ECOWAS from EU only*)* and we measure the welfare gain as area *e* (as described in Figure 1, of this study).

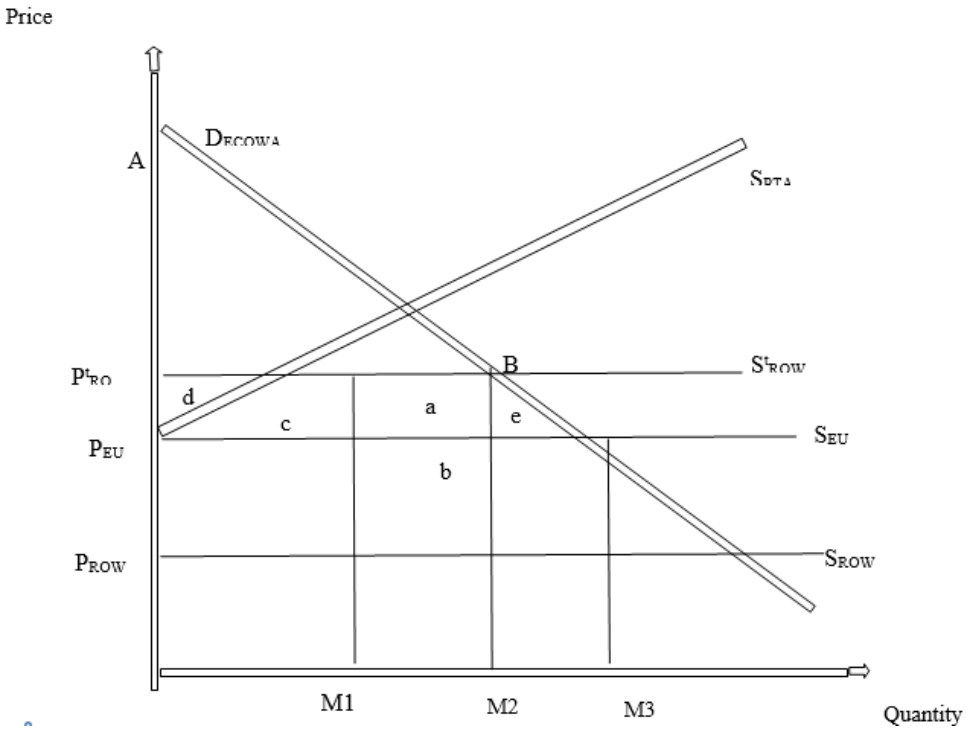

Figure 1. illustrating the impact of reciprocity in an EPA (Adapted from Keane et al., 2010)

It is important to identify the consumption effect alone first as noted by Macky et al. (2005) and adopted into this study by using consumption effect alone **(**ΔC^M) to estimate the SMART partial equilibrium. Based on this, consumption effect alone **(**ΔC^M) was estimated in this study relative to existing (pre-EPA) import of ECOWAS from EU volumes (where tariff elasticities are the key for determining the imports volume of ECOWAS bloc, of course a reduction in tariffs implies an increase in import demand) which was obtained through equation 1

As EPA entails tariffs elimination on all imports of ECOWAS on the EU sources, the revenue tariff loss on imports of ECOWAS from EU (M_0^{EU} = OM2) post EPA and effect of welfare *was* determined with equation 2 and 3.

Also, taken for instance that an ECOWAS partner (EU) supplies a much significant share of imports pre EPA to its market, one can estimate the effects of trade creation with consumption effects in post EPA by considering the case where the ECOWAS price lies above the important range of between applied tariff imports price from ROW (P_{ROW}^t) and removed tariff imports price from EU (P_{EU}). In this instance all ECOWAS imports (OM_1) from the ROW, were replaced by imports sourced from the EU. The maximum value of trade creation (*CM)* with consumption effects (ΔTC) in post EPA for ECOWAS were obtained where the price of ECOWAS imports was as high as the when tariff is included in the EU price sourced imports. Thus, trade creation effect was determined from the equation 4 and trade creation is said to depend on the pre-EPA level of imports of ECOWAS, the tariff change and demand elasticity of its imports.

Similarly, relevant issues of trade diversion take place where more efficiently imports products from the ROW (M_1M_2) (imports of ECOWAS from ROW) are replaced by less efficiently products from the EU due to an EPA. Products for which pre-EPA the ROW dominates the supplies can be assumed to imply that the ROW has more efficiency than the EU. Where an EPA leads to P_{EU} (import price from EU) < P^t_{ROW} (import price from ROW) under the prevailing constant production cost conditions the EU becomes the sole supplier to ECOWAS, and total diversion on the import will be seen to be the upper limit of trade diverted. Notably, not all imports from ROW will be diverted, and the EU was assumed that it might have previously been supplying significant imports share of a product (20% at least, Macky et al. (2005)) to have a capacity for trade diversion (TD). The consumption effects due to trade diversion ($\Delta TD^C{}_M$) post EPA, was estimated in a similar way by assuming (in the absence of information about the level at which the post-EPA EU price will settle relative to the price of imports from ROW with applied tariff (P^t_{ROW}) pre EPA and price of imports from ROW (P_{ROW}) post EPA) as can be seen in Figure 1) that on average the post-EPA price of imports of ECOWAS from the EU lies between the two.Thus: equation 5 was used to determine trade diversion in this study.

Obviously, there is association of trade diversion with revenue tariff loss for ECOWAS post EPA since ECOWAS diverts from the ROW taxed sources to the EU sources that are duty free. The revenue tariff loss to ECOWAS because of diverted trade (consumption effects was used to determine it) was estimated using equation 6.

The welfare effects estimation from WITS/SMART model is simpler. This is different from the equivalent measurement in the models of general equilibrium. Essentially, the welfare effect is mainly ascribed to the consumer benefits in the importing country (ECOWAS) as a result of lower import prices from EU (Laird and Yeats, 1986). This gives room to ECOWAS to replace domestic more expensive or products imported with cheaper one due to EPA that the relevant reduction in tariff are affected. Increased imports lead to a welfare net gain that can be thought as the increase in consumer welfare for ECOWAS and is measured as follows:

Although, Welfare effect was summed from trade creation and trade diversion effect respectively as suggested by Macky et al. (2005) and this is presented in equation (7) and (8).

Welfare effects of trade creation for ECOWAS with consumption effects (ΔW_{TC}^{M}) was estimated as the combination of the maximum value of the presumed displaced ECOWAS member countries exports $\left(M_{0}^{ECOWAS}\right)$ on ECOWAS market to EU due to EPA and trade creation ($\Delta TC^{C}{}_{M}$) from consumption effect as defined in equation (4) was used to estimate this welfare using equation 7.

However, welfare effects of trade diversion with consumption effects (ΔTD_{M}^{C}) was estimated by using the assumption that P_{EU} (import price from EU) lies between P^{t}_{ROW} (tariff price of imports from ROW) *and* P_{ROW} (non-tariff price of imports from ROW), the welfare impact of trade diversion with consumption effects for ECOWAS was determined by the combination of revenue tariff effects from equation (6) and diverted trade from consumption effects from equation 5 using equation 8.

Results and Discussions

Potential Trade Creation and Diversion Effect of EPA between ECOWAS and the EU on Agricultural Trade of ECOWAS Bloc

The result as shown on Table 3 indicated that ECOWAS will gain US$198.9million in trade creation and will loss (US$58.4 million) in trade diversion, while total trade effect will amount to US$140.6million. ECOWAS Meat and its Edible offal will experience the highest trade creation effect of US$74.4million and trade diversion effect of US$26.6 million.

On the other hand, it was observed that there will be no trade creation for EU bloc if it goes in to EPA with ECOWAS bloc, with negligible trade diversion of –US$0.2million with same trade and their Live Trees and other Plants, Bulbs, Roots and the likes; Cut Flower and Ornamental Foliage to experience highest trade diversion effect of -US$-0.1million and as can be seen on Table 4.

Table 3. Potential Trade Creation and Diversion Effect of EPA between ECOWAS and the EU on Agricultural trade of ECOWAS bloc in 000' USD

Products Group	Trade Effect	Trade Creation	Trade Diversion
Live Animals	849.6	870.3	20.7
Meat	47,810.6	74,361.0	26,550.5
Fish	8,837.4	16,940.0	8,102.7
Diary produce	13,030.0	20,521.7	7,491.8
animals Product	780.3	994.0	213.7
Live Trees	113.0	120.2	7.3
Edible Veg.	10,154.0	10,900.6	746.6
Edible nut and fruit	370.5	2,249.1	1878.6
Tea andSpices	721.9	1,484.1	762.2
Cereals	11,713.1	18,906.0	7,192.9
Industry prod.	36,170.1	38,142.9	1,972.8
Fruits	406.6	477.2	70.6
Resins andGum	650.5	698.5	48.0
veg. plaiting	2.6	3.3	0.6
Fats	8,956.6	12,327.6	3,371.0
Total	140,566.8	198,996.5	58,429.8

Sources: Computed from WITS/SMART Partial Equilibrium Analysis, Result 2020

Table 4. Potential Trade Creation and Diversion Effect of EPA between ECOWAS and the EU on the Agricultural trade of EU bloc in 000' USD

Product Group	Trade Effect	Trade Creation	Trade Diversion
Live Animals	-1.6	0.0	-1.6
Meat	-0.3	0.0	-0.3
Fish	-6.1	0.0	-6.1
Diary produce	0.0	0.0	0.0
animals Product	0.0	0.0	0.0
Live Trees	-107.3	0.0	-107.3
Edible Veg.	-19.3	0.0	-19.3
Edible nut and fruit	-17.2	0.0	-17.2
Tea andSpices	-1.5	0.0	-1.5
Cereals	0.0	0.0	0.0
Industry prod.	0.0	0.0	0.0
Fruits	0.0	0.0	0.0
Live Animals	-0.1	0.0	-0.1
Meat	0.0	0.0	0.0
Fish	-0.1	0.0	-0.1
Total	-153.5	0.0	-153.5

Sources: Computed from WITS/SMART Partial Equilibrium Analysis, Result, 2020

Consequently, the above results imply that trade creation will outweigh trade diversion for the ECOWAS bloc on agricultural products studied if EPAs should be signed; while for EU bloc there will be negligible trade diversion and no trade creation effect on their bloc. The trade creation effect seen only on ECOWAS bloc may have adverse effect on ECOWAS agricultural producers on the long run since they may not be able to compete with EU producers and may lose the ECOWAS agricultural products' markets to EU farmers. The ECOWAS consumers may benefit in the short run due to more availability of cheaper agricultural products on the ECOWAS markets. But because the agricultural sector of the ECOWAS bloc will be losing patronage and income unless their ability to compete is improved, household income of farming families in the ECOWAS bloc will also decline due to the competition EU goods will induce on ECOWAS market; ECOWAS agricultural producers' ability to consume products and services from other sectors of the economy will decline. In the long run, the initial gainers (ECOWAS) from cheap agricultural imports will also loss patronage from the agricultural sector and their own disposable income (the ability to buy the cheap imports) will also fall. More so, the negligible trade diversion without trade creation in EU bloc post-EPA on their own market, makes this study conclude that signing of EPA by ECOWAS bloc with EU will lead to diversion of Agricultural trade in favour of EU. Overall, the EU will be the main beneficiary of the EPA.

Potential Revenue Effects of EPAs between ECOWAS and the EU on Agricultural trade of ECOWAS bloc post EPA

The result as presented in Figures 2, 3 and Table 5 showed total potential tariff revenue losses of US$366.4million for Agricultural products of ECOWAS bloc post EPA with Ghana to record the highest loss at US$104.1 million with 28% share, while Niger will record the least loss at US$2.0million with 0.5% share post EPAs (The prediction of Ghana to record highest tariff revenue loss post EPA and Cote d'Ivoire in fourth position is not surprising, this is because they have bilateral interim EPA with EU presently which has not allowed total removal of tariff from their imports from EU yet. This indicates that EU agricultural products, finds its way to ECOWAS bloc presently via Ghana and Cote d'Ivoire who collect tariffs from EU and send these goods to ECOWAS without tariff barrier, however, if EPA is signed by ECOWAS there will be a decrease of EU goods inflow to ECOWAS via these two countries and this could be the reason for these two countries' potential high revenue loss post-EPA).

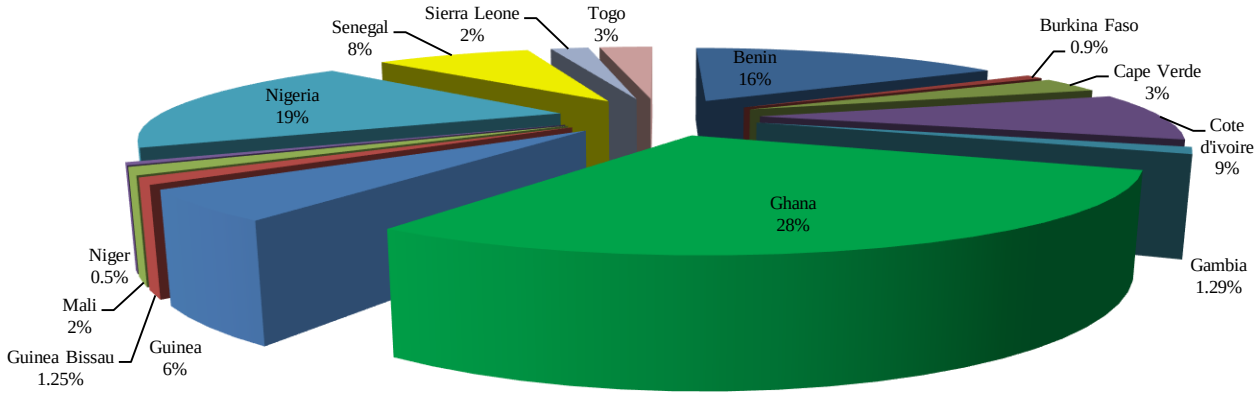

Figure 2. Distribution of Potential Revenue Effect of EPA between ECOWAS and the EU among ECOWAS Countries (Computed from WITS/SMART, Result, 2020)

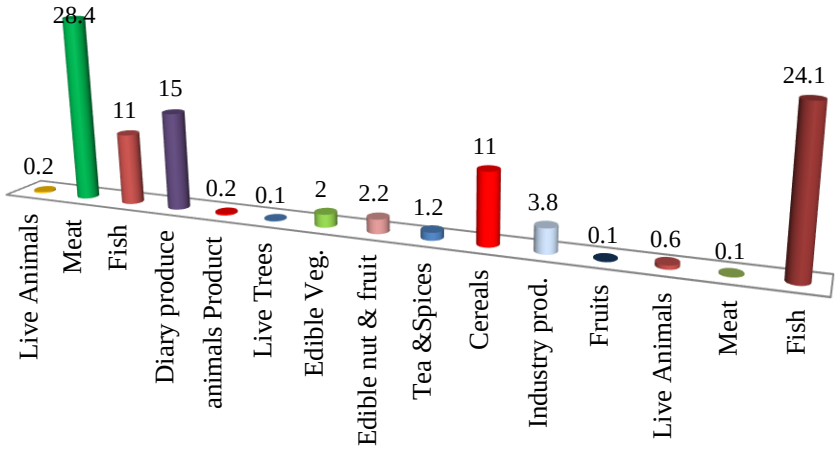

Figure 3. Distribution of Potential Revenue Effect of EPA between ECOWAS and the EU among Agricultural Product Groups in ECOWAS bloc (Computed from WITS/SMART, Result, 2020)

Table 5. Potential Revenue Effect of EPA between ECOWAS and the EU on Agricultural trade of ECOWAS bloc in 000' USD

Product Group	Benin	Burkina Faso	Cape Verde	Cote d'ivoire	Gambia	Ghana	Guinea	Guinea Bissau
Live Animals Meat	-13.6	-12.4	-7.2	-6.9	0.0	-212.8	-78.3	-1.6
Fish Diary produce	-26,654.6	-58.5	-4,092.2	-17,221.8	-107.6	-35,420.6	-6,817.1	-1,190.3
animals Product	-801.6	-93.3	-570.0	-3,119.4	-5.3	-18,905.3	-47.4	-33.0
Live Trees	-723.5	-570.1	-3528.7	-4467.6	-412.9	-10,026.8	-23,16.22	-699.2
Edible Veg.	-46.6	-0.1	-0.5	-36.6	-0.3	-531.1	-0.7	-1.1
Edible nut and fruit	-0.1	0.0	-11.8	-27.8	-1.6	-13.2	0.0	0.0
Tea andSpices	-595.1	-54.8	-1,139.4	-1,185.2	-259.2	-1,843.8	-9.1	-103.1
Cereals	-79.4	-62.4	-131.8	-912.2	-24.9	-1,334.3	-114.5	-62.5
Industry prod.	-30.1	-614.2	-654.3	-602.7	-148.5	-284.2	-135.7	-24.0
Fruits	-4,614.2	-887.9	-407.3	-1,808.9	-1,461.7	-9,595.4	-4,966.7	-776.1
Live Animals Meat	-947.7	-208.3	-190.0	-1,128.5	-1,148.4	-4,000.5	-51.4	-326.0
Fish	-3.1	-2.7	-7.2	-3.5	-7.7	-46.6	-1.0	-8.2
Diary produce	-2,408.0	-37.1	0.0	-38.5	-0.3	-36.7	-0.9	0.0
animals Product	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	-0.1
Total	-22,814.9	-782.5	-577.0	-3,560.6	-1,178.2	-21,831.1	-5,699.0	-1,375.8
	-59,732.6	-3,384.5	-11,317.4	-34,120.1	-4,756.7	-104,082.0	-20,238.0	-4,600.9

Product Group	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo	Total per product group
Live Animals Meat	-67.0	-0.2	-95.1	-32.8	-6.9	-20.0	-554.7
Fish	-185.4	-353.5	-296.0	-4,249.9	-3,296.8	-4099.8	-104,044.0
Diary produce	0.0	-2.2	-16,049.6	-473.0	-36.0	-304.8	-40,440.8
animals Product	-2,848.2	-502.8	-22,683.8	-3,580.2	-1,630.8	-605.8	-54,596.5
Live Trees	0.0	0.0	-23.5	-6.7	0.0	0.0	-647.2
Edible Veg.	-0.6	-1.6	-0.3	-1.7	-0.8	0.0	-59.5
Edible nut and fruit	-246.1	-1.7	-667.3	-766.5	-411.4	-157.6	-7,440.2
Tea andSpices	-264.3	-18.3	-2,361.7	-2,421.4	-71.1	-93.1	-7,952.0
Cereals	-332.7	-232.7	-823.4	-309.8	-111.6	51.2	-4,252.7
Industry prod.	-5.8	0.0	-9,836.1	-6,265.9	-0.1	-539.1	-41,165.2
Fruits	-1,156.0	-106.4	-3,070.3	-878.6	-589.3	-97.2	-13,898.5
Live Animals Meat	-9.5	-4.4	-59.7	-103.8	-55.2	-5.7	-318.3
Fish	-9.5	-0.3	-282.1	-8.1	-42.2	-6.0	-2,869.7
Diary produce	0.0	0.0	-0.1	-3.2	-0.9	-1.1	-5.5
animals Product	-248.5	-785.8	-13,367.7	-10,516.0	-1,040.1	-4,345.1	-88,122.2
Total	-5,373.5	-2,010.0	-69,616.6	-29,617.0	-7,293.1	-10,224.0	-366,367.1

Sources: Computed from WITS/SMART Partial Equilibrium Analysis, Result,2020

The result further shows that the highest loss of US$104million will be recorded on (Meat and Edible Meat Offal which will constitute 29% of the revenue loss.

On the other hand, the result as presented on, Figures 4, 5 and Table 6 on EU showed total potential tariff revenue loss of US$951.8million on its agricultural products post EPA with Poland expected to record the highest loss of US$335.7million which will constitute 30% of the revenue loss. Malta will record the least loss at US$2.2 million with 0.1% share. EU's highest loss of US$25.6 million will be recorded on Meat and Edible Meat Offal which will constitute 22% of the revenue loss post EPAs.

These results imply that both negotiating trade blocs will experience tariff revenue loss if EPA should be signed. However, based on the above results, it was concluded that tariff revenue loss will be much more felt by ECOWAS trading bloc since trade creation will likely outweigh trade diversion for ECOWAS bloc alone with EU to record insignificant trade diversion on their own bloc. This is also based on the fact that the results of this study shows that Ghana and Cote d'Ivoire who have individual bilateral interim EPA with EU pending approval of general EPA between ECOWAS and EU blocs showed that Ghana will experience the highest tariff revenue loss and Cote d'Ivoire in fourth position on this loss among ECOWAS countries post-EPA.

Similarly, this study corroborates findings of Busse et al. (2004) who undertook a study on the potential impact of EPA between African Caribbean and Pacific countries and EU on ECOWAS countries and concluded that EPA will lead to significant loss of revenue for ECOWAS countries.

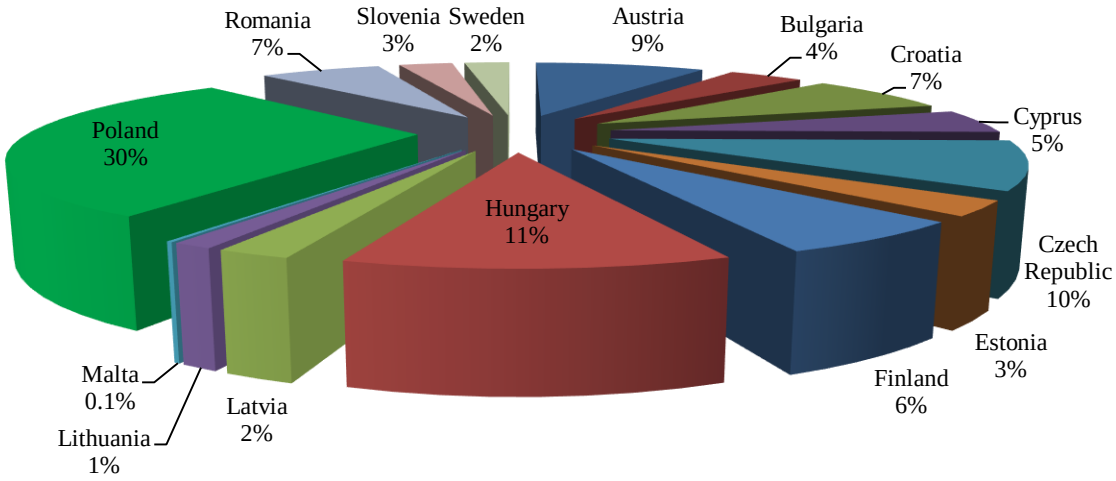

Figure 4. Distribution of Potential Revenue Effect of EPA between ECOWAS and the EU among EU Countries (Computed from WITS/SMART, Result, 2020)

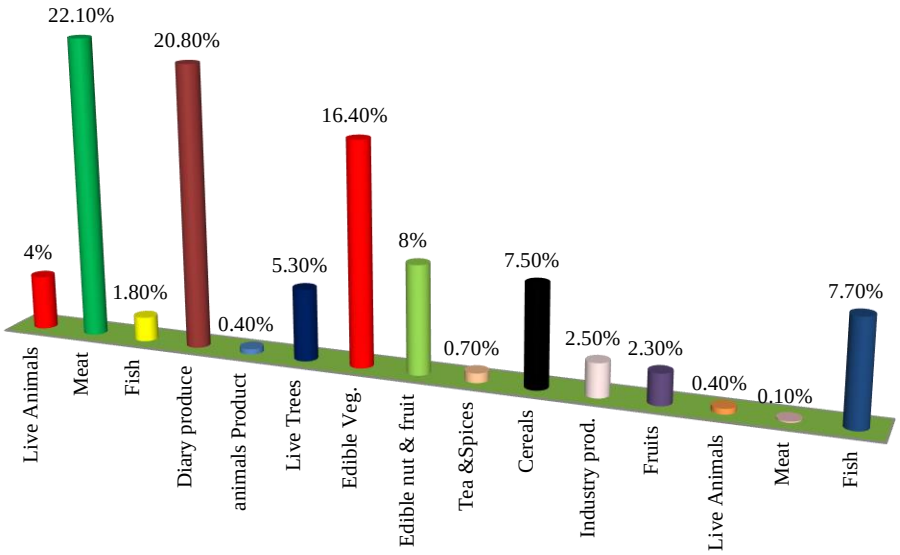

Figure 5. Distribution of Potential Revenue Effect of EPA between ECOWAS and the EU among Agricultural Product Groups in EU bloc (Computed from WITS/SMART, Result, 2020)

Table 6. Potential Revenue Effect of EPA between ECOWAS and the EU on Agricultural trade of EU bloc in 000' USD

Product group	Austria	Bulgaria	Croatia	Cyprus	Czech Republic	Estonia	Finland	Hungary
Live Animals Meat	-1,301.2	-123.0	-2,282.1	-216.3	-1,869.2	-14.7	-265.8	-4,201.3
Fish Diary produce	-662.5	-19,516.0	-34,104.0	-18,310.0	-27,311.1	-4,545.9	-19.2	-40,654.2
animals Product Live Trees	-8,553.4	0.0	-613.2	-1,245.7	-50.0	0.0	-269.3	-783.2
Edible Veg. Edible nut and fruit	-35,385.5	-19,824.0	-15,961.0	-20,699.0	-26,995.2	-15,307.6	-19.9	-25,221.7
Tea andSpices Cereals	-232.0	0.0	0.0	-33.4	0.0	0.0	0.0	-1,277.0
Industry prod. Fruits	0.0	0.0	-2,383.2	-1,077.5	-2,876.2	0.0	-30,571.0	-3,336.9
Live Animals Meat	-33,112.5	-2,652.2	-11,224.0	-2,231.2	-16,131.7	-3,850.2	-22,750.0	-139,55.5
Fish Diary produce	-6,754.8	-2,121.5	-7,459.5	-7,576.1	-11,857.3	-1,583.7	-14,232.0	-14,117.8
animals Product Live Trees	-1,385.4	-529.0	-927.3	-702.5	-503.3	-975.0	-47.0	-1,843.8
Edible Veg. Edible nut and fruit	0.0	0.0	-277.7	0.0	-1,524.4	-4,644.9	-67.9	-5,689.6
Tea andSpices Cereals	-1,141.6	0.0	-2,040.3	-808.1	-3,125.4	0.0	-176.5	-1,278.7
Industry prod. Fruits	-11,907.4	0.0	0.0	-38.4	-3,967.8	0.0	-452.2	-206.8
Live Animals Meat	-104.5	0.0	0.0	-8.8	-96.9	-248.2	0.0	-206.6
Fish Diary produce	-4.1	0.0	0.0	0.0	0.0	0.0	0.0	-10.4
animals Product	-3,482.7	-570.1	-7,159.2	-1,800.6	-11,458.8	-956.2	-1,769.8	-15,507.4
Total	-104,028	-45,336	-84,432	-54,748	-107,767	-32,126	-70,641	-114,335

Product group	Latvia	Lithuania	Malta	Poland	Romania	Slovenia	Sweden	Total per product group
Live Animals Meat	-3,179.5	-226.1	-57.8	-29,907.0	-1,378.4	-621.3	0.0	-45,643.4
Fish Diary produce	-9,955.6	-5,053.2	-11.8	-56,064.0	-28,239.0	-6,912.4	0.0	-251,359.0
animals Product Live Trees	-358.6	0.0	-346.8	-5,494.9	-2,812.9	-157.7	0.0	-20,685.8
Edible Veg. Edible nut and fruit	-4,502.1	-2,675.4	-115.6	-55,996.0	-7,864.4	-5,693.1	-58.3	-236,319.0
Tea andSpices Cereals	-56.0	0.0	0.0	-3,286.8	-214.6	-0.4	0.0	-5,100.3
Industry prod. Fruits	-633.8	-291.8	-457.4	-6,929.1	-6,445.1	-1,694.5	-4,120.0	-60,816.5
Live Animals Meat	-3,095.7	-1,462.2	-450.6	-40,974.0	-8,565.3	-6,923.8	-19,158.0	-1,86,536
Fish Diary produce	-372.5	-608.1	-140.5	-11,002.0	-8,292.9	-2,587.6	-2,129.0	-90,834.6
animals Product Live Trees	-105.2	-0.9	-18.7	0.0	-35.8	-813.4	0.0	-7,887.4
Edible Veg. Edible nut and fruit	-314.6	-29.2	-19.0	-66,956.0	-2,094.3	-3,500.2	0.0	-85,117.8
Tea andSpices Cereals	-823.8	-3,372.5	-307.0	-11,519.0	-1,793.6	-2,031.4	-125.6	-28,543.4
Industry prod. Fruits	-104.2	0.0	-5.1	-7,862.7	-1,977.6	-7.0	-125.6	-26,654.7
Live Animals Meat	-99.0	0.0	0.0	-3,036.1	-131.4	-79.0	0.0	-4,010.5
Fish Diary produce	-3.4	-0.7	0.0	0.0	0.0	0.0	0.0	-18.5
animals Product	-1,621.1	-298.9	-234.9	-36,643.0	-3,563.7	-1,750.4	-1,943.0	-88,760.0
Total	-25,225	-14,019	-2,165	-335,671	-73,409	-32,772	-27,660	-951,751

Sources: Computed from WITS/SMART Partial Equilibrium Analysis, Result,2020.

Potential Welfare Effects of EPAs between ECOWAS and the EU on Agricultural trade of ECOWAS bloc post EPA

The result as presented in, Figure 6, 7 and Table 7 showed total potential welfare gain of US$27.6million for consumers of the agricultural products within ECOWAS bloc with Ghana to record the highest welfare gain at US$6.9million with 25% share. The result further showed that the highest gain of US$16.3 million will be recorded on Meat and Edible Meat Offal of ECOWAS which constituted 59% of its welfare gain post EPAs.

On the other hand, the result as presented in Figure 8, 9 and Table 8 showed that the total potential welfare gain of EU was US$243.5million for their consumers of agricultural products post EPA, Poland was expected to record the highest welfare gain of US$91.9million which will constitute 38% of the welfare gain post EPAs. Also, the result showed that the highest welfare gain of US$53.8million will be recorded on Diary produce which will constitute 22% of welfare gain.

However, these results imply that EPA will lead to welfare increase (consumption surplus) to both ECOWAS and EU consumers but will have more adverse effect on ECOWAS agricultural product producers, this is because this study showed that ECOWAS will record both trade creation and diversion effects on their (ECOWAS) trade bloc, while its negotiating EPAs partner (EU) will only experience slight trade diversion without trade creation and this implies more agricultural products coming into ECOWAS bloc from EU bloc due to the trade creation effect that EPA will cause to ECOWAS trade bloc post EPA. Equally, this will likely cause increased competition for agricultural producers on their ECOWAS market with EU products and this implies welfare decrease to the ECOWAS producers.

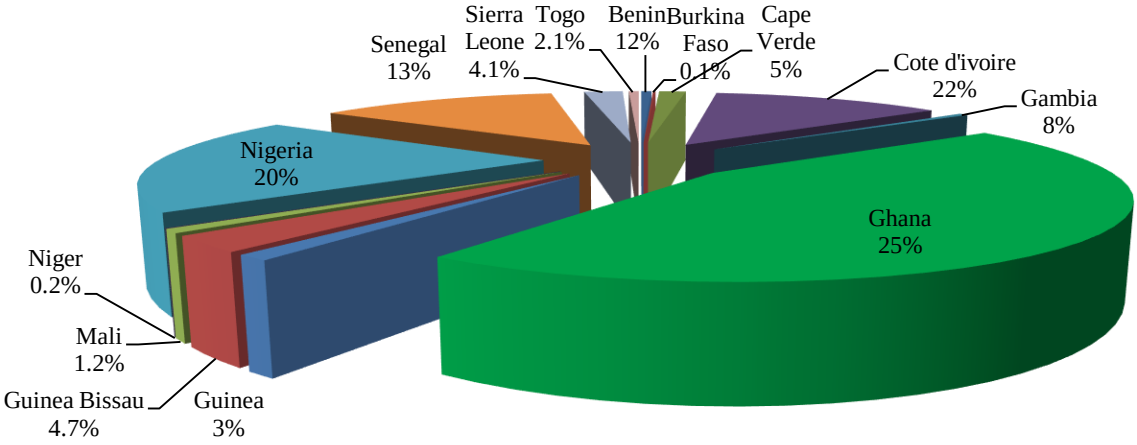

Figure 6. Distribution of Potential Welfare Effect of EPA between ECOWAS and the EU among ECOWAS Countries (Computed from WITS/SMART, Result, 2020)

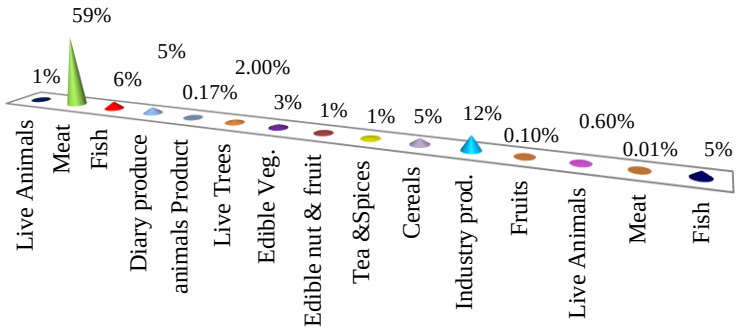

Figure 7. Distribution of Potential Welfare Effect of EPA between ECOWAS and the EU among Agricultural Product Groups in ECOWAS bloc (Computed from WITS/SMART, Result, 2020)

Table 7. Potential Welfare Effect of EPA between ECOWAS and the EU on Agricultural trade of ECOWAS bloc in 000' USD

Products group	Benin	Burkina Faso	Cape Verde	Cote d'ivoire	Gambia	Ghana	Guinea	Guinea Bissau
Live Animals Meat	0.9	1.7	0.0	1.6	0.0	28.7	4.8	0.1
Fish Diary produce	3,297.0	7.8	623.1	5,687.7	7.1	4,654.5	820.4	218.6
animals Product Live Trees	28.4	0.5	295.6	88.7	3.2	477.6	0.4	6.4
Edible Veg. Edible nut and fruit	6.4	10.2	141.1	78.4	20.7	332.4	70.0	394.2
Tea andSpices Cereals	1.4	0.0	0.0	21.3	0.0	16.4	0.0	0.0
Industry prod. Fruits	0.0	0.0	3.6	0.6	0.4	2.2	0.0	0.0
Live Animals Meat	16.2	14.5	150.0	148.0	46.5	151.1	3.9	9.4
Fish Diary produce	0.5	3.3	2.8	29.0	2.1	94.5	14.9	2.1
animals Product Live Trees	1.2	0.7	41.5	21.6	2.0	13.8	1.3	1.9
Edible Veg. Edible nut and fruit	0.5	0.0	14.3	36.2	615.8	198.3	150.8	0.1
Tea andSpices Cereals	29.6	6.2	91.2	41.8	1,503.8	246.1	7.5	637.8
Industry prod. Fruits	0.0	0.1	0.1	0.0	0.1	4.6	0.0	0.1
Live Animals Meat	0.1	0.9	0.0	1.5	0.0	1.3	0.1	0.0
Fish Diary produce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
animals Product	8.1	2.0	21.3	181.3	7.0	650.9	16.4	44.3
Total	3,390.4	48.0	1,384.7	6,337.9	2,208.6	6,872.3	1,090.5	1,315.1

Products group	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo	Total per product group
Live Animals Meat	17.8	0.0	1.4	0.8	0.6	1.7	60.2
Fish Diary produce	80.3	41.3	64.4	177.6	107.6	520.9	16,308.2
animals Product Live Trees	0.0	0.0	684.0	23.4	1.7	19.5	1,629.4
Edible Veg. Edible nut and fruit	76.5	14.8	351.5	117.3	123.5	11.2	1,748.2
Tea andSpices Cereals	0.0	0.0	0.4	0.2	0.0	0.1	39.9
Industry prod. Fruits	0.0	0.1	1.3	0.0	0.3	0.0	8.6
Live Animals Meat	78.5	0.0	63.0	77.4	375.6	24.0	1,158.1
Fish Diary produce	16.8	0.6	52.0	111.1	5.2	3.9	338.8
animals Product Live Trees	12.8	5.2	84.1	17.4	3.5	1.0	208.0
Edible Veg. Edible nut and fruit	0.0	0.0	224.6	14.3	0.0	0.0	1255.2
Tea andSpices Cereals	35.8	0.0	208.2	58.1	469.3	9.0	3,344.4
Industry prod. Fruits	0.7	0.1	4.4	4.1	0.1	0.0	14.7
Live Animals Meat	0.7	0.0	11.2	0.3	1.3	0.3	17.6
Fish Diary produce	0.0	0.0	0.0	0.0	0.1	0.0	0.2
animals Product	11.7	0.1	289.7	188.0	30.8	7.9	1,459.7
Total	331.6	62.3	2,040.4	790.0	1,119.7	599.6	27,591.0

Sources: Computed from WITS/SMART Partial Equilibrium Analysis Result, 2020.

Table 8. Potential Welfare Effect of EPA between ECOWAS and the EU on Agricultural trade of EU bloc in 000' USD

Product group	Austria	Bulgaria	Croatia	Cyprus	Czech Republic	Estonia	Finland	Hungary
Live Animals Meat	566.0	15.7	82.2	924.2	790.5	0.9	5.3	1,506.3
Fish Diary produce	161.3	3,664.0	1,908.4	4,707.7	6,189.5	426.6	0.3	6782.1
animals Product Live Trees	8,354.4	0.0	40.2	264.0	3.9	1954.9	35.9	475.9
Edible Veg. Edible nut and fruit	7,090.1	3,834.9	621.4	4,752.6	3,144.9	0.0	2.8	4081.7
Tea andSpices Cereals	5.6	0.0	0.0	2.7	0.0	0.0	0.0	71.5
Industry prod. Fruits	0.0	0.0	119.1	162.0	135.6	0.0	6768.5	407.9
Live Animals Meat	18,846.5	535.3	1,011.0	531.2	1,610.5	426.7	3,266.8	2,895.8
Fish Diary produce	488.5	197.0	472.9	1,652.1	956.5	144.8	1,411.9	1,584.4
animals Product Live Trees	116.7	0.0	16.5	133.9	14.0	188.8	21.9	282.1
Edible Veg. Edible nut and fruit	0	88.2	91.9	0	403.1	682.3	2.5	1237.3
Tea andSpices Cereals	10,159.6	144.2	2,074.1	239.5	506.8	682.3	173.5	379.4
Industry prod. Fruits	4193.7	0.0	0.0	2.5	339.9	0.0	162.8	19.3
Live Animals Meat	8.1	0.0	0.0	0.4	1.7	17.2	0.0	6.0
Fish Diary produce	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.3
animals Product	363.4	46.0	503.7	164.7	1,080.3	51.6	196.1	1,929.2
Total	50,354.1	8,525.2	6,941.6	13,537.5	15,177.2	4,576.2	12,048.3	21,660.0
Product group	Latvia	Lithuania	Malta	Poland	Romania	Slovenia	Sweden	Total per product group
Live Animals Meat	531.1	30.8	2.7	8,521.3	69.0	45.1	0.0	13,091.2
Fish Diary produce	1314.5	594.3	0.2	12,220.5	2,517.8	774.6	0.0	41,261.8
animals Product Live Trees	25.6	238.9	61.3	571.5	1,006.9	8.9	0.0	13,042.0
Edible Veg. Edible nut and fruit	479.4	0.0	1.2	28,145.2	836.0	845.8	1.3	53,837.4
Tea andSpices Cereals	2.2	0.0	0.0	335.8	3.1	0.1	0.0	421.0
Industry prod. Fruits	33.6	17.5	28.1	1383.4	1697.8	147.6	57.3	10,958.2
Live Animals Meat	215.9	51.0	32.7	8,268.2	1,872.7	638.0	799.0	41,001.7
Fish Diary produce	6.4	17.6	3.6	1,204.8	519.2	195.2	70.8	8,925.6
animals Product Live Trees	0.3	0.0	1.1		2.1	74.0	0.0	851.4
Edible Veg. Edible nut and fruit	25.0	37.5	0.3	15,414.0	317.7	307.5	0.0	18,607.2
Tea andSpices Cereals	138.9	343.2	27.5	11,009.5	340.0	375.2	3.3	26,596.8
Industry prod. Fruits	6.1	0.0	0.2	720.1	178.2	0.2	0.0	5,623.0
Live Animals Meat	5.9	0.0	0.0	624.2	4.8	0.9	0.0	669.1
Fish Diary produce	0.5	0.0	0.0	0.0	0.0	0.0	0.0	2.1
animals Product	97.3	6.9	4.8	3,498.2	454.6	118.9	118.0	8,633.6
Total	2,882.7	1,337.6	163.7	91,916.5	9,819.7	3,532.0	1,049.6	243,522.0

Sources: Computed from WITS/SMART Partial Equilibrium Analysis, Result,2020

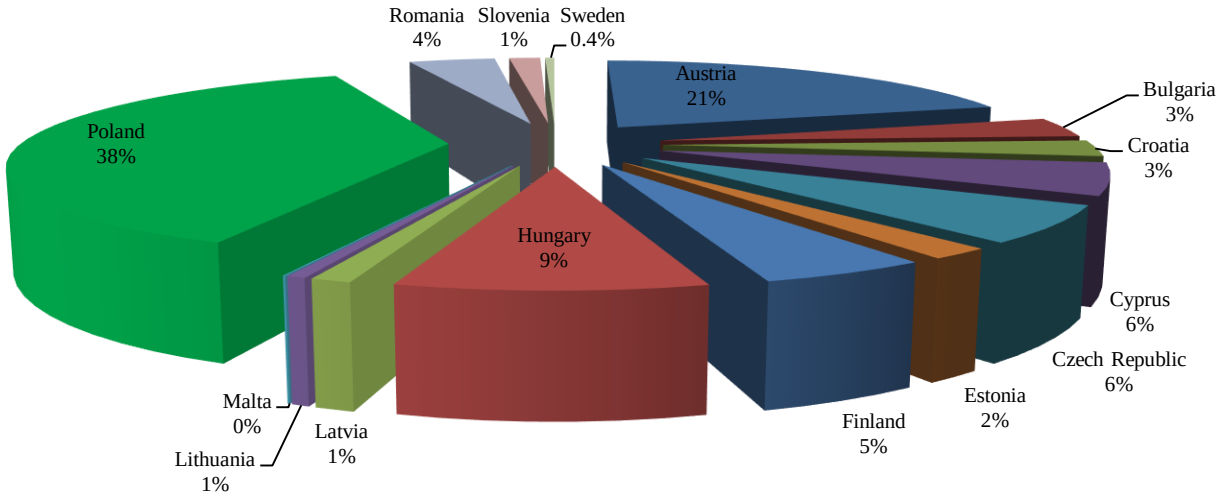

Figure 8. Distribution of Potential Welfare Effect of EPA between ECOWAS and the EU among EU Countries (Computed from WITS/SMART, Result, 2020)

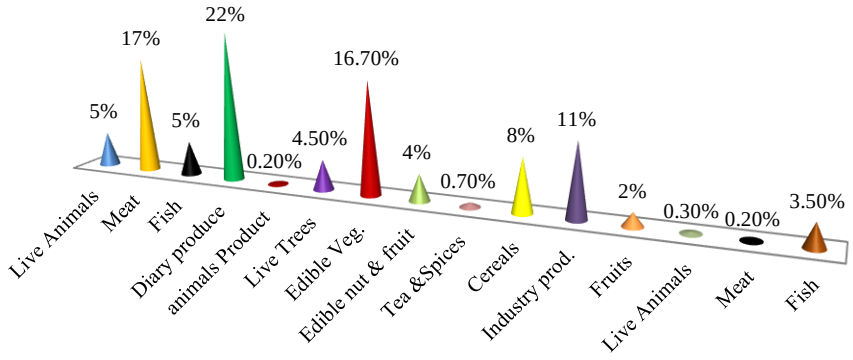

Figure 9. Distribution of Potential Welfare Effect of EPA between ECOWAS and the EU among Agricultural Product Groups in EU bloc (Computed from WITS/SMART, Result, 2020)

Conclusion

The study concluded that trade creation will outweigh trade diversion effect for ECOWAS post EPA. Also, there will be no trade creation effect in EU market with total less significant trade diversion effect for the EU bloc on agricultural products studied. This equally led to the conclusion that signing of EPA by the ECOWAS bloc with EU will lead to a trade diversion of agricultural trade in favour of EU.

The study concluded that ECOWAS EPAs with EU will lead to loss of tariff revenue on Agricultural products imports of both blocs negotiating EPA. This is because imports from both blocs will be duty free following full EPA. Also, this study concluded that tariff revenue loss will be much more felt by ECOWAS trading bloc since pre-post-EPA, its trade creation will outweigh trade diversion on ECOWAS bloc. This is also based on the fact that the results of this study shows that Ghana and Cote d'Ivoire who have individual bilateral interim EPA with EU pending approval of general EPA between ECOWAS and EU blocs showed that Ghana will experience the highest tariff revenue loss and Cote d'Ivoire in fourth position on this loss among ECOWAS countries post-EPA and this indicates that EU goods have been getting into ECOWAS market via these two countries.

This study concluded that there will be positive welfare gain (consumer surplus) for consumers in all agricultural products in both blocs negotiating EPA. Also, the study concluded that welfare effect of EPA will be adverse for both negotiating blocs' agricultural producers but may likely be more adverse for ECOWAS government who will lose their tariff revenue due to EPA and ECOWAS agricultural producers who will face competition due to the inflow of these agricultural products from EU to ECOWAS bloc post-EPA and on the fact that there will be only trade diversion effect in EU bloc post-EPA.

Recommendations

- The study recommends that the on-going Economic Partnership Agreements (EPAs) negotiations between ECOWAS and EU need not to be hurriedly signed by ECOWAS bloc. This is based on the fact that results on the potential trade creation and diversion effect of EPA show positive potential trade creation effect to out weight diversion effect for agricultural products of ECOWAS bloc if EPA should be signed with EU; insignificant trade diversion with no trade creation effect for EU bloc.
- This study recommends fiscal reforms to replace EPAs induced tariff revenue losses for ECOWAS government. The reforms should entail shifting tariff revenue from trade to non- trade tax sources and fiscal revenue collecting policies efficiency should be improved. Example of non-tariff instruments that may assume greater importance in revenue generation is an increase on value-added tax (VAT) charges on agricultural products imports from EU by ECOWAS government to reclaim the tariff revenue loses that EPA is likely to induce if signed and to protect agricultural producers from much competition within the bloc. If ECOWAS bloc can adopt these measures, the ongoing negotiation on EPA should be signed since the lost revenue can be reclaimed via these measures identified and competition of these products reduced within ECOWAS bloc.

ECOWAS needs to strengthen its agricultural production efficiency to be able to compete globally and encourage its individual countries to return to a single digit borrowing interest rate to encourage more investment by local agricultural producers if they want to enjoy the benefits of trade treaties at long run. This is still based on the fact that there will be no trade creation effect in EU market with total less significant trade diversion effect for EU bloc on agricultural products studied.

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