SUBMITTED TO:

AFRICAN RESEARCH AND RESOURCE FORUM (ARRF)

AGRICULTURE DEVELOPMENT POTENTIAL AND FOOD SECURITY CHALLENGES IN THE EAC

Submitted by:

ESRF

Economic and Social Research Foundation
51 Uporoto Street (Off. Ali Hassan Mwinyi Rd.) Ursino Estate
P.O.Box 31226 Da es Salaam
Tel +255 22 2760260, Fax +255 22 2760062
www.esrftz.org

Mbilinyi Apronius (*ambilinyi@esrf.or.tz*)*

The paper was presented at the Regional Policy Forum in Kampala, Uganda in 16th – 17Th November, 2011

**The Author is an Assistant Research fellow at the Economic and Social Research Foundation (ESRF)*

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

This paper highlights issues related to development of the agriculture sector, foods security concerns, factors undermining the agricultural growth and development and policy implementation challenges in the EAC region. What is clear from the paper is that, there is a big potential for agriculture transformation, growth and development to attain both food security and poverty reduction objectives when the right policies are applied.

The paper notes that all EAC member states have low Private and Public sector investments. Moreover, the region's sector FDI attraction are comparatively low leading to low productivity, transformation, limited growth of the sector and weak linkages with other sectors. The region also faces too much market interferences and regulations that is manifested by the foods security and poverty reduction dilemma as provided by the Tanzanian case. This is happening amid member states committing themselves to many regional and international agreements that they will liberalize their markets and allocate more resources to the agriculture sector.

The starting point to solve the agriculture development and foods security challenges is to allow the market forces to work with very minimal prudential regulations so that small scale famers and investors get their returns from investments in the sector. This will create incentives for more players to involve in this sector that is currently regarded as very risky. The public sector should invest more in the sector by allocating more financial resources as agreed in the Maputo declaration and CADP initiatives while the private sector needs to be encouraged to invest in the sector. EAC governments need to creating the best investment climate that promote the market rather undermine it by too many regulations such as fixing export bans that does not solve any of the intended objectives.

The other argument put forward in this paper is that with 'good political will and leadership' the observed challenges will be solved in the short and long run horizon. Political will is instrumental because most of the decision for resources allocation and policy implementation lies in the hands of politicians who make key decisions in all the EAC countries.

1.0 INTRODUCTION

The East Africa Community (EAC) is a regional intergovernmental organization of the Republics of Burundi, Kenya, Rwanda, and Uganda, and the United Republic of Tanzania. The aim of the EAC is to widen and deepen co-operation among the Partner States in, among others, political, economic and social fields for their mutual benefit. To this extent the EAC states concluded the EAC Customs Union which entered into force on January 1st 2005 and became fully effective on January 1st 2010 and have now adopted the Common Market (CM) Protocol. The CM will be followed by the establishment of a Monetary Union and ultimately a Political Federation. The EAC has a combined population of 134 million, land area of 1.85 million km^2, and a combined gross domestic product of US$ 41 billion. However, the per capita income of most of the EAC citizens is still as low as US$550, implying that poverty is still a big challenge in the region. Hence poverty reduction and generally improved welfare of the people is an underlining agenda behind EAC establishment.

Three quarters of the world's poorest people get their food and income from farming small plots of land typically the size of a football field or smaller and most of them labor under difficult conditions. They grow a diversity of local crops and must deal with unique diseases, pests, and drought, as well as unproductive soil. Their livestock are frequently weak or sick, resulting in reduced production of eggs and milk to eat or sell. Reliable markets for their products and good information about pricing are hard to be accessed and more often, government policies do not adequately serve their interests for developing the productivity in agriculture, where Women farmers are probably the most affected (ACBF 2011).

The East African Community's Agricultural and Rural Development (EAC-ARD) policy recognizes the importance of eliminating hunger and ensuring sustainable food security within the region as a necessary first step to poverty eradication. This is to be achieved through ***stimulating agricultural development****, which constitutes the overall objective of the EAC Treaty regarding cooperation in agriculture and rural development in achieving food security. Further, the EAC-ARD policy aims at attaining food security through increased agricultural production, processing, storage and marketing.*

Objectives of the paper

I. To identify the level of the agricultural development in terms of resources committed for the sector, productivity level, value addition, and land use

II. To indicate the opportunities existing for developing the sector and assist in poverty alleviation.

III. Share experience of the implementation of the recently approved common strategy for foods security and its action plan

IV. To stimulate a debate on how to overcome agriculture development and foods security challenges in future

Conceptual Framework

In this paper agriculture will mean *crop and livestock production, fisheries and forestry*, while ***agriculture development*** will mean a sustainable use and increase in the productivity with respect to crops, livestock, and fisheries. While **Food security** *refers to a situation when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life," (*FAO World Food Summit, 1996, Rome). W***hile Food Insecurity** *exists when people lack access to sufficient amounts of safe and nutritious food, and therefore are not consuming enough for an active and healthy life due to the unavailability of food, inadequate purchasing power, or inappropriate utilization at household level (FAO, 2008).*

The food security approach consists of four pillars. (1) **Availability**; equals sufficient quantities or appropriate food, e.g. from own or domestic production, markets, or imports including food aid. (2) **Accessibility** means that sufficient resources are obtained to acquire appropriate food for a nutritious diet. The household's access to food depends on consumer prices, incomes, purchasing power, or consumption patterns that are often influenced by policy and decision makers. (3) **Utilization** deals with diversified diets and a healthy physical environment for a nutritional well being and for meeting individual physiological needs. (4) **Stability** handles the temporal dimension of food security; it is crucial to understand the concept of **vulnerability** (chronic, seasonal and transitory food insecurity) at local/community levels. In order to achieve food security through regional trade, there are three prerequisites that have to be fulfilled:

- An existence of food surplus regions and food deficit regions.
- Production and consumption for food staples in both types of regions be complementary.
- Trade relations between the two countries/regions exist.

Why a need for Agriculture Development?

- Agriculture is largest employer in the region (more than 70% of the EAC region) and 59% of the labour force in Africa (IFPRI, 2011) with agriculture contributing 13% of the Value added to GDP in 2009.

- GDP growth in the agriculture sector is four times more effective in raising incomes of extremely poor people than when it originates from other sectors(ACBF,2011)

- Severe hunger and poverty affects nearly 1 billion people around the world and more than half of the EAC Population.
- Increasing population and urbanization. By 2050, it's estimated that the word's population will reach 9 billion while urbanization increasing by 3%-5%. Global food production will need to jump by 70 percent to 100 percent to feed these people. The region has high Population growth (around 2.8%). Declining in real incomes, increasingly scarcity of resources and climate changes are putting additional strains on agricultural productivity.

- Two billion people in the developing world are malnourished. Malnutrition continues to be the world's most serious health problem and the single biggest contributor to child mortality. According to the global hunger index produced by FAO in 2011, all EAC countries are food insecure, the index ranges from alarming to most serious (see table 1)

The rationale for investing in agriculture is clear as agricultural development is believed to be two to four times more effective in reducing hunger and poverty than any other sector (i.e. 70% of the 134 mill(IFPRI,2011) as most EAC citizens are employed in agrarian sector). Hence assisting poor families grow more food crops is the best way to fight hunger and poverty in the region and the world in particular, When farmers grow more food and earn more income, they can achieve self-sufficiency and live better lives. Improvements in agricultural productivity create social and economic ripple effects. With increased incomes, farmers can better feed their families, send their children to school, provide for their health care, and invest more; this makes communities economically stronger and more stable.

2.0 FOOD SECURITY CONCERNS IN THE REGION: IS TRADE APPROACH FEASIBLE?

Despite the EAC member states ratifying the Common market, EAC Common Strategy for Foods Security in 2010 and its Action Plan, unfounded fears/concerns and mistrust of the role of a trade-based food security system among the EAC member states continue to exist such that the formalized policy framework to encourage food trade in the region stated in the strategy was not put in practice as some countries such as Kenya and the Horn of Africa in 2011 faced a huge shortage of foods while other had surplus. Except for Uganda in recent years, this mistrust is reflected in generally inward-looking food security policies in each country that discourages exports of food commodities. This is an unfortunately situation as all the AEC states had signed the CSFS in 2010 and the events in Northern Kenya and Horn of Africa was a test for the member states' commitment to the Regional agreements. *This event is discouraging because one of its member state, Tanzania had plenty stock of food in Southern Part of the country that would have been supplied to its partiers to cushion the problem.* The FAO state of food insecurity for 2011 emphasizes the importance of mult-approach to foods security to include both increase in production and trade, this shown by one of the key massages in the FAO report that states:

> ***'A food security strategy that relies on a combination of increased productivity and general openness to trade will be more effective than a strategy that relies primarily on the closure of borders' (FAO,2011 pg. 25)***

What cannot be challenged is the fact that the whole region generally experience food deficits although sometimes seasonal and deficits in one country may be accompanied by gluts in another or in some parts within the same country hence trade could mitigate this challenge.

2.1 Measures for Food Security: Global Hunger Index (GHI)

One way of measuring food security is to assess the level of hunger in each country; this is indicated by the global hunger index computed by IFPRI yearly. The Global Hunger Index is a comprehensive measure of hunger and malnutrition. The GHI ranks countries based on three indicators and combines them into one. The indicators are: Proportion of people who are calorie deficient, Child malnutrition prevalence, and Child mortality rate. Countries are ranked on a 100-point scale, with 0 being the best score (no hunger) and 100 being the worst, though neither of these extremes is achieved in practice(IFPRI,2011). The GHI Values less than 4.9 reflect low hunger, values between 5 and 9.9 reflect moderate hunger, values

between 10 and 19.9 indicate a serious problem, values between 20 and 29.9 are alarming, and values exceeding 30 are extremely alarming. The Global Hunger Index for the EAC states is shown in the table below. The average Global Hunger index (GHI) for 1990 to 2011 shows that all the EAC countries are food insecure, the food insecurity situation ranges from serious for Kenya and Uganda and alarming for Tanzania and Rwanda. Burundi is the only country in the region whose GHI for the years is extremely alarming. The situation does not seem to improve significantly over the said time and even for 2011 the index remain more or less the same among the EAC member states (IFPRI, 2011)

Table 1: EAC Global Hunger Index (GHI) 1990 - 2011

Country	1990	1996	2001	2011	Average GHI 1990 - 2011	Situation
Tanzania	26.6	22.2	23.6	20.1	23.1	Alarming
Rwanda	28.5	32.7	25.2	21.0	26.9	Alarming
Burundi	31.4	36.3	38.5	37.5	35.9	Extremely alarming
Kenya	20.6	20.3	19.9	18.2	19.8	serious
Uganda	19.0	20.4	17.7	16.7	18.5	serious

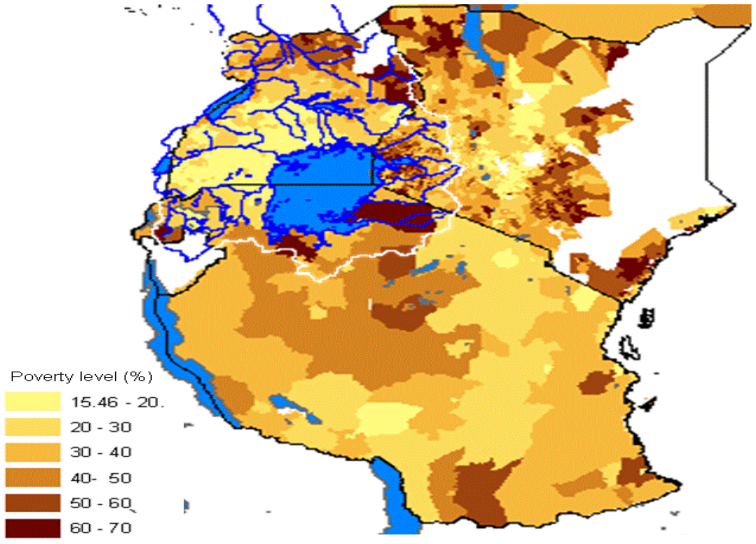
Source: IFPRI, 2011 and author calculations

To explain the cause for food security using the rational perspective, Bates (1981,1988) asserted that, '*while most Africans work in rural areas and make a living from farming and the agriculture sector, the policies undertaken by their governments often go against the interest of the farmers'*, and according to him this contributes to decline in food productivity to feed their citizens. The Bates assertion related to policy decision of restricting the export markets by countries such as Tanzanian government in several years, this practice denies famers and investors returns; this is shown below in the dilemma between foods security and income growth. Such policy decisions leading to dilemma and others many not reflect the interest of the famers as they lower production incentives and cause foods insecurity (ACBF, 2012).

2.2 Access to Food: Large Number of People Cannot Access Food

Most people in EAC live in poverty, with more than half the population living on less than one dollar a day (EAC, 2010). Almost 32% of all persons in this region livelihood are currently estimated to be highly food insecure and it is estimated that 4 million of the region's urban dwellers are highly food insecure (see Map below). Some of the reasons include poor food distribution; disruption of food production and distribution due to social unrest and political instability. Food accessibility is always a problem three to four months before harvest and measures are needed to stabilize food prices at this period. Increasing food prices particularly during the last 4 years has also been a major cause of high food insecurity for both rural and urban poor households with low ability to meet basic food with their low and static wages.

Figure 1: Areas experiencing food inaccessibility in the region



Accessibility to food may be improved through the strategic investment interventions in the region.

2.3 Role of Trade in Food Security

Under-performance of agricultural markets in Eastern and Southern Africa is a general phenomenon which leads to wide spread of pockets of food insecurity around the region (EAC,2008). Inefficient infrastructure makes movement of food crops from surplus to deficit areas difficult, informal trade which erupted due to increasing Non-Tariff Barriers and political motives among partners has made the problem even worse by imposition of trade embargo in some member states. These problems have been prevailing despite the implementation of custom union. Lack of "organizing principle" in terms of systematic approach to production, value addition, strategic grain reserve management and free trade so as to promote a healthy food staple trade has led to unsustainable and erratic solutions to food insecurity in the region (EAC-CSFS, 2010).

It is therefore important to understand the comparative advantages in the different EAC Partner States in food supply and their seasonality as part of the a sustainable solution to solving food insecurity. Often policy makers lack sufficient information to gauge food security crisis and make appropriate and/or informed policy decisions to develop the sector. For instance in Tanzania, the government has been imposing domestic food price controls or trade ban (export bans) ban even when there is no food crisis in the country; this limits farmer's (even local investors in agriculture) incentives to increase the production of food

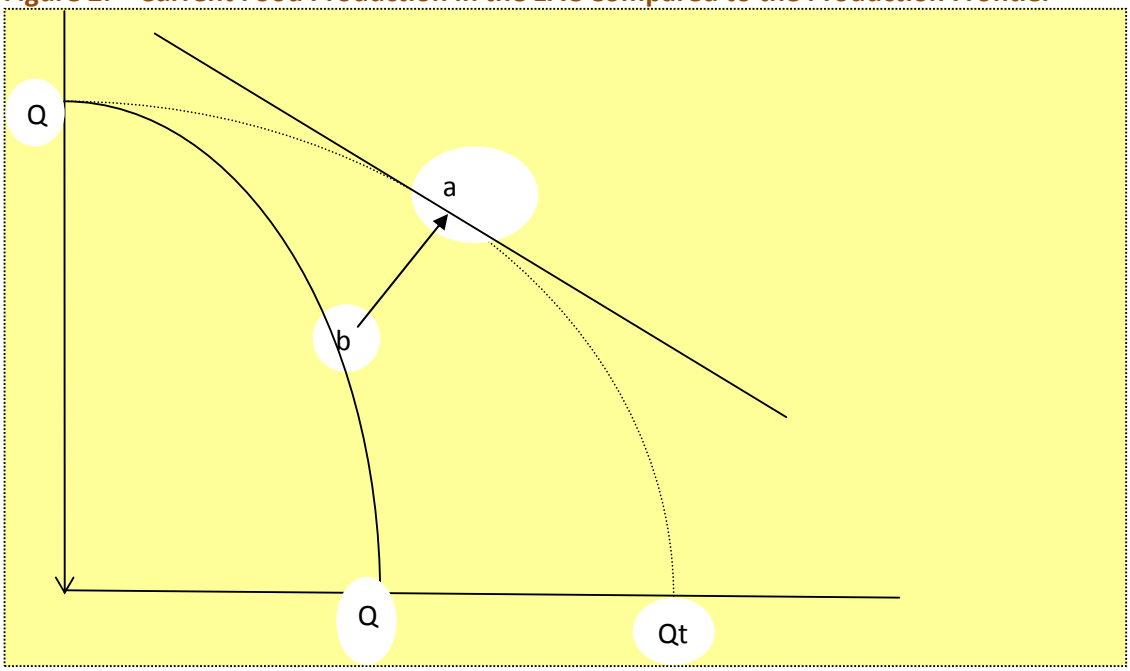
crops in subsequent cropping season given ecological advantage (IFPRI, 2011). It is thus important to focus on identifying supply-oriented polices and interventions that impinge agriculture development in the region. Equally important is a focus on improved infrastructure and strengthening institutions, both of which are needed to ensure food is efficiently and effectively transported from one place to another or from country to another within the EAC and possibly from EAC to the Horn of Africa, while the presence of the big market for foods items and the current skyrocketing of prices in the world and the region should be viewed as an opportunity and not a threat for agriculture development.

3.0 AGRICULTURE DEVELOPMENT IN THE EAC: WHERE ARE WE?

Understanding the importance of agriculture development and foods security in the region, the EAC secretariat formulated the Agriculture Sector and Rural Development Strategy that clearly spells out the need for food secured region. Moreover, the regional formulated the Common Strategy for food security (CSFS) in 2010 and it's Action Plan that was ratified by all member states in 2010. Other efforts for agriculture development in the regional include harmonization of agriculture trade policies, regulation, rules and practices, formation for various tasks forces and agreement of other regional arrangements such as the CADP and AGRA initiatives etc. However, implementations of these initiatives remain to be a major challenge.

Figure 2 below portray food production within the EAC region; the region is much below the production frontier at point ***b*** despite available production capacity shown by point ***a.*** ***Adoption of value addition and trade based approach for food security can create a supply response*** leading into optimum allocation of the available resources within a short run to move slowly to point ***a*** in the figure; **in the long run this will provide an incentive for technology adoption leading into outward shifting of the production** frontier and finally leading to agriculture development shown by line QQ_t

Figure 2: Current Food Production in the EAC Compared to the Production Frontier



Source: EAC- CSFS, 2010

Therefore one could safely argue that by addressing all the supply-side constraints, ensuring adequate supply of land, water, improved seeds and breeds, properly functioning infrastructure and apply the recommended technologies and husbandry practices, then food security should automatically be assured and sustained. Unfortunately agriculture is typically market-led and farmers tend to be very sensitive to price signals offered by the market either historically or in anticipation (EAC-CSFS 2010***).*** However***,*** looking at other indicators the region still lags behind in terms of land use, forestry use, irrigation, value addition, and fertilizer use despite available potentials.

Agricultural production within the EAC region is comprised of major food crops such as cereals, tubers, pulses, bananas and vegetables, while major cash crops include tea, cotton, tobacco, cloves, sisal, sugar cane, pyrethrum and cashew nuts. Other important components of the sector include fishery, livestock, forest products and horticulture. It is important to note that, a significant part of the agricultural sector contribution to overall Gross Domestic Product (GDP) of the partner states is accounted by **non monetary** production activities (subsistence and informal). It is therefore valid that, unless agriculture development process embraces agriculture commercialization, the objective of agriculture development and realizing food security and poverty reduction in EAC partner countries will be far reached.

3.1 Land Use, Irrigation, Fertilizer Application

Other indicators for agriculture development include: the land use, irrigation and fertilizer application analysis. Looking at the table below the arable land as a percentage of agriculture area, irrigation area as a percentage of arable and permanent crops, fertilizer use per hectare; all are comparatively low in the region compared to other parts of the world. The table indicates that Worldwide only 28% of the agriculture land is arable and only 18% is under irrigation for permanent crops. Despite having a large land area, the EAC has low area under irrigation; for instance the whole SSA region has only 3.7%, Burundi 5.5%, Tanzania 3.3%, Uganda 0.1% Rwanda 0.4% and Kenya 1.7%. With climate change problem that cause uncertainty in rainfall pattern and low irrigation rates in the region it should not surprise the low productivity, foods insecurity and income poverty witnessed in the region, hence more investment for agriculture particularly in areas for irrigation is needed in future. The table below also shows that the region also lags behind other regions in terms of fertilizer application; where the Asian and Pacific countries apply 171.6 kg per ha. Only Kenya that the highest application of 31.6kg/ha; the other countries have as low as 2.6 kg per ha for Burundi and Tanzania and Uganda 1.8 and Rwanda 13.7kg/ha respectively. These low fertilizer application is among others is attributed to the higher input prices that poor small scale farmers cannot afford purchasing unlike in developed economies where farm inputs are highly subsidized and favorable policy environment for private investments exist.

Table 2: Land Use, Irrigation and Fertilizer Applications

Country	Total land Area (thousand ha)	Forest & Wood Area (thousand ha)	Agriculture Area (thousand ha)	Agriculture Area per capita (ha/person)	Arable land (% of agriculture area)	Irrigation area (% of arable & permanent crop area)	Fertilizer use (kg/ha arable land.)
World	13, 039,600	3,868,769	5,006,880	0.80	28.0	18.0	100.8
Dev. Countries	5,382,402	1,720,221	1,127,007	1.34	34.5	10.6	82.6
Asia & Pacific	2,014,361	511,796	1,029,953	0.31	39.7	33.7	171.6
SSA	2,362,209	643	1,007,008	1.47	16.0	3.7	14.6
Burundi	2,568	94	2,170	0.33	45.4	5.5	2.6
Tanzania	88,359	38,811	40,100	1.11	20.0	3.3	1.8
Uganda	19,710	4,190	12,312	0.49	41.4	0.1	1.8
Rwanda	2,467	309	1,850	0.22	60.3	0.4	13.7
Kenya	56,914	17,096	26,46	0.84	17.4	1.7	31.0

Source: FAO: State of food and Agriculture 2009

3.2 Cereal Yield: EAC compared to emerging economies of India and china

When the region is compared to other developing countries such as China and india, the yield measuring productivity is still low as seen in the tables below. These could be a benchmark for the regional expansion of production to catch up with emerging economies. Comparing table 3 and 4 in year 2000 the cereal yield was as low as 848 kg/ha for Rwanda and 1539 kg/hectare for Uganda. However, there was an insignificant improvement where in 2009 the yield increased to 1026 kg/ha for Rwanda and 1561 for Uganda. According to the World Bank the average Cereal yield (kg per hectare) in China was reported at 4,718 kg/ha while for India was 2,296 kg/ha in 2000.

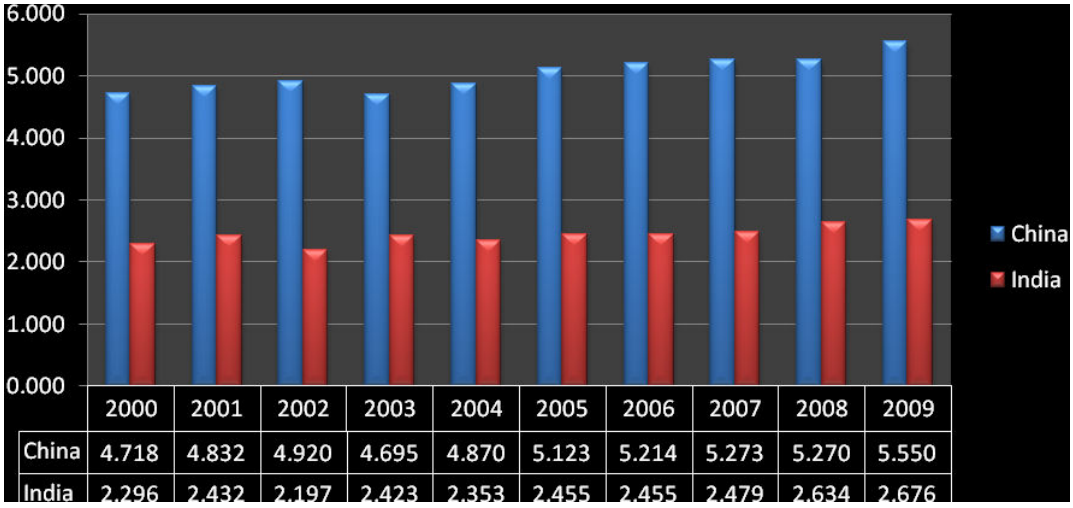
Table 3: EAC States Cereal Yield (kg/hectare)

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
TZ	1439	1950	1898	1856	1369	1098	1147	1238	1224	1224	1344
KY	1374	1639	1488.	1594	1805	1646.	1646	1773.	1416	1204.	1558
UG	1539	1641	1638.	1677	1468	1532	1522	1525	1534	1539	1561
RWA	848	913	1028.	944	959	1183.	1117	1093	1078.	1097	1026
BU	1249	1306	1334.	1336	1354	1379	1297	1312	1312.	1312	1319
Total	6450	7450	7388	6409	6957	6840	6732	6942.	6566	6377	6811

Source: FAO website (www.fao.org).

In 2009 the yield increase almost 30% to 5,550 and 2,676 kg/ha for China and India respectively. Cereal yield was measured as kilograms per hectare for wheat, rice, maize, barley, oats, rye, millet, sorghum, buckwheat, and mixed grains. The information provided above imply that for sustainable agriculture development and foods security, the EAC region still has a long journey to improve the yield in cereals that form a big part of food crops that is necessary for solving food security problem in the region.

Table 4: Cereal Yield in China and India (Kg/Hectare) 2000-2009



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
China	4.718	4.832	4.920	4.695	4.870	5.123	5.214	5.273	5.270	5.550
India	2.296	2.432	2.197	2.423	2.353	2.455	2.455	2.479	2.634	2.676

Source: Tradingeconomics.com

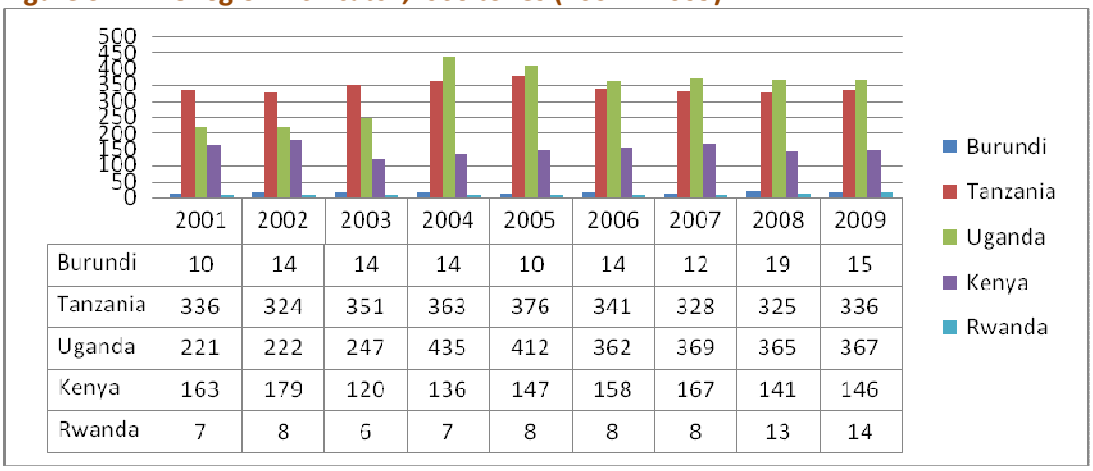
Most of the livestock (cattle, sheep, goats and camel) are found in the pastoral and agro-pastoral farming system. These are areas with low potential for farming with agro-ecological zones faced with adverse weather conditions. The areas are at the same time prone to

droughts and low covariance of rainfall. In most parts of the year food security situation in these areas is very low. The region is also believed to face low production in livestock and poultry product such as processed milk, meat and eggs. For increasing income and food for the pastoral societies found in arid and semi-arid areas there is a need to encourage value addition for these products, best practices can be learned in countries such as Botswana and South Africa who have managed to transform this subsector.

3.3 Fish Catch

As far as fishing is concerned in the region, challenges such as low technology, lack of storage facilities, and financing constrain fish catch in the region, moreover fish farming is also low, this is the areas that more emphasis could be put to increase fish production in the region to satisfy the domestic markets and export the surplus. For sustainable poverty reduction, it is better to promote other non-farming sources of income in marginal agricultural areas and develop their purchasing power for food to increase citizen's accessibility for food and other necessities. The figure below indicates fish catch in the region for the period of 2001 to 2009. Fluctuating trend among the member states with Uganda leading followed by Tanzania and Kenya, while Burundi and Rwanda are last due to their geographical positions. This an areas that need more encouragement for the private sector to invest more but in the sustainable way as sea resources seem to decline with time.

Figure 3: EAC region Fish catch, '000 tones (2001 – 2009)



	2001	2002	2003	2004	2005	2006	2007	2008	2009
Burundi	10	14	14	14	10	14	12	19	15
Tanzania	336	324	351	363	376	341	328	325	336
Uganda	221	222	247	435	412	362	369	365	367
Kenya	163	179	120	136	147	158	167	141	146
Rwanda	7	8	6	7	8	8	8	13	14

Source: EAC Trade Report, 2010

For diversifying the fishing subsector; fish farming could be encouraged among the fishing communities, this will assist in preserving the sea, lake and rivers resources and avoid dependency on only natural resources. Moreover, it will work as a counter measure for the depleting water resources in the region and in the world.

3.4 Food Production and Productivity

The sluggish growth in agriculture sector can also be explained by the low productivity of most of the food crops in the EAC region; table 6 present data on agricultural productivity. While table 5 presents the EAC food productivity in terms of kg per person per year by food crops, covering the period 2003 to 2007, Table 6 also compares agriculture productivity in SSA, EAC countries, developed countries and the rest of the world, crop and livestock production, per capital food production, average annual rate of growth in agriculture sector and cereals yields in kg/ha for 1995 to 2004. It is clear from table 6 that, food productivity in the EAC member countries has been too low particularly for wheat, millet and rice where on average food productivity in the region is as low as about 4, 7 and 6 kilograms per person per annum receptively, 46 and 114 kg per person for maize and cassava. The tables also show variation in major staple foods for each country; for Burundi, Rwanda and Uganda their staple foods are Banana, cassava and sorghum while Kenya and Tanzania have almost the same major staple foods, maize, cassava, sorghum and rise. Tanzania is the only country in the region whose major staple include rise. What is also noted from the data is that even these major staples the productivity is still quite low.

Table 5: EAC Food Productivity (Kg/Person for the Year 2003 – 2007)

Country	Wheat	Maize	Millet	Cassava	Beans	Rice	Main Staple foods
Burundi	1	17	1	99	31	6	Banana, cassava, sorghum
Kenya	11	79	2	14	10	1	Maize, cassava, other tubes
Rwanda	2	10	2	98	23	3	Cassava, sorghum, banana
Uganda	1	42	23	196	17	3	Banana, sorghum, millet
Tanzania	3	79	5	164	8	18	Maize, rise, cassava, sorghum
Average	**3.6**	**45.4**	**6.6**	**114.2**	**17.8**	**6.2**	

Source: FAO website (www.fao.org)

Table 6 compares crop and livestock production and per capital food crops production and the cereals yield. It is evident from the table that, the EAC region lags behind in most of the comparative indicators. In some years the annual rate of growth has been negative (See Rwanda, Tanzania, Burundi and Uganda in year 1985-2004 and Tanzania, Uganda and Burundi in 1995-2004). This negative agriculture growth rate with the positive average regional population growth implies that the deficit in food crops has to be filled by food imports that require substantial resources to finance.

Table 6: Comparison on Agriculture Production and Productivity

Crop & Livestock Production			Per capita Food Production		Cereal Yields (hg/ha)	
Average annual rate of growth (%)						
	1985-1994	1995 -2004	1985-1994	1995-2004	1992-1994	2002-2008
World	1.9	2.5	0.3	1.2	28.002	33,675
Dev. countries	-0.1	1.0	-0.7	0.6	32,087	38,038
LDC'S	3.4	3.3	1.6	1.8	25,518	28,363
Asia & Pacific	3.7	3.6	2.1	2.3	30,889	34,590
Latin America & Caribbean	2.6	3.2	0.9	1.7	24,563	30,121
SSA	3.6	2.4	0.8	-0.1	10,054	10,709
Rwanda	-2.4	7.6	-1.5	2.4	11,496	10,011
Tanzania	0.9	2.2	-2.3	-0.4	11.617	14,756
Uganda	3.1	2.8	-0.4	-0.3	15,220	16,509
Kenya	4.9	2.0	1.7	0.0	16,446	14,660
Burundi	1.7	0.6	-0.8	-0.7	13,484	13,333

(FAO. 2009): FAO State of Food and Agriculture 2005 Note: hg = hectogram and ha = hectare

3.5 Value Addition

Another indicator for agriculture development is the value addition as percentage of GDP production. Table 7 indicates that value addition as a percentage of GDP in the years 2000 to 2010 is still very low; its average has been ranging between 25.5% in Uganda and 36.4% in Rwanda, but there are up and down variations. The implication from these data is that most of crops are sold in raw state denying famers the high income associated with value addition. Value addition in the form of agro-processing creates more employment and income that is essential for poverty reduction. Hence agro-processing and value addition is instrumental for the sector if the region wants its agriculture sector to grow and contribute to poverty eradication.

Table 7: EAC Member States Agriculture Value added (% of GDP) 2000 - 2010

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
TZ	33.5	32.9	32.5	32.5	33.3	31.8	30.4	29.9	29.7	28.8	28.2	31.22
KY	32.4	31.3	29.1	29.0	28.1	27.2	26.8	20.1	21.05	22.6	19.4	26.09
UG	29.4	29.7	24.9	26.2	22.9	26.7	25.6	23.6	22.74	24.7	24.3	25.51
RWA	37.2	37.3	35.5	37.0	38.6	38.4	38.4	35.6	32.4	33.9	34.8	36.43
BU	40.4	39.5	40.5	40.1	40.1	34.9	41.7	36.6	37.8	38.5	37.9	35.24
Avearge	34.6	34.1	32.5	33.0	32.6	31.8	24.2	21.9	21.2	22.0	14.4	31.7

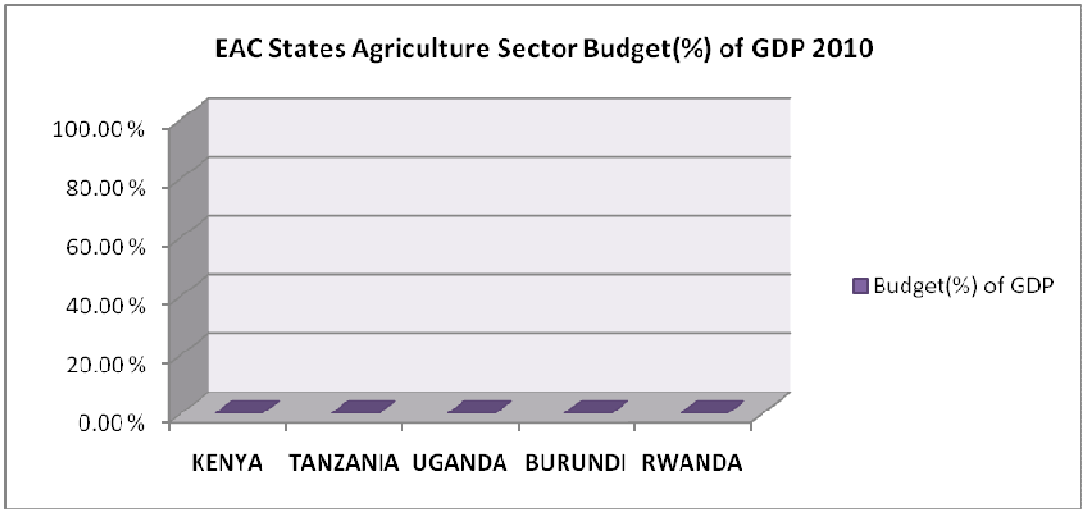
Source: FAO 2011 (www.fao.org). TZ=Tanzania, KY =Kenya, UG= Uganda =RWA = Rwanda, BU = Burundi

4.0 HOW MUCH DO EAC MEMBER STATES INVEST IN AGRICULTURE?

4.1 Budget Allocations to the Sector

The full benefit from the agriculture sector in the EAC cannot be realized unless adequate investments into the sector are provided at both national and regional levels. The stylist fact about the investments for the sector indicates that there are low investments in all the EAC countries (EAC, 2007). For instance the budget allocation for the agriculture sector as percentage of national budget in the Partner States for financial year 2009/10 were very low, with Republic of Burundi allocating only 2.4% of the total budget, Kenya at 4.2%, Rwanda at 6.2 %, Tanzania 7.2% and the Republic of Uganda at only 4.5 %. Data for local private investments that go to the sector was unavailable; however it is also said to be low as indicated by the very low financial sector loans that go to the sector, this implies that both public and private investments are substantially low in the region to push the sector to take off, hence more strategic investments are still needed. As seen in the data above all the member states budget allocation is below the Maputo Declaration and the CAADP initiative that require agriculture sector funding go up to 10% of GDP. The figure below also shows a similar picture. This low financial investment partly explains the low productivity in the sector and the food insecurity observed in the EAC region.

Figure 4: EAC Agriculture Sector Budget as a percentage of Total Budgets for 2010



Source: Budget Speeches of Respective Member EAC states in 2010

4.2 Foreign Direct Investments Directed to the Agriculture sector

Looking in all the key documents in all the EAC states, agriculture sector is recognized as a back bone of all these economies as it is a major source of income, employment and provide food for all citizens. However, the sector remains unattractive for domestic and Foreign Direct Investments (FDI), at global, regional and national levels (George, 2011). Nevertheless, profitability in energy makes bio-fuel crops such as maize attractive and provides incentives for more investments for agriculture and consequently jeopardizing food security as brings land resources competition between food crops and bio-fuel that is more profitable for investors.

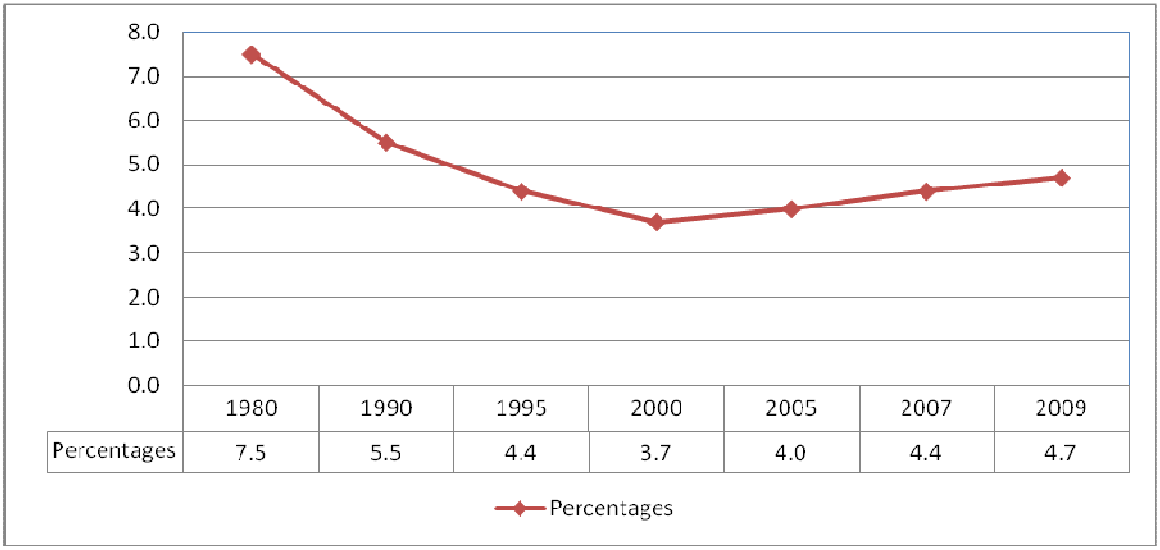
The history of foreign investment goes back to the early colonial times when European powers extended their domination to the developing countries in search for natural resources, cheap labour and markets for their products (Thomas, 1997). After the Second World War, FDI in agriculture grew slower than the other sectors while that for industries increased substantially; this trend was accelerated by government policies through various measures that favored manufacturing over primary industries that had linkages with the agriculture sector.

Moreover, after the independence most governments increased control over natural resources including land, making it difficult for foreign direct investors to be involved in agriculture sector (UNCTAD, 2009). For instance in Tanzania, after the Arusha Declaration, *all land was declared state land* and *all major means of production were nationalized* and owned by the state making it difficult for private sector and foreign investors to directly and indirectly involve in production including agriculture. As shown in the figure below this trend had affected the share of agriculture in global gloss capital formation. For instance since 1980's to 2009, the share of agriculture had remained below 10% of the total global gloss capital formation despite the importance of the sector especially in the developing countries such as the EAC.

Globally, FDI in agriculture has remained so limited (UNCTAD, 2009). For instance between 1989 to 1991, the world FDI flows in agriculture remained below 1 billion per annum and by 2005-2007, the world FDI inflow in agriculture exceeded USD$3 billion per annual yet this constituted less that 1% of total world FDI inflow (UNCTAD, 2009). In 2007 the World inward FDI stock in agriculture comprised only US$32 billion which only by 0.2% of the total world FDI stock despite the significant growth of FDI stock since 2000 particularly for developing countries(UNCTAD,2009). Historically, Africa is the most marginalized region of the world in terms of FDI inflows in all the sectors. Between 1985 and 2008 Africa's share of global FDI inflows increased by only 0.8% from 4.4% to 5.2% (UNCTAD; 2010). For Sub-Saharan Africa

(SSA) the situation is even worse; for instance from 1995 to 2000, SSA attracted only an average of US$7 billion annually.

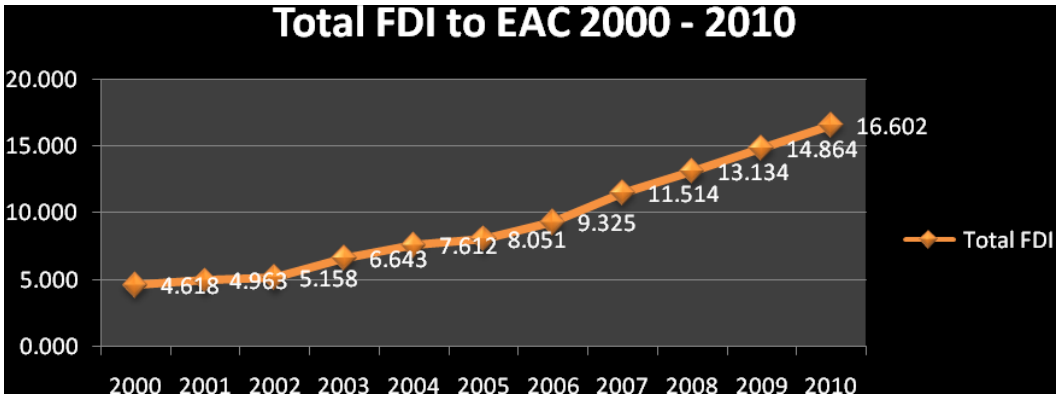
Figure 5: Agriculture share in global gross total capital formation (in %)



Source: UNCTAD, 2009

The EAC region also continues to attract less FDI compared to other regions in Africa. As shown in the figure below in 2000 it attracted only US$ 4,618 million and in 2005 almost doubled to US$ 7,612 while for 2010 the figure increased substantially to US$16,602 million. Despite of this impressive growth in FDI, the share of FDI that went to agriculture sector remained below 4% (ibid). The low FDI attraction compared to sectors such as Mining and tourism probably explain the low growth of the agriculture sector leading to foods insecurity problem in the region.

Figure 6: Foreign Direct Investment Stock in EAC for 2000-2010 (USD Current prices and exchange rate in Mill)



Source: UNCTAD STAT, 2011

With the low FDI and investments indicated above; ASARECA and IFPRI had predicted the growth in staples, livestock, cash crops and agriculture DGP growth and GDP per capita growth by 2015. Using these projections, the growth rate for staples in EAC countries is as low as 2.4 to 3.6%, 1.5% to 3.4% for cash crops, 0.8% - 5. % for livestock, 1.8- 4.2% for GDP for agriculture while the per capita GDP income was predicted to vary between the ranges of -0.1% to 1.4%.

These low growth rates implies that with business as usual current mode of investments, the sector will not change significantly hence not pushing upward the per capita income of most people in the region(see table 8).With strategic interventions in terms of more investments in extension services, irrigation, mechanization, agro-processing, market promotion, value addition among others, the sector can employ more people, create more incomes, markets, and take more people out of income and foods poverty.

Table 8: Sectoral growth rates with the Current Trend of Investments (%) by 2015

Country	Staples	Cash crops	Livestock	Agriculture GDP	GDP per capital
Burundi	2.43	2.26	0.18	1.77	-0.11
Kenya	2.4	1.15	4.91	2.39	0.04
Rwanda	3.9	3.12	4.28	3.63	0.27
Tanzania	2.94	3.39	3.45	2.97	0.78
Uganda	3.56	2.24	5.06	4.19	1.35

Source: ASARECA and IFPRI (2006)

The table below indicate the ASARECA and IPRI projection when the EAC spends at least 10% of their budgets in agriculture and attracts more than 8% of its FDI in agriculture by 2015; all subsectors such as staples, cash crops livestock will grow by an average of 5%, per capita income by more than 3.5% while the GDP will grow by an average of 6%: However, these growth rates are below the 10% projected to reduce poverty below 10% of the population implying that the region has a long journey for its people to get out of both food and income poverty. Hence new innovative interventions are needed to transform the sector; with much potential for growth as indicated below this dream is feasible.

Table 9: Sectoral growth rates with Improved Investments Strategies in the EAC (% by 2015)

Country	Staples	Cash crops	Livestock	Agriculture GDP	GDP	GDP per capital
Burundi	6.8	7.1	5.2	4.3	5.6	3.4
Kenya	5.9	5.3	9.2	6.6	6.3	3.8
Rwanda	6.7	6.1	7.4	5.4	6.4	3.0
Tanzania	5.8	6.5	6.6	5.7	6.6	3.8
Uganda	5.5	4.3	7.2	6.0	6.6	3.6

Source: ASARECA and IFPRI (2006)

5.0 AGRICULTURE POTENTIAL IN THE EAC MEMBER COUNTRIES

All the five EAC countries have high agriculture production potential for food and cash crops (ASARECA and IFPRI, 2006).This potential is defined in terms of the size of the work force, plenty of fertile arable land for agriculture, as well as availability and variability of ground water supply from lakes, ocean and rivers that could be used for irrigation (table 2 above). Despite of the available huge agriculture potential in the region, as indicated above all the countries are food insecure. As the result the EAC member states have consequently been importing a lot of the staple foods and cereals such as maize, rice, beans, wheat and sorghum (See Table 10 below). The food insufficiency problem in the region can be explained by the low productivity growth and development in the agriculture sector while other constrains among others include; market interferences, infrastructure, low value addition, mechanization, irrigation, high input values etc. The regional growth of the agriculture sector is about 4 percent which is lower than the MDG targeted growth rate of 6-7 percent necessary to half the poverty rate by 2015 as more poor people are employed in the sector.

Table 10: The Top Five Food Commodities Imports for EAC Member States in 2008 (US$ Mill)

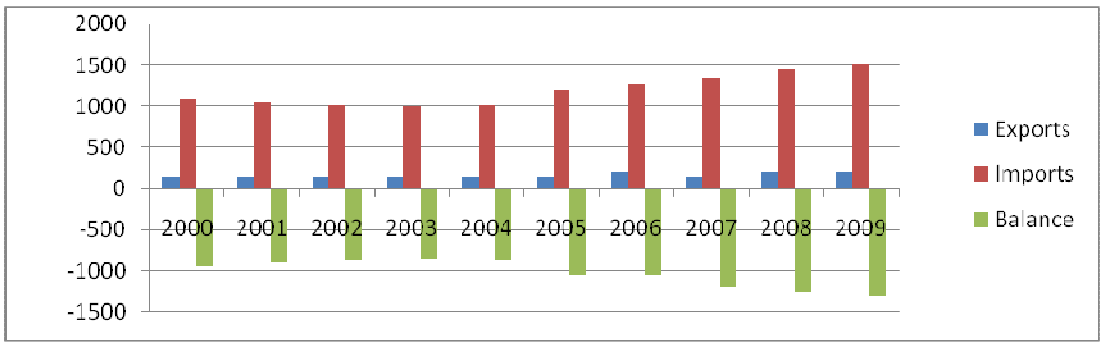
TANZANIA		KENYA		UGANDA		BURUNDI		RWANDA	
Product	**Value**	**Product**	**Value**	**Product**	**Value**	**Product**	**Value**	**Product**	**Value**
Cereals*	242.59	Cereals	239.64	Cereals	140.90	Cereals	10.60	Animal veg. oil	19.08
Palm oil	227.59	Sugar	117.60	Wheat	109.53	Sugar	6.91	Sugar	12.24
Wheat	233.50	Palm oil	313.89	Animal Fat	81.46	Wheat	12.25	Cereals	10.52
Maize	50.04	Wheat	144.78	Palm oil	66.70	Rice	7.65	Palm oil	12.52
Rice	-	Rice	70.05	Sugar	42.34	Soya Bean oil	1.73	Rice	33.73

Source: EAC Trade Report 2009

NB: Cereals* refers to small grains such as sorghum, millet, barley etc (this excludes bigger grains such as maize, rise and wheat)

The increasing foods import in the region is also shown by the negative agriculture trade balance between the EAC member states and the rest of the world (ROW) between 2000 and 2009 (figure 7). This implies that the countries are net importers of most of the foods despite the huge agriculture potential in the region; this negatively affects the balance of payments and drains their scarce foreign exchange resources.

Figure 7: Agricultural Trade Balance between the EAC with the ROW (in Million EUR)



Source: EAC Trade Report 2009

The member states are also said to be endowed with great potential for Livestock whose products such as meat and milk have higher nutrients such as proteins. For instance Tanzania has a large number of cattle and is the third country in Africa after Sudan and Ethiopia. It is projected that there are 19.1 million cattle, 13.6 goats, 3.6 sheep, 1.6 millions pigs and 56.0 million poultry, and the livestock industry contributes up to 4.7% GDP in Tanzania. However, this potential is yet to be developed. There is a need to unleash this potential to assist in food security and increase income for citizens in the region. Best practices can be learned from countries such as Botswana, South Africa and Vietnam that has transformed the livestock subsector and produce meat for exports that creates income for its people.

5.1 Potential for Agriculture Growth: Development Domains

The IFPRI-ASARECA study had indicated the potential areas for agriculture development in the Eastern and Central Africa. The agriculture potential was defined in terms of water availability, length of growing period, soil fertility and absence of pests and diseases, market access and population densities. These attributes were used to define the development domains (defined as high-H and low-L). Agriculture potential for any location (e.g. country) is a strong indicator for absolute advantage in agricultural production. However, studies have indicated that this potential needs to be supported by other factors such as market access, infrastructure, population density (IFPRI and ASARECA, 2006). Thus, these factors define the comparative advantage of the location. The agricultural development domains have been mapped to show a regional analysis of opportunities where agricultural investments may be targeted for boosting agriculture especially for food crops.

The domain analysis therefore forms one of the major inputs to a regional food security and agricultural development strategy. Agriculture potential is assumed to be high in locations where the Length of the Growing Period (LGP) is 6 months (180 days) or more and low where the period is less than 4 months (Table 11). The table below indicates that, in terms

of the length of the growing period, 84 percent of the rural population in Burundi has their length of the growing period above 8 months; while in Kenya are only 58. In Uganda 99 percent and in Tanzania only 7 percent while in Rwanda 100 percent of the rural population enjoy the length of the growing period of 8 months and above. In terms of the rural population, Rwanda has a largest population that has more growing period followed by Uganda and Burundi; however, when the length of the growing period is 6 months and above, more than 70 percent of the whole region's population and crop land seem to be located in potential agricultural areas. It is therefore apparent that when the length of growing period is considered on average the region has high agriculture potential. Only Kenya and Tanzania have little rural Population with less than 4 months for growing period. Kenya is obviously leading with 31 percent of the distributed crop land under less than 4 months of growing period (See also Maps 7).

Table 11: Distribution of Crop Land and Rural Population by Length of Growing Period (LGP) Category (in Percentage)

LGP (Months)	Burundi		Kenya		Rwanda		Tanzania		Uganda	
	Rural Pop	Crop Land	Rural Pop	Crop Land	Rural Population	Crop Land	Rural Pop	Crop Land	Rural Pop	Crop Land
<4			13	31	-	-	1	1	-	-
4 -6			18	30	-	-	28	25	-	3
6 -8	16	28	11	8	-	-	64	70	-	4
>8	84	72	58	31	100	100	7	4	99	93
Total	100	100	100	100	100	100	100	100	100	100

Source: IFPRI and ASARECA (2006)

In terms of market access, the potential is assumed to be high in location with higher possibilities of access to at least two or five types of markets and regarded as low in locations with high possibilities of access to less than two types of markets (Table 12). Population densities are also an important factor as it defines a market and the work force (human capital), hence it is key for assessing agriculture potential. The Population is assumed to be high at densities of 100 persons per square kilometer or greater and otherwise regarded as low. Domains are defined in terms of high or low (H and L) in the sequence of agriculture potential, market access and Population Density (IFPRI and ASARECA 2006). HHH denotes high agriculture potential, high market access and High population density while HHL denotes high agriculture potential, high market access and low population density.

About 50 percent of the rural population in Burundi, Rwanda and Uganda are located in areas with higher possibilities of access to less than 2 types of markets which is an indication that the potential is low (See also figure 8 and Appendix 1).

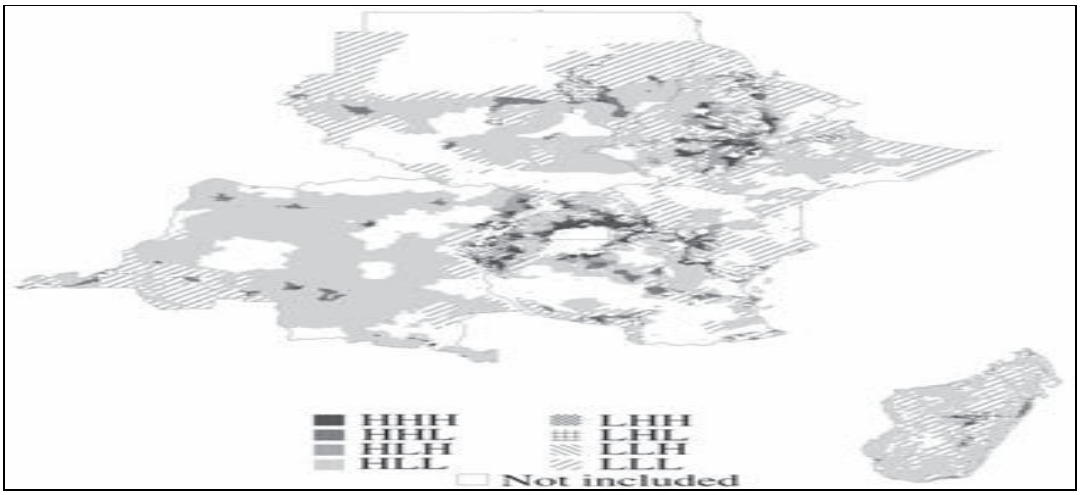
Table 12: Distribution of Crop Land and Rural Population by Market Access Zones (in Percentage)

Types of Markets	Burundi		Kenya		Rwanda		Tanzania		Uganda	
	Rural Pop	Crop Land	Rural Pop	Crop Land	Rural Pop	Crop Land	Rural Pop	Crop Land	Rural Pop	Crop Land
<2	58	49	37	17	54	47	20	15	47	32
2 -4	34	39	38	25	33	34	30	27	32	36
4 -6	8	8	19	25	7	9	22	22	13	29
6 -8	1	3	6	16	4	5	13	14	4	5

Source: IFPRI and ASARECA 2006

This figure 8 below clearly shows that the areas around Lake Victoria in Kenya, Uganda and Tanzania, and South Eastern Burundi and Rwanda are examples of HHH areas for greater commercialization and diversification options for agriculture commodities such as food and cash crops. Likewise, some low lands in South Eastern Kenya, Tanzania, Western Uganda, Rwanda and Burundi are examples of LLL areas due to little comparative advantage in intensive agriculture production and high level of input use.

Figure 8: Agriculture Development Domain and Potential Production



Source: IFPRI and ASRECA (2006)

Note: H and L refer to agriculture potential, market access and population density in their order. These are key characteristics for each development domain

Table 13 presents distribution of population, lands and cattle by EAC agriculture development domain. Note that, there are a total of 8 development domains defined by three factors (agriculture potential, market access, and population density). Each take one of the two characteristics i.e. H = high and L = low. While 17.2 percent of the regional population are located in the areas with High Agricultural Potential (HAP); High Market Access (HMA); and High Population Density (HPD), only 14.2 percent and 1.9 percent of the rural population and land area respectively is located in the areas with high agricultural

potential (HAP); High Market Access (HMA); and High Population Density (HPD). The percentage of crop area, pasture area and cattle distribution in areas with High Agricultural Potential (HAP); High Market Access (HMA); and High Population Density (HPD) are respectively given as 7.2, 2.6 and 7.1. Note that, the corresponding Proportions for the Low Agricultural Potential (LAP); Low Market Access (LMA); And Low population density (LPD) are 12.6 (population); 15.1 (rural population); 20.7 (land area); 15.6 (crop area); 14.7 (pasture area); and 19.2 (cattle distribution).

Table 13: Distribution of Population, Lands and Cattle by EAC Agriculture Development Domain

Domain	% of Population	Rural Population	Land area (%) (Hectares)	Crop area (Hectares)	Pasture Area (Hectares)	Cattle (herd)
HHH	17.2	14.2	1.9	7.2	2.6	7.1
HHL	6.2	4.7	2.5	3.9	3.3	4.8
HLH	12.9	15.4	2.6	8.9	3.3	10.3
HLL	23.9	28.2	18.0	38.6	39.2	35.5
LHH	10.1	7.0	0.8	2.8	1.1	2.9
LHL	4.0	2.8	1.3	2.0	1.9	2.8
LLH	5.4	6.4	1.0	3.4	1.4	3.8
LLL	12.6	15.1	20.7	15.5	24.7	19.2
Not included	7.7	6.3	31.4	17.7	22.5	13.6

Source: IFPRI and ASARECA (2006)

The agriculture development domains can be used as a base for regional specialization for food production and other economic activities. The categories are based on agriculture potential, market access and population density that determines the market. The table also suggests that there are potentials area for growing food production in East Africa and the diversification options available such as commercial agriculture, irrigation, fishing and fish farming and livestock keeping areas. These potentials when well utilized, the sector can grow faster and increase income of our small scale farmers.

6.0 THE FOODS SECURITY AND POVERTY REDUCTION DILEMMA IN TANZANIA

Comparing to other EAC member states, Tanzania has great potential of accelerating growth of output in the agricultural sector, considering its diverse climatic zones with potential for many crops, livestock and forestry products. It has more arable land than any of it neighbors, sufficient water for both irrigation and livestock keeping as presented by vast opportunities in terms of rivers, lakes and largest sea water for fishing. Since agriculture employs large proportion of poor people and the country is endowed with all these resources, it has a big potential of lifting many of people out of poverty than any country in the EAC region. Despite these potentials, the performance of the agricultural sector has had only modest contribution to economic growth and poverty reduction. The growth rate of agricultural sector is relatively low compared to other sectors such as mining, tourism, communication and transport and industry. Over the past 10 years, the sector has been growing at the average rate of about 4 percent, while services and industry have been growing by more than 6 percent and the sectors contribution to GDP has been declining from almost 30% in 2000 to 23% in 2010. However, this decline does not mean that the sector is becoming less important but the economy is becoming more diversified now than in the past. The sectors still contributes substantially in terms of direct and indirect employment, income and provide food for its workforce.

Understanding the importance of increased food security and incomes for poverty reduction, the government set food security and income growth as key objectives in the current Poverty Reduction Strategy (PRS) with it popular acronym known as MKUKUTA II. In 2009 the government in collaboration with the private sector instituted the green revolution initiative know as KILIMO KWANZA (agriculture first) whose aim was to revolutionalize the sector so as to attain both objectives among others. However, there were many attempts in the past that failed. Given the current situation of low productivity and other constrains such as lack of storage facilities, low value addition, higher inputs prices and others , the two objectives seem to compete and cannot be attained at the same time leading to the trade off that lead to the dilemma of choice by the government of Tanzania.

This trade off and dilemma forces the government to make a decision in favour for food security option at the expense of causing low farmers' income. Surprisingly this option in favour for food security objectives that restrict famers markets by closing border trade does not attain any of the two objectives as incidence of food and income poverty is still high (18.4% and 37.6%) especially in rural areas where agriculture is predominant (seen in the table below); hence a new approach is still wanted. The table below shows the incidence of poverty in Tanzania Mainland using the headcount poverty index; the picture from the

Tanzanian poverty statics is that poverty in most cases is a rural phenomenon and in most cases an agrarian issue; hence agriculture development could provide a remedy to this challenge.

Table 14: Incidence of Poverty in Tanzania Mainland: The Headcount Poverty Index

Incidence of Poverty		Dar-es-Salaam	Other Urban Areas	Rural Areas	Mainland Tanzania
Type of poverty	Year				
Food Poverty	2000/01	7.5	13.2	20.4	18.7
	2007/08	7.4	12.9	18.4	16.6
Basic Needs Poverty	2000/01	17.6	25.8	38.7	35.7
	2007/08	16.4	24.1	37.6	33.6

Source: URT (2009)

In Tanzania maize is regarded as major staple foods whose supply shortage means that the country is foods insecure. Other staple foods include cereals such as beans, rice, wheat, millet and sorghum. Hence maize is major strategic food item and is highly regulated and protected by the government by fixing export bans in most years. Although agricultural products markets is theoretically liberalized, maize imports and exports are subject to licensing and exporters or importers have to apply for export permit which is subject to many bureaucratic procedures that practically limit food crops exports for foods security reason hence denying famers income had the export market was fully liberalized famers and investors would gain by accessing the big market in the region and higher prices.

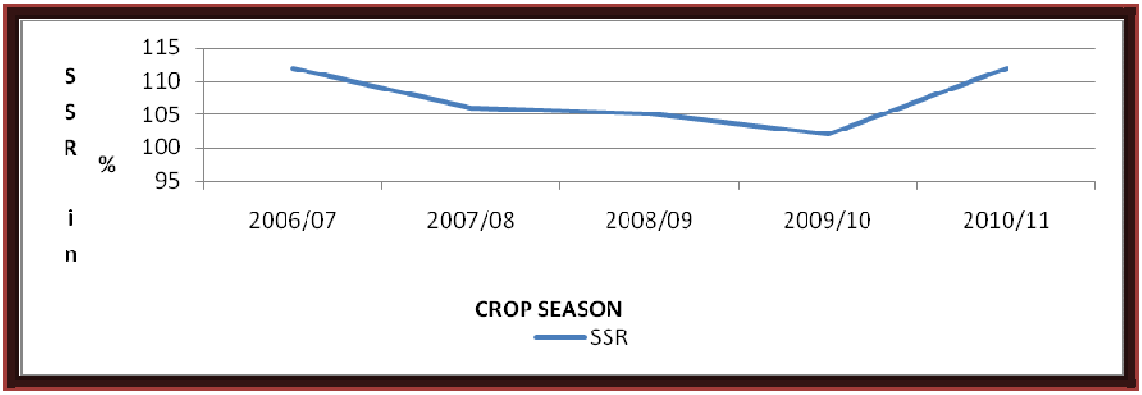
Apart from foods security reasons export bans are sometime fixed politically by Ministers or Regional and District Commissioners and at times the Ministers lifts the ban while the Regional or District Commissioners retains it, surprising this sometimes done when the country has foods surplus stock with no market to dispose. A good example is in 2011 when Tanzania had plenty of Maize stocks while its neighbor Kenya and the Horn of Africa had no enough stock. Opening up for the export market would help farmers and investors get higher prices that would earn higher income. However, the arguments put forward to defend this decision is that most small scale famers are net buyers of food items hence with full liberalization the cost will outweigh the benefit. This argument however, is highly contested as the low production and investments in the sector are attributed to high market regulations by the government; it also sends wrong price signals to farmers and investors in the sector.

Within the policy environment, the responsible Minister for agriculture has been granted the authority to fix export and import ban when there is a threat for foods insecurity in the country for a period of 3 months. However, in practice once the ban has been fixed it exists

for more the time allowed and sometimes conflicting statements occur where the Minister lifts the ban while the Regional or District Commissioners prohibits export for maize outside the country; hence conflicts of orders within the same government. These export bans are said to reduce the export demand and sending wrong signals to farmers, traders and investors within the value chain. Moreover, this practice is said to negatively affect the small scale famers who in most cases are poor and would like to sell the product at the reasonable prices and get higher returns in terms of income from their maize and probably get out of income poverty by investing the money they get in other economic activities. This exercise is also said to encourage illegal maize exports to neighboring countries using unofficial routes and denies the government income and information for foods exports (FAO &EAGC, 2009).

As export bans are exercised for foods security reasons among others and the government assumes that the country has low production of food crops, absence of storage facilities causing high post harvest losses approximated at 40% and lack reliable information for determining the actual food supply(food balance sheet) within the country. This practice denies famers a market arising from high foods demand from other countries especially from other EAC member states. This is done despite the country's high foods self sufficiency ration of more than 100% for many years (see the figure below). For instance year 2011 Tanzania had plenty of maize stock while its neighbors Kenya and the horn of Africa had maize shortages but Tanzania protected its foods by closing borders to restrict for maize exports. Before the ban many traders from Kenya and DRC were buying maize in the southern regions (Mbeya, Ruvuma and Rukwa) for Tsh 500 per kg, then came June 2011, the Tanzania government fixed a ban leading to the decline in price of maize from Tsh.500 to 220 per Kg. As the domestic market is not sufficient to absorb all maize stock in the country, with export restriction farmers, traders and those invested in the sector remain with small or no market and consequently fetch a lower price for their maize and lower returns for their investments.

Figure 9: Food Self Sufficiency Ratio (SSR) in Tanzania: 2006/07 – 2010/11



Source: URT, 2010

This market interference does not solve any of the two problems i.e. food security and poverty reduction through income growth as the market forces are interfered and both objectives are not reached. The export ban is done for foods security reasons so that the country has enough food as stated in the PRS; while this done it conflicts with the income growth objective; as export ban denies farmers a market and good returns for their agriculture production, hence the two objectives are in conflict hence a dilemma. The dilemma is that, given the current situation in the country to attain foods security objective the government is forced to ban export for maize; by doing so farmers lack markets, good prices and returns had the market was fully liberalized and for income growth requires opening up for the markets that jeopardize food security as more foods will go out the country hence both cannot attained at the current state.

6.1 Is Market Liberalization of Food Crops a Solution?

To unlock agriculture development challenges and the above Tanzanian government dilemma, the Feasibility study for common market for foods security by the Kilimo trust in 2010 had indicated that the EAC member states have a greater potential for producing enough food crops including maize and other cereals and suggested that the EAC states need to buy enough food and store and allow food items be traded freely within the region (market liberalization). Liberalization will correct prices signals, investments in the sector and returns and finally productivity, incomes and poverty alleviation in the agrarian sector.

Other measures include providing enough storage facilities, transport infrastructure, extension services, promoting agro-processing, mechanization, contract farming and promotion for linkages along the value chain need to be in place. Although all the EAC member states concurred with this liberalization suggestion, its implementation is still a challenge leading to the Tanzanian policy dilemma shown above. Such policy decision that go against the interest of the farmers leads to sector and institutional failures and undermine the productivity of the farmers and contribute to food insecurity in Africa (Cheru, 2002:94-95).The low prices caused by the government interferences as the case of Tanzania fuel the downward spiral in agriculture outputs as farmers and those who would like to invest in the sector switch to other more lucrative activities in other sectors (ACBF, 2011).

Hauoas, Yagoubi and Heshmati (2003) did describe the effects of trade liberalization and possible assumptions for a developing the economy. Their study found that with perfect competitive market, production/supply is directly related to price; production for exportables will increase as indicated an increase in its relative price to non tradables while the long-run effects of a fall in the relative price of importable due to liberalization are in line with the prediction of Stoper-Samuelson documented by Haouas et al (2003). However, the production for importable will decrease due to decrease in the relative price of

importable to exportable. Thus, farmers will maximize their profit by producing more of the exportable (e.g. maize). This is summarized below in table 15:

Table 15: Possible effects of trade liberalization on production

Sector	Short run production	Long run production
Exportable	Increasing	Increasing
Importable	Decreasing	Decreasing
Non tradable	Ambiguous	Increasing

Source: Hauoas, Yagoubi and Heshmati (2003)

The effects of trade liberalization have been categorized into short and long run effects. The short and long run effects with respect to production sector lead to increase in exportable(e.g. maize crop and decrease in importable. With respect to non tradable, there are ambiguous effects in the short run, and increase in the production of non tradable in the long run. Applying the above model we see that the short and long run effects for the crops that will be produced for food and exports when markets are fully liberalized is that production and prices rises from the current level and farmers and those invested in the sector will get a higher return that may assist them to get out of poverty.

7.0 CONCLUSION AND RECOMMENDATION

This paper has looked at the level of development of the agriculture sector, foods security concerns in the EAC region, factors undermining the agricultural growth and development and policy implementation challenges leading to the dilemma of policy choices as the Tanzania case study shows. What is clear from the paper is that, there is a big potential for agriculture growth in EAC region. Despite of this potential, almost 50 years after independency of most of the EAC member states the region is still food insecure and experience low sectors growth accompanied by high poverty rate especially in the agrarian sector. The clear argument is that agriculture development when realized can assist most of agrarian people to get out of poverty by providing the employment, income, food and sources for livelihood. There are recent examples of countries that have invested more and transformed their agriculture sector such as Vietnam, China, Brazil and India where the sector contributes more in poverty reduction.

Regional Private and public sector investments and FDI attraction were noted to be comparatively low in the sector leading to low productivity that finally leads to scant growth of the sector and weak linkages with other sectors. This is happened amid member states committing themselves to many regional and international agreements that they will allocate more resources and their markets liberalization. However, the region finds itself in the midst of too much market interferences and regulations that is manifested by the foods security and poverty reduction dilemma shown in the Tanzania case. This is only one example of many conflicting policy implementation inconsistencies by policy makers in the region; these practices deny farmers, middlemen and investors in the sector the returns they would have gotten had the market been fully liberalized, these restrictive measures condemn poor farmers to income and food poverty. Notwithstanding the fact that at the moment most small scale poor farmers believed to be the net buyers for food crops, experience from the market indicate that carefully liberalized market benefit all economic agent along the agricultural value chain where small scale farmers would slowly get out of income poverty.

The key augment we are trying to make in this paper is that, much as the EAC member states have committed themselves to regional agreements on trade liberalization through EAC Custom Union, Common markets and other ratified treaties such as the foods security action plan, common strategy for foods security. The starting point to solve the agriculture development and foods security challenges is to allow the market forces to work with very minimal prudential interventions so that poor famers, investors get their returns from investments in the sector, this will create incentives for more players to involve in this sector that is currently regarded as a very risk sector due to many government interventions

while other risks such as climate change, natural disasters such floods, drought are managed in the optimal way.

The public sector should invest more in the sector by allocating more financial resources as agreed in the Maputo declaration and CADP initiatives, more human capital such as extension officers, graduates for agriculture and the private sector should be encouraged to invest in the sector while governments creating the best investment climate that promote the market rather undermine it by fixing export ban as the Tanzanian case.

The African Capacity Indicators report produced by the ACBF for 2011 was dedicated for agriculture development for transformation and Food security (ACBF, 2011). The report indicates that many countries in Africa (52.4%) have low capacity to transform the sector for development and poverty reduction (see also appendix 2). As indicated in many of the indicators above the capacity constrains were noted in the areas of infrastructure, weak investment climate, information system, policy inconsistence that interfere with market forces, extension services, value chain promotion, financing, leadership and governance, value addition, inputs etc. There is a need to build a political will to find optimal solution for these challenges. The report also indicates that the regional level of organization for CADP implementation, land management, R&D, training, productivity is still low and worse enough even the quality of current agriculture strategy is very low for countries such as Burundi and Tanzania and high for Kenya and Rwanda and medium for Uganda. This implies that we have a long journey in implementing what the countries had agreed (see appendix 2 below).

Our argument in this paper is that with political will and good leadership all the above mentioned challenges can be solved in the short and long run horizon. Political will is key because most of the decision for resources allocation and policy implementation lies in the hands of politicians who make key decision hence their will is very instrument for the development and growth of this sector. However, there is a need to empower the farmers who are poor in most cases to demand changes that will build this political will needed to the transform and development of this sector.

REFERENCES

African Capacity Building Foundation -ACBF- (2011): African Capacity Indicators: Capacity Development for agriculture Transformation and Food security. African Capacity Building Foundation, Harare Zimbabwe

Bates, R (1981): Markets and States in Africa: The political basis of Agriculture Polities. Berkeley: University of California Press

Bates, R (1988): Governments and Agriculture Markets in Africa; in Robert Bates (editor), Towards a Political Economy of Development, Berkeley: University of California Press. Pp 331-358

Cheru , F (2002): African Renaissance: Roadmaps to the challenges of Globalization, London: Zed Books.

EAC (2007&2008): Trade Report 2007,2008. EAC Secretariat, Arusha, Tanzania

EAC (2010): Food Security Action Plan (2010 – 2030). EAC Secretariat, Arusha, Tanzania

EAC (2005): Agriculture and Rural Development Policy (EAC-ARDP) 2005. EAC Secretariat, Arusha, Tanzania

EAC (2010): Common Strategy For Food Security (EAC-CSFS) 2010: EAC Secretariat, Arusha, Tanzania

EAC Agriculture and Rural Development Strategy: EAC Secretariat, Arusha, Tanzania

EAC website (www.eac.int)

EAC Mechanism for the Elimination of Non-Tariff Barriers 2006: EAC Secretariat, Arusha, Tanzania.

FAO&EAGC (2009): Food and Agriculture organization (FAO) and The Eastern African Grain Council (EAGC): The case of Maize (Paper A): AACP Paper Series No.9

FAO 2008, 2009 and 2011: State of food security in the World
Food and Agriculture Organization website (www.fao.org)

The Eastern African Community Trade Report (2006, 2007&2008): East African community Secretariat, Arusha, Tanzania.

Thomas (1997): Investments Incentives and International agenda. Blackwell Publishers Ltd 1997,108 Cowley Road Oxford OXY IJF UK, and 350 Main street.MA 02128 USA

Haouas, I., M. Yagoubib and A. Heshmati (2003): The impact of Trade liberalization on Employment and Wage in Tunisian Industries. *Discussion Paper Series* Forschungsinstitut Zur Zukunft der Arbeit Institute for the Study of Labour .

IFPRI and ASARECA (2006): Strategic Priorities for Agriculture Development in Eastern and Central Africa; Research Report No.150

IFPRI (2011): Global Hunger Index for 2011: The Challenge of hunger; Taming Prices Spikes and Excessive foods Prices.

IFAD (International Food and Agriculture Development) website (www.ifad.org)

IFPRI (International Food Policy Research Institute) website (www.ifpri.org)

RATIN (Regional Agriculture Trade Intelligence Network): Monthly Bulletin 2003 -2005

RATIN (Regional Agriculture Trade Intelligence Network) website (www.ratin .net)

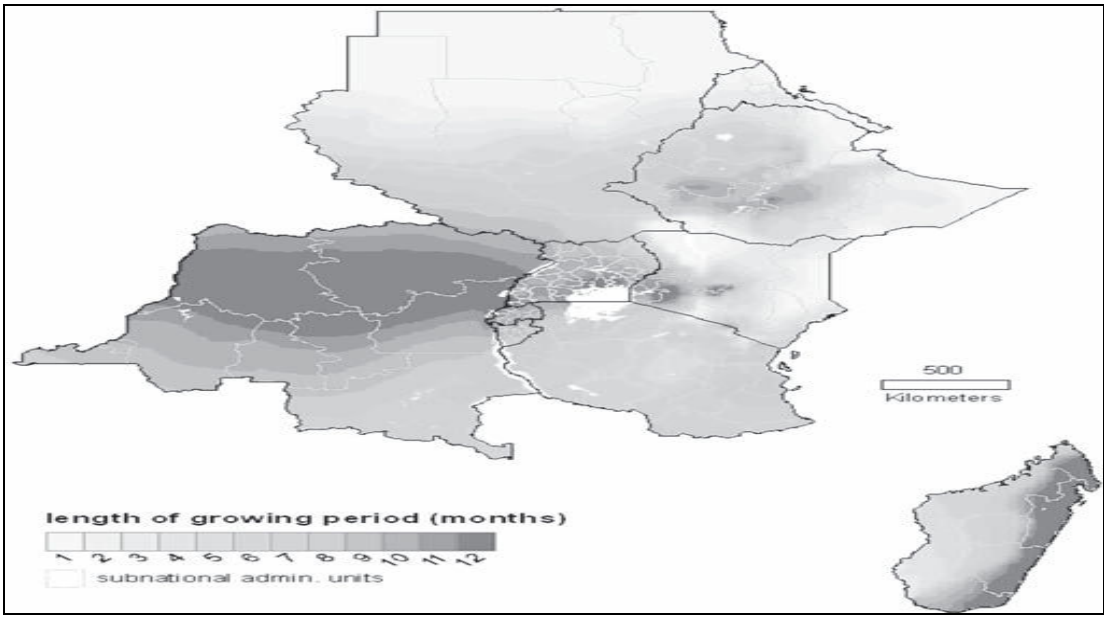
UNCTAD (2009): World Investments Report 2009,Transnational Corporations, Agriculture Production and Development, Geneva, United Nations.

UNCTAD (2010): World Investments Report 2010, investing in low-Carbon Economy, Geneva, United Nations.

URT (2009): Poverty and Human Development Report for 2009:

George William (2011): Determinants and Impact of Foreign Direct investments Inflows on agriculture sector: The Case of Tanzania, MIT University of Dar es Salaam ,Tanzania

Appendix 1: Agriculture Potential: Length of Growing Period



Appendix 2: Assessment of the Level of the Implementation of the Strategy for Agriculture and Transformation in the EAC region

Country	In agriculture productivity	In training	In R&D	In Rural Infrastructure and Marketing	In water Management	In land Management	Level for organization for implementation of CAADP	Overall quality of the current agriculture strategy
Burundi	Low	Low	Low	Very Low	Low	Low	Medium	**Very Low**
Kenya	High	Medium	High	High	Medium	Medium	High	**High**
Rwanda	Very High	High	Very High	High	High	High	Medium	**High**
Tanzania	Very low	Very low	Very Low	Very Low	Very low	Very Low	Very Low	**Very Low**
Uganda	Low	Low	Medium	Low	Low	Low	Medium	**Medium**

Source: ACBF, 2011