East African Community

REGIONAL AGRICULTURAL INVESTMENT PLAN (RAIP)

2018 ~ 2025

APPROVED BY THE 38TH EXTRA-ORDINARY COUNCIL OF MINISTERS HELD IN JANUARY 2019

Executive Summary

Introduction

The EAC Partner States still suffer from challenges related to food and nutrition security and poverty despite the implementation of National Agriculture Implementation Plans which sought to actualize the objectives of the CAADP Compact between 2008 and 2016. This East African Community Regional Agriculture Investment Plan (EAC RAIP) 2017-2025 proposes key interventions required for the implementation of the EAC CAADP Compact and the EAC Food Security Action Plan I[1]. The EAC RAIP draws from the commitment made to transform regional economy (Chapter 18, Article 105 to Article 110 of the EAC Treaty). The Compact is a statement by the EAC for actualization of the CAADP goals as enunciated in the Maputo Declaration, 2003 and affirmation and recommitment given in the Malabo Declaration, 2014. The EAC RAIP fosters a regional approach and is an instrument for coordinating, rather than undertaking and/or duplicating, investments in the EAC Partner States as envisaged in their NAIPS.

Agriculture is the mainstay of the economies of all the EAC Partner States. It contributes on average 27 percent of the gross domestic product (GDP) in the EAC and is the main economic activity for more than 70 percent of the total population of the region. Due to its backward and forward linkages, investments in the sector have high multiplier effects particularly in terms of employment creation and food and nutrition security. Consequently, impacts on the sector are easily passed on to the entire economy. The economic growth in the EAC Partner States was encouraging between 2008 and 2015 with agriculture showing signs of recovery after the 2008 global food price crisis. However, the contribution of agriculture towards economic growth in real terms declined from 28 to 23 percent over the same period. There is need for fundamental policy commitment to the region's agriculture in order for the sector to contribute effectively to broad-based growth needed for poverty eradication and enhancement of regional food and nutrition security.

Common challenges in EAC agriculture sectors

The common problems facing agriculture in all the EAC Partner States are: low crop and livestock productivities (include numbers here) that are far below what is achievable in research stations and by other comparator countries; high post-harvest losses (include numbers! 30%?); minimal value addition (current estimated value addition); and poor natural resource management which exacerbates vulnerability to climatic change related risks. These problems are a manifestation of a number of inherent constraints: low expenditure on research and development (put numbers); poor infrastructure; low use of improved technologies and irrigation; inappropriate policies (that directly or indirectly tax the agriculture sector); capacity weaknesses in agricultural institutions; and, poor coordination of responses to emerging issues and emergencies.

There are on-going interventions that aim at addressing the above problems and constraints in EAC such as…, a number of them anchored in the Maputo Declaration (2003), the Malabo Declaration

[1] The Food Security Action Plan I covered the period 2011-2016; the Food and Nutrition Security Action Plan for the period 2018-2022 is in draft form.

(2014) and regional integration protocols aiming at deepening intraregional trade. All the EAC Partner States are at different stages of implementation of their CAADP compliant national agricultural investment plans (NAIPs) as well as increasing investments for institutional capacity strengthening and achievement of national food and nutrition security. Invariably, national agricultural policy initiatives lead to intra-regional trade restrictions and conflicts. The EAC RAIP aims essentially at addressing these conflicts by providing a regional perspective to agricultural investment and promoting effective partnerships and policy harmonization in order to maximize synergies and sustainable growth of the sector.

Objectives of the RAIP and its formulation process

In line with the EAC CAADP Compact and Result Framework, the specific objectives of this RAIP are to:

i) Give a brief review highlighting the performance of the agriculture sector in EAC, in particular, showing the status of: progress towards achievement of CAADP goals; the National Agriculture Investment Plans (NAIPs); agricultural production, input utilization and productivity trends; value addition; intraregional trade; food and nutrition security; institutional capacities and roles; and, on-going policy reforms and interventions that aim at increasing agricultural productivity and trade;
ii) Identify challenges that hinder sustainable agricultural transformation in the EAC region;
iii) Identify, prioritize and formulate strategic interventions that would catalyze sustained agricultural transformation in the region, focusing on thematic areas highlighted in the EAC CAADP Compact; and
iv) Undertake costing of the strategic interventions and propose mechanisms for implementing the RAIP: this involves identification of opportunities for resource mobilization and recommending an implementation framework for operationalizing the RAIP.

The EAC agriculture is highly dependent on rainfall; this in turn influences productivity, market supply and growth of the agro-processing sub-sectors. The sector has hitherto been resilient but has recently come under intense pressure from emerging trends such as globalization, high rates of population growth and climate change. However, there is a positive outlook: increasing per capita incomes, urbanization, large-scale retail outlets (supermarkets) and cross-border markets offer opportunities for agricultural growth that augur well particularly for scaling up production, value addition and deepening of intra-regional trade.

The EAC RAIP targets particular clusters of agricultural commodities and factors of production based on their inherent growth potential and opportunities for deepening intra-regional trade and competitiveness in the global markets. The clusters considered are: i) food security related crops (cereals, pulses and roots and tubers); ii) industrial/commercial crops; iii) livestock and livestock products, fisheries and apiculture; iv) horticulture; and, v) factors of production (mainly seeds, planting materials, pesticides and fertilizer). These clusters offer investment opportunities that can be unlocked through policy coordination and harmonization at the regional level and by creating partnerships to eliminate common challenges.

The formulation of this RAIP followed a consultative process with validation workshops in all the EAC Partner States (with the exception of South Sudan). The first stage after completing the first draft RAIP report engaged representatives of EAC CAADP Focal Points during which time lines for country validation workshops and provision of additional data and documents (that had not been availed to the consultants) were agreed upon.

Specialists from civil society organizations and technical experts in agriculture, livestock, fisheries, and food and nutrition security were invited to validation workshops. The revised draft was reviewed by

experts drawn from Partner States, International Livestock Research Institute (ILRI), Regional Strategic Analysis and Knowledge Support Systems (ReSAKSS) and representatives of Agriculture and Food Security Sector of the EAC Secretariat. The consultants presented the final draft report to EAC for internal validation and ownership prior to a planned regional validation.

EAC RAIP investment priorities

In order to achieve the objectives of CAADP Compact by 2025, the priority investments that will guide EAC RAIP were identified taking cognizance of the challenges and ongoing efforts to address the challenges of food and nutrition and poverty prevalent in EAC Partner States. As such, this EAC RAIP sought to catalyze the realization of the CAADP goals in the following five investment thematic areas:

- Regional food supply
- Food utilization
- Value addition
- Building capacity for sustainable natural resource management
- Strengthening capacities for regional agricultural value chain and institutions

The successful implementation of the RAIP requires a strong coordination capacity at the EAC Secretariat. The RAIP therefore seeks to strengthen the capacity for coordination and harmonization of resource mobilization, identification of investment opportunities and activities along the identified thematic areas at regional and Partner States levels. The budgetary implications of implementing the investment plan are summarized in the table below.

INVESTMENT THEMATIC AREA	COST (000' USD)
1. Increasing regional food supply	359,965
2. Enhancing food utilization	6,450
3. Promote Value addition	12,145
4. Build capacity for sustainable natural resource management	2,920
5. Strengthen capacities of regional agricultural institutions and key stakeholders	152,415
6. Organise joint RAIP Investment and Business Fora	----------
6. Monitoring and Evaluation	6,140
Total Implementation/Coordination Cost (5 years)	**540,035**

Resource mobilization and financing for RAIP implementation

Although EAC agriculture faces a number of internal and external challenges, the prospects for increased investments in the sector are quite favorable. This is mainly due to: increasing regional integration and urbanization which have led to expansion of market outlets and shifts in food consumption patterns; revival of abandoned value chains, especially the fiber value chains; deepened

access to ICT services; increased public sector awareness of the role infrastructure; and, expansion of food and nutrition security funding by governments and development partners.

The onus of financing the EAC RAIP falls squarely on the Partner States. The EAC Secretariat will shoulder the responsibility of coordinating the investment initiatives as well as proposing policy and institutional reforms that are necessary for ensuring that the EAC RAIP is consistent and value-adding to the respective NAIPs. **Whereas the financing of the Secretariat's coordination activities (shown in the above table) will be relatively modest**, **it has to be reiterated that actual investments in the prioritized thematic areas of the RAIP (and where commodity specific opportunities exist) will be taking place at the domestic levels of Partner States**. Here, one need also to remember that Investment is market driven, thus, EAC cannot substitute itself to partner states on this front. However, within its mandate, the Secretariat is requested to offer support to Partner States in terms of resource mobilization by conducting joint RAIP Investment and Business fora. The following funding options, among others, should be explored: i) Public resources; ii) Sovereign wealth funds; iii) African Development Bank non-sovereign investment; iv) The African Agribusiness and Agro-Industries Initiative (3ADI); vi) Donor funding; and vii) Private equity finance.

Implementation framework and monitoring and evaluation (M&E)

The EAC Secretariat will commission and coordinate systematic collection, collation and analysis of data required for the M&E as well as updating of key stakeholders about progress in terms of relevance, efficiency, effectiveness, impact and sustainability. The envisaged Regional Peer Review Mechanism will be instrumental in anchoring the necessary political buy-in across the Partner States.

Regional Agricultural Status Survey (RASS) will be carried out at the beginning of the plan to provide the necessary baseline data. During the fourth year, a mid-term review (MTR) will be conducted to assess the progress made in the implementation. This review is envisaged to inform the Regional Peer Review exercise scheduled at the end of the fifth year.

Success in the implementation of the RAIP will depend on a robust institutional framework. In accordance with the EAC Treaty and the AFSC directive, such a framework has been conceptualized as the Regional Multi-Stakeholder Technical Working Group (RMSTWG) on CAADP implementation constituted in accordance with the EAC CAADP Compact Development and implementation roadmap. The RMSTWG, working with the Secretariat and its Directorate of Productive Sectors, shall be responsible to the Sectoral Council on Agriculture and Food Security to which it shall report implementation progress and seek guidance. The Sectoral Council shall provide oversight for the RAIP implementation, while reporting to, and obtaining support and guidance from, the Council of Ministers.

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Abbreviations and Acronyms

AfDB	African Development Bank
ASAL	Arid and Semi-Arid Lands
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
AU	African Union
CAADP	Comprehensive African Agriculture Development Program
CGIAR	Collaborative Group for International Agricultural Research
COMESA	Common Market for Eastern and Southern Africa (COMESA)
EAC/CU	East African Community/Customs Union
EAGC	East African Grain Council
ECA	Eastern and Central Africa
ECTAD	Emergency Centre for Trans-boundary Animal Diseases
EU	European Union
FAO	Food and Agriculture Organization
FTA	Free Trade Area
GDP	Gross Domestic Product
GHI	Global Hunger Index
HDI	Human Development Index
IBAR	Inter-African Bureau for Animal Resources
LLPs	Livestock and Livestock Products
NAFSIP	National Agriculture and Food Security Investment Plan
NAIP	National Agriculture Investment Plan
NEPAD	New Economic Partnership for African Development
NTBs	Non-Tariff Barriers
R&D	Research and Development
RAIP	Regional Agriculture Investment Plan
RECs	Regional Economic Cooperation
ReSAKSS	Regional Strategic Analysis and Knowledge Support System
SAKSS	Strategic Analysis and Knowledge Support System
SADC	Southern Africa Development Cooperation
SAPs	Structural Adjustment Programs
SPS	Sanitary and Phytosanitary Standards
SWOT	Strengths, Weaknesses, Opportunities and Threats
TBT	Technical Barriers to Trade
USAID	United States Agency for International Development
WHO	World Health Organization
WTO	World Trade Organization
EAFF	Eastern Africa Farmers Federation

CHAPTER 1: BACKGROUND

1.1 Introduction

The East Africa Community (EAC) has made a commitment to transform the economy of the region (EAC Treaty, Chapter 18 Article 105-110). The Treaty gives the parameters for agricultural cooperation among the Partner States and, *inter alia*, outlines the necessary policy measures and programs that would efficiently support the achievements of the cooperation goals. To this end, the Partner States undertake to adopt a scheme for the rationalization of agricultural production with a view to promoting complementarity and specialization in, and the sustainability of, national agricultural programs. As a first step towards this, the Community has developed its framework for deepening achievement of the Comprehensive African Agricultural Development Program (CAADP) goals.

The Maputo Declaration set to reverse decades of underinvestment in the agricultural sector by recommending an allocation of at least 10 percent of national budgets to the sector[2]. This was envisaged to facilitate achievement of 6 percent annual growth sustained for at least 10 years to 2015. The CAADP program, which was the framework for implementing the Maputo Declaration, identified four complementary pillars[3] to enable critical income growth and wealth creation sufficient to have a significant impact on poverty alleviation.

In response to the Maputo Declaration, the EAC Partner States aligned their medium term strategic plans for agricultural development to the CAADP framework and subsequently developed their National Agricultural Investment Plans (NAIPs), National CAADP Compacts and National Agriculture and Food Security Investment Plans (NAFSIPs) as a means of domesticating the CAADP. The development of CAADP Compacts and the NAIPs have progressed satisfactorily albeit slowly as can be seen from Table 1. The slow domestication of the CAADP program in the EAC Partner States partly explains the failure of the region's agriculture sector to achieve the growth rates that were anticipated under CAADP.

The Malabo Declaration (2014) acknowledges the challenges faced in the implementation of previous decisions and declarations and, in particular, the progress made in attaining the minimum targets of public investment in agriculture[4]. Under the Malabo Declaration, African leaders recommitted themselves to the goals and principles of the CAADP which recognized the importance of agriculture as the engine of Africa's broad based growth. The leaders went further and defined broader and more transformative agenda with commitments to expansion of trade, employment, youth, gender, nutrition and resilience of the production

2 The agriculture sector broadly comprises crops, livestock and fisheries production as well as management of natural resources (water, land and forestry), supportive industries (agro-processing, marketing, trade and transport) and agricultural institutions (R&D and extension, finance/insurance, policy and regulation)

[3] Pillar 1: Extending the area under sustainable land management and reliable water control systems; Pillar 2: Improving rural infrastructure and trade-related capacities for market access; Pillar 3: Increasing food supply, reducing hunger, and improving responses to food emergency crises; and Pillar 4: Improving agriculture research, technology dissemination and adoption

[4] AUC (Africa Union 2014), 2014 Addis Ababa

environment. The declaration also recognizes the institutional gaps that need to be bridged. The EAC CAADP Compact has mainstreamed these considerations into the planning process.

Table 1: EAC Partner States CAADP implementation milestones

Partner State	Compact signed	Results Framework	SAKSS Established	Agriculture Investment Plans	Joint Sector Review Assessments	CAADP Profile and Status Report
Burundi	Aug 2009	No	No	Aug 2012	No	No
Kenya	Jul 2010	No	Yes	Sep 2010	Yes	Yes
Rwanda	Mar 2007	Yes	Yes	Dec 2009	Yes	Yes
Tanzania	Jul 2010	No	Yes	May 2011	Yes	No
Uganda	Mar 2010	No	Yes	Sep 2010	Yes	Yes
South Sudan	---	----	----	----	----	----
EAC Secretariat	Sep 2016	Zero Draft	Yes*	RAIP under formulation	No	Yes

Source: EAC Secretariat, ReSAKSS, 2017

*working in collaboration with ReSAKSS-ECA

Despite the Maputo commitments, agricultural productivity in EAC Partner States is still faced with challenges among them: low crop and livestock productivity levels that are far below what is achievable in research stations and by other comparator countries; high post-harvest losses; minimal value addition; and, poor natural resource management which exacerbates vulnerability to climatic change related risks. These problems are a manifestation of a number of inherent constraints, namely: low expenditure agriculture including agricultural research and development; poor infrastructure; low rollout of improved technologies and irrigation; inappropriate policies (that directly or indirectly tax agriculture); capacity weaknesses in agricultural institutions; and, poor coordination of responses to emerging issues and emergencies.

Exacerbated by the poor intraregional trade and poor integration between surplus and deficit regions, food deficits have become prevalent in EAC in recent years. Although the trends in hunger (as measured by the global hunger index - GHI) generally declined between 2001 and 2014, recent figures from 2015 point to a sudden surge, not just globally but also among the EAC Partner States (Figure 12). Moreover, the state of hunger in the region, although varying across the Partner States, has remained considerably above the world average.

The EAC natural resources, especially land and water, are being degraded steadily as a consequence of a number of drivers, among them: climate change; rapid population growth; lags in adoption of sustainable exploitation and conservation measures; inadequate legal and institutional frameworks and capacity; and, poor enforcement of the existing laws. These driving forces have not spared the region's trans-boundary resources that in addition suffer due to unique challenges notably low public investment and poor policy harmonization and coordination.

Although the Partner States have developed and implemented CAADP Compacts and National Agriculture Investment Plans (NAIPs), the pace and depth of achievement has been mixed; thus the twin challenges of food and nutrition security and poverty stubbornly persist

in the region's landscape. The extent of commitment to policy, legal and regulatory frameworks to support the intent and practicalities of the development initiatives have not carried the required depth to create the necessary enabling environment for growth. Furthermore, support and development of capacities of regional institutions, including the EAC Secretariat, to better coordinate and oversight the development of the region's initiatives have been weak.

This EAC RAIP is an effort to identify interventions required for the implementation of the EAC CAADP Compact and the EAC Food and Nutrition Security Action Plan. The RAIP is therefore underpinned on, *inter alia:* the EAC Agriculture and Rural Development Strategy; EAC Food and Nutrition Policy and Strategy; EAC CAADP Compact and Results Framework; and, the EAC Regional Food and Nutrition Security Policy and Action Plan. The related NAFSIPs have given a strong platform for initiating take off. The Plan therefore takes cognizance of, and is anchored on, these national policies, strategies and initiatives. In this regard, discerning analytical framework differentiates the priority interventions in terms of national or regional focus, without losing the complementarities inherent in their implementation and potential impacts.

1.2 Objectives of the EAC RAIP

The persistent challenges in the coordination and implementation of CAADP and other declarations have hindered the achievement of agricultural transformation and growth for shared prosperity in the EAC region. In line with the EAC CAADP Compact and Results Framework, the objectives of this RAIP are to facilitate enhanced regional food supply and efficient utilization through:

i) Addressing challenges that hinder achievement and sustainability of higher agricultural productivity, including exploitation of alternative sources of food
ii) Modalities for promoting and deepening regional trade
iii) Targeting investments for alleviating challenges that hinder value addition and scaling up of intra-industry trade
iv) Increasing resilience of livelihoods and improved management of risks
v) Promoting sustainable management of shared natural resources and effective response to climatic shocks

1.3 Process of Developing the RAIP

The EAC RAIP was developed through a consultative approach by a team of consultants from REMPAI who spearheaded and coordinated the process in close consultations with representatives of the Agriculture and Food Security Department of the EAC Secretariat. The consultants reviewed existing policy and relevant published documents and compiled the first draft which was subsequently subjected to the following stages of review and validation:

a) A consultative meeting with country CAADP Focal Points during which concurrence was reached on the general contents of the RAIP, including: the thematic areas for investment; compliance with the CAADP pillars, EAC CAADP Compact, Malabo declaration (goals) and reiterating the significant distinction between the national

agricultural investment plans (NAIPS) and their complementarity with the RAIP; agreement on time lines for written feedback (including provision of additional literature and country specific data and updates on the CAADP processes) and schedules of country validation workshops. The consultative meeting was held in Kampala (Uganda)

b) The second round of meetings (stakeholder validation workshops) involved government officials from a wide range of agriculture related sectors and representatives of selected private sector and non-governmental organizations. The validation exercise was conducted in all EAC Partner States (except South Sudan which was in the process of joining EAC when the assignment commenced) and also included participants with expertise in livestock, fisheries, agricultural development planning, climate change and food and nutrition security

c) The revised draft report emanating from the validation workshops was subjected to further review and critique by a select group of experts drawn from Partner States, International Livestock Research Institute (ILRI), Regional Strategic Analysis and Knowledge Support Systems (ReSAKSS) and representatives of Agriculture and Food Security Sector of the EAC Secretariat. The revised document was also shared with specialists from civil society organizations

d) In early October 2017, the consultants presented the final draft report to EAC for internal validation and ownership prior to a planned regional validation workshop that was to be held in Kampala

e) Regional validation workshop held in Kampala, Uganda in November 2017: a wide range of public officials and representatives of value chain actors, commodity groups/associations and development partners were invited to the regional meeting

This extensive consultative and vetting process resulted in identification of priority areas for increasing investment in the agricultural sector in the EAC region and a fully costed (investment) plan in the agricultural sector with clear goals, objectives and timeframes.

CHAPTER 2: SITUATION ANALYSIS

2.1 Economic growth, poverty and inequality in EAC

The EAC economies recovered from the 2008 food crisis and the down-turn in the global financial markets to record positive growth rates. The GDP (at constant 2009 prices) grew by 68 percent between 2008 and 2015 (Table 2). However, the economic growth in the Partner States was erratic and generally slowed down towards 2015 (Annex 1).

Table 2: Aggregated EAC Partner States' gross domestic product (GDP) and agricultural gross domestic product (2008-2015)

GDP		2008	2009	2010	2011	2012	2013	2014	2015
GDP at market prices	Constant 2009 prices USD million	87,913	91,674	97,989	101,309	107,046	112,006	118,497	121,619
	Quantity index (2009=100)	95.9	100	106.9	110.5	116.8	122.2	129.3	132.7
	Growth rates (%)	-	4.30	6.90	3.40	5.70	4.60	5.80	2.60
GDP per capita	Current prices (USD)	697	733	768	834	941	1,001	1,014	974
	Constant 2009 prices (USD)	708	718	747	751	772	786	814	812
AgGDP (USD constant prices-2009)	Constant 2009 USD million	24,258	24,917	26,052	25,677	26,734	27,475	28,148	28,053
	Growth rates (%)		2.70	4.60	-1.40	4.10	2.80	2.40	-0.30
	Agriculture (Crops & Livestock)	21,229	21,633	22,702	22,288	23,078	23,524	24,034	23,870
AgGDP contribution to GDP (%)	Constant 2009 prices (USD)	28	27	27	25	25	25	24	23

Source: EAC Facts and Figures, 2016

This slowing down in the growth of GDP negatively affected achievement of the MDG-1, namely, halving the incidence of poverty by 2015. Poverty and food security outcomes continued to worsen in Kenya and Burundi while improving in Tanzania, Rwanda and Uganda. In 2015, the population below US$1.90 a day (poverty headcount[5]), was 77 percent in Burundi, 34 percent in Kenya, 60 percent in Rwanda, 47 percent in Tanzania and 35 percent in Uganda (Human Development Index - HDI, 2016)[6]. According to the HDI, 2016, estimates of poverty headcount, based on the national poverty lines, indicated that 64 percent of the population was below the poverty line in Burundi, 46 percent in Kenya, and

[5] Data from ReSAKSS (http://www.resakss.org/)
[6] Data from demographic surveys: Burundi (2010), Kenya(2014), Rwanda (2014/15), Tanzania (2010), and Uganda (2011)

20 percent in Tanzania. In Rwanda[7] and Uganda[8], poverty incidence estimates were 39 and 35 percent, respectively.

The agriculture sector[9] showed signs of recovery from the impacts of the global food crisis in 2008 to 2011 that were compounded by adverse dynamics in the political economies of some EAC Partner States. Consequently, agriculture's contribution to GDP trended downwards in real terms between 2009 and 2015. For EAC Partner States, there is a positive correlation between the growth rates of GDP and AgGDP (Figure 1). This implies that there is need for the countries to focus policy intervention on the agriculture sector as a means of accelerating economic growth. Due to its potential in expanding exports and reducing poverty, agriculture offers the greatest payoffs to both private and public investments (McAuliffe, et al 2012[10]). In developing countries, generally, evidence shows that a 1 percent GDP growth originating from agriculture increases the expenditures of the three poorest deciles by at least 2.5 times compared to growth originating from the rest of the economy (World Bank 2007[11]). This strong multiplier effect has significant employment and food security implications for the region's large rural population.

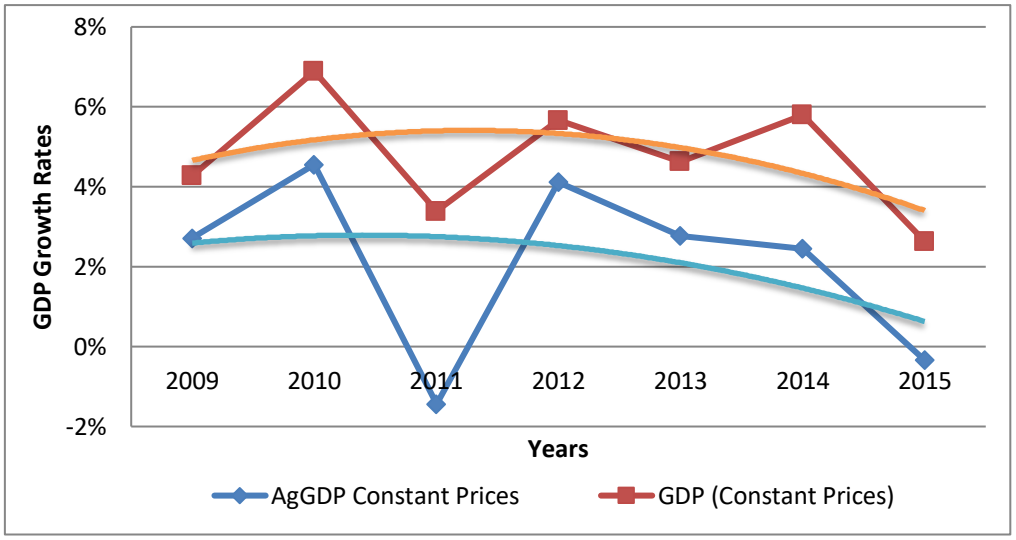

Figure 1: AgGDP and GDP growth rates in EAC

Inequality has been an impeding factor in economic development in EAC mainly through its impacts on governance, political stability and power control. Inequality is driven by income

[7] Republic of Rwanda (2015). Rwanda Poverty Profile Report 2013/2014. Results of Integrated Household Living Conditions Survey (EICV). National Institute of Statistics of Rwanda

[8] World Bank (2016). The Uganda Poverty Assessment Report 2016 Farms, Cities and Good fortune: Assessing poverty reduction in Uganda from 2006 to 2013

[9] Measures for the agriculture sector in East Africa were estimated as aggregated values of agriculture (crops and livestock), forestry and fishing sectors

[10] McAuliffe, Catherine, Sweta C. Saxena, and Masafumi Yabara (2012). "The East African Community: Prospects for Sustained Growth," IMF Working Paper No. 12/272

[11] World Bank (2007). *World Development Report 2008* Agriculture for Development. Washington, DC. https://openknowledge.worldbank.org/handle/10986/5990 License: CC BY 3.0 IGO

and non-income factors such as asset ownership and differences in access to social-amenities such as electricity, health facilities, roads and telecommunication services. There is, however, little statistical evidence in the EAC Partner States to conclusively attest to the relationship between economic growth and income or non-income driven inequality.

Although available household surveys may differ in terms of years they were conducted, the recently estimated measures of inequality in EAC suggest that Burundi was the least unequal with a Palma ratio of 1.3 compared to Tanzania (1.65); Uganda (2.0); Kenya (2.9); and Rwanda (3.2) according to HDI (2016). The respective Gini[12] coefficients were Burundi (39), Kenya (49), Rwanda (45)[13], Uganda (41) and Tanzania (39) (Ibid). These inequality values point to considerably high levels of disparity between the high and low income households. High-income inequalities frustrate human capacity development efforts and ultimately lead to economic instability.

2.2 Main agricultural commodity categories in EAC

For purposes of policy intervention and investment coordination, the commodities and factors of production in EAC can be grouped into 5 clusters: i) staple food crops (cereals, pulses and roots/tubers); ii) industrial/commercial and horticultural crops; iii) livestock and livestock products (LLPs) and apiculture; iv) fisheries; and, v) factors of production. The clusters generally have unique challenges as elaborated in Annex 2; for example, production intensification through increased use of fertilizer and irrigation is significantly lower in the food security related crops compared to commercial crops while infrastructure, food safety and standards are major challenges for horticulture due to their perishability. Agro-climatic conditions and cropping seasons in EAC are fairly similar but there are slight variations (e.g. due to altitudes, soil types and fertility) that confer comparative advantages to some countries thus creating opportunities for intra-regional trade.

The specific commodities in each category and a rating of the potential benefits of harmonization of policies and investment coordination at the EAC level are shown in Table 3. The crop and livestock commodities and fisheries have been selected on the basis of prospects for cross border trade due to rising consumer demand, contribution to regional food security and opportunities for commercialization and value addition. Factors of production on the other hand are selected based on their significance in the region's agricultural transformation. Land, labor, and water availability to a large extent determines the region's production patterns and the mix of commodities traded across the EAC borders. Efforts to increase productivity often face challenges of access to capital, especially among the smallholder farmers. Capital constraints in turn, hinder adoption of the green revolution technologies including fertilizer, high yielding seed varieties and irrigation. Proper coordination of domestic marketing and trade related activities at the EAC level will have

[12] *Gini Coefficient* measures the deviation of the distribution of income among individuals or households within a country from a perfectly equal distribution. A value of 0 represents absolute equality and a value of 100, absolute inequality

[13] Republic of Rwanda (RoR), 2015. Rwanda Poverty Profile Report 2013/2014. Results of Integrated Household Living Conditions Survey (EICV). National Institute of Statistics of Rwanda

vast improvements in inclusive market access, particularly by smallholder producers who account for the bulk of marketed agricultural surpluses in the region.

Table 3: Key commodities in EAC and a rating of potential benefits of policy harmonization and investment coordination

Commodity or factor Categories	Priority commodities (Products)	Potential contribution of EAC policy harmonization and investment coordination		
		High	Medium	Low
Staple crops (Cereals, Pulses, Roots and Tubers)	Maize	√		
	Rice	√		
	Wheat	√		
	Sorghum		√	
	Millet		*	√*
	Beans (dry)	√	√	
	Groundnuts and green grams	√		
	Irish potato	√		
	Sweet potato		√	
	Cassava	√		
	Arrow roots			√
	Bananas and plantains	√		
Industrial /Commercial and horticultural Crops	Tea	√		
	Coffee	√		
	Pyrethrum		√	
	Sugarcane	√		
	Cotton	√		
	Sisal	√		
	Tobacco	√		
	Cashew Nuts		√	
	Oil Crops (soya beans, macadamia and sunflower, palm oil)		√	
	Fruits and vegetables (pineapples and	√		
	Floriculture	v		
Livestock and Livestock Products (LLPs) and apiculture	Beef Cattle	√		
	Dairy Cattle	√		
	Pigs		√	
	Sheep and Goats (Shoats)	√		
	Poultry	√		
	Camels		√	√
	Apiculture (Honey)		√	
	Rabbits			√
Fisheries	Marine Fisheries	√		
	Aquaculture (Cage and pond culture) Fisheries	√		
	Capture Fisheries (Lakes and Rivers)	√		
Factors of Production	Land	√		
	Labor	√		
	Seeds, Semen, embryos, fingerlings	√		

	Fertilizer/animal feeds/other farm inputs such as pesticides	√		
	Water	√		
	Finance and insurance	√		
	Pesticides and herbicides	√		

*Approximate ratings based on discussions with EAC and various literature sources: ticks at more than one column implies a range in potential contribution

2.3 Food Crop production trends in EAC

The major food crops in the region include maize, rice, wheat, bananas, pulses (beans), and Irish potatoes. Maize is the key staple across all the EAC Partner States. Other important food crops include bananas in Uganda rice in Tanzania and Rwanda. Cassava, sorghum and millet also have significant contribution to household food security especially in semi-arid and arid areas.

All the EAC Partner States are characterized by productivities that fall considerably below the estimated global figures (Table 4). Factors that explain the low levels of productivity include: poor rollout and adoption of improved technologies, inappropriate production and trade policies, underfunding research and development, inadequate exploitation of irrigation potential, underdeveloped seed production and development systems, low fertilizer application rates, poor infrastructure, and post-harvest loss management.

Table 4: Agricultural Commodity Productivities (2003)

tons/ha, except beef and milk

Commodity	Eastern Africa	Africa	Global	Yield Potential
Maize	1.39	1.16	4.47	*H625: 7.5-8.5 *H626: 7.8-10.5 *KH600/24A: 10.5-15.4
Wheat	1.28	2.03	2.66	Western Europe: over 8.0 India (Punjab): 6.0-7.0 Argentina: 5.2
Rice	1.12	1.87	3.84	**SK2034 and SK 2046: 9.5
Beans	0.60	0.62	0.70	*KK072: 1.8 *PUEBLA: 2.0-3.0 *FLORA: 2.0-3.5
Bananas	4.69	6.56	15.25	*Tc Banana: 25.0 *Local (desert): 8.0 Research station reports from Uganda: 35.0-40.0
Beef (kg/animal)	127	148	200	Not available
Cow milk (kg/animal/year)	427	496	2197	Over 4,000

Source: FAO (2004). *Kenyan hybrid yields at KARI/Kitale research station (reported in 2008)
**Egyptian 2005 national average yield boosted by the two varieties shown (reported by FAO.org/Newsroom, September 2006)

2.3.1 Trends in Maize yields

Between 1995 and 2014, maize yields in EAC Partner States were low and stagnant, ranging between 1.3 tons/ha and 1.8 tons/ha. This was far below the global maize productivity estimate of 3.6 tons/ha and also below the yields in Southern Africa region (Table 5**Error! Reference source not found.**).The entire Eastern Africa region performed poorly in terms of yields for most of the main food crops compared to the averages for Africa as a whole.

Table 5: Maize yield by country/region (1995-2014) - tons/ha

Country/Region	1995-1997	1998-2000	2001-2003	2004-2006	2007-2009	2010-2012	2013-2014	Average Annual Growth rates
Burundi	1.3	1.1	1.1	1.1	1.0	1.1	1.3	1.1
Kenya	1.6	1.5	1.6	1.7	1.5	1.7	1.7	1.6
Rwanda	1.1	0.8	0.8	0.8	1.3	2.3	2.3	1.3
Uganda	1.4	1.7	1.8	1.5	2.2	2.4	2.5	1.9
Tanzania	1.7	1.7	1.6	1.3	1.3	1.4	1.4	1.5
EAC Average	**1.4**	**1.5**	**1.4**	**1.3**	**1.5**	**1.8**	**1.8**	**1.5**
DR Congo	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Egypt	6.7	7.5	7.5	8.1	7.9	7.6	7.7	7.6
Ethiopia	1.6	1.7	1.7	2.1	2.1	2.9	3.3	2.2
Northern Africa	4.7	5.4	5.6	6.1	6.3	6.4	6.5	5.9
Southern Africa	2.1	2.3	2.5	3.1	3.8	3.9	3.9	3.1
Americas	5.2	5.8	6.0	6.6	7.0	6.7	7.1	6.3

Source: EAC Facts and Figures, 2016

More specifically, maize productivity in Kenya and Tanzania generally remained low in the last two decades reflecting poor husbandry practices and low use of improved technology, especially high yielding seed varieties and fertilizer. Compared to the Southern Africa region which has witnessed an upward trend, productivity in Kenya and Tanzania (the main EAC producers) gradually declined with fluctuations between 1 and 2 tons/ha since 1980s. However, there have been recent spikes in productivity reflecting either favorable rainfall patterns and/or public policy support, such as input subsidies and access to credit -Figure 2.

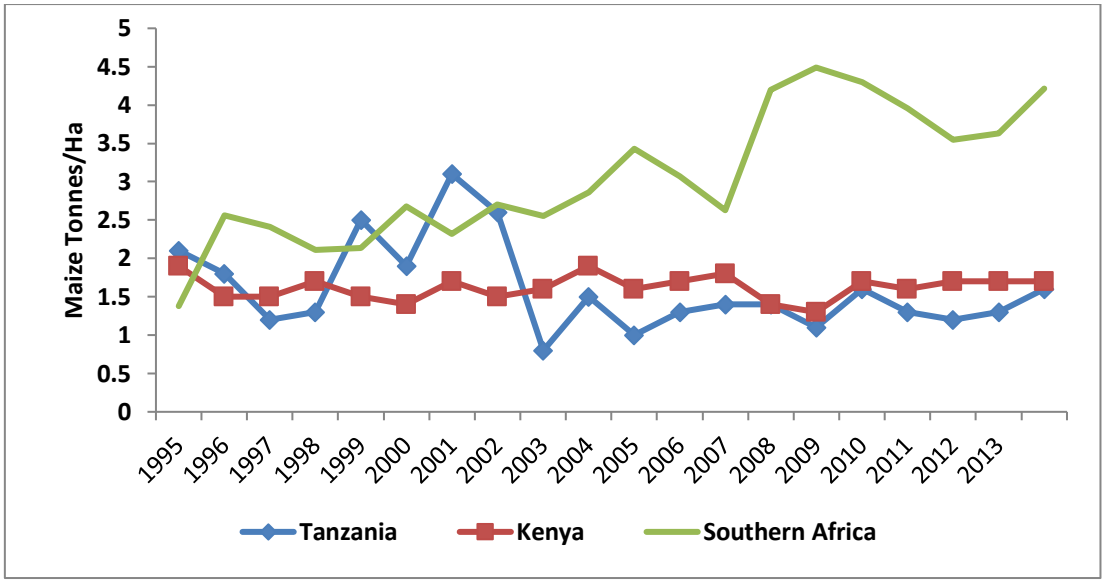

Figure 2: Maize yields in Kenya, Tanzania and Southern Africa (tons/ha)
Source: FAOSTAT

2.3.2 Banana production and yields

The region's main banana producers are Uganda, Rwanda and Burundi. Available data show that average productivity for EAC in 2013 was only 6 tons/ha compared to the world average of about 15 tons/ha and 19 tons/ha for the Southern Africa region (Figure 3).

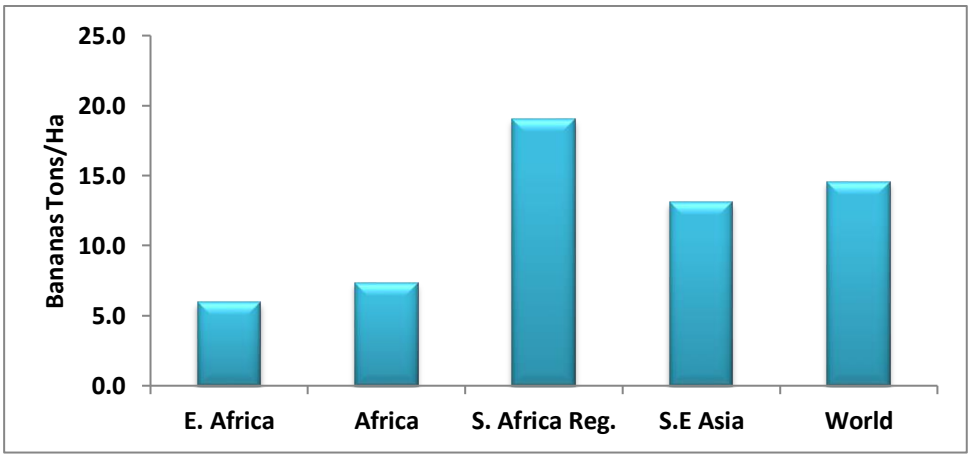

Figure 3: Long term average yields of banana (tons/ha) - 1961-2013)
Source: FAOSTAT

Banana yields remained relatively constant although with sharp fluctuations in some years since 1990s but declined in Rwanda Figure 4. The decline total production for bananas in Rwanda resulted from diseases among them banana weevil, nematodes, *fusarium* and bacterial wilt (NISR, 2006[14]). Uganda has the highest per capita banana consumption in the

[14] NISR, MINECOFIN & MINAGRI (2006). Rwanda Agricultural Survey 2006. Kigali.

world at 0.70 kg per person daily (Keya and Rubaihayo, 2013[15]) and the country is also the second largest producer of bananas, second to India which has a 10 percent share of global production (FAOSTAT, 2006).

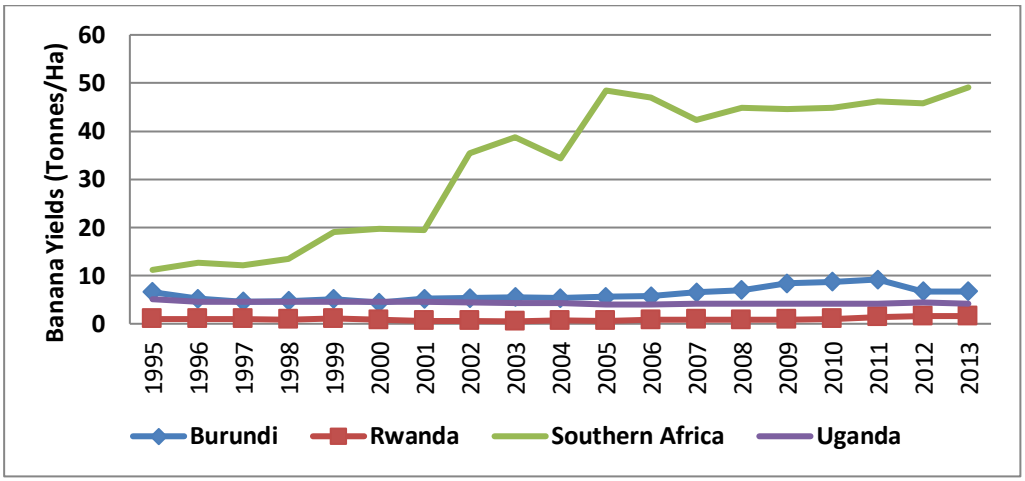

Figure 4: Banana yields (1995-2013)
Source: FAOSTAT

2.3.3 Wheat production and consumption

Kenya is the main producer of wheat within the EAC Partner States accounting for over 70 percent of the total production (FAOSTAT, 2016). Production of wheat in Kenya has increased steadily driven by increased adoption of high yielding varieties. In 2008/2009, production averaged 277 thousand tons, and increased to 445 thousand tons in 2012/2013. Other EAC Partner States produce wheat but in small quantities.

Wheat consumption has increased considerably driven by changing household demographics and urbanization (Weliwita et al, 2003[16]; Musyoka et al, 2014). Between 2001 and 2013, wheat production increased by more than 80 percent from 368 to 680 thousand tons but consumption over the same period more than doubled, increasing from 1,345 to 2,837 thousand tons (Figure 5).

[15] Keya, S and Rubaihayo, P. (2013). Progress in On-Farm Production and Productivity in the East African Community: 50 Years after Independence. Kilimo Trust Technical Paper No.8

[16] Weliwita, A. D. Nyange and H. Tsujii (2003). Food demand patterns in Tanzania: a censored regression analysis of micro data. Sri-Lankan Journal of Agricultural Economics 5:10–23

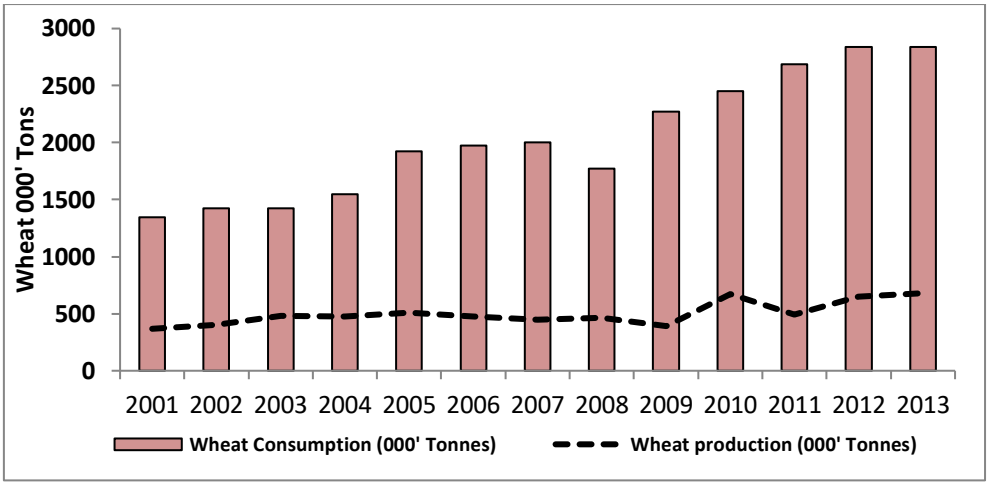

Figure 5: Wheat production and consumption in EAC Partner States
Source: FAOSTAT

2.3.4 Rice production and consumption

As in the case of wheat, rice consumption exceeds production with the deficit being met through imports. In 2013, rice production was estimated at 1,768,000 tons while consumption was estimated to 1,885,000 tons (FAOSTAT, 2016). The increase in rice consumption is also associated with increase in urbanization and a shift from the traditional hard cereals to soft cereals. Of the total rice production in EAC Partner States, Tanzania produces more than 80 percent with the rest of EAC supplying 20 percent.

Across the EAC Partner States, rice production per hectare ranges between 1.9 tons per ha in Uganda to 4.4 tons per ha in Rwanda. Despite Tanzania supplying a significant proportion of rice within EAC, productivity is lower than in most of the EAC states and averages 2.0 tons per ha (Figure 6). Production of rice per hectare in EAC is estimated to be 2.4 tons per ha compared to 4.0 tons per ha in South East Asia.

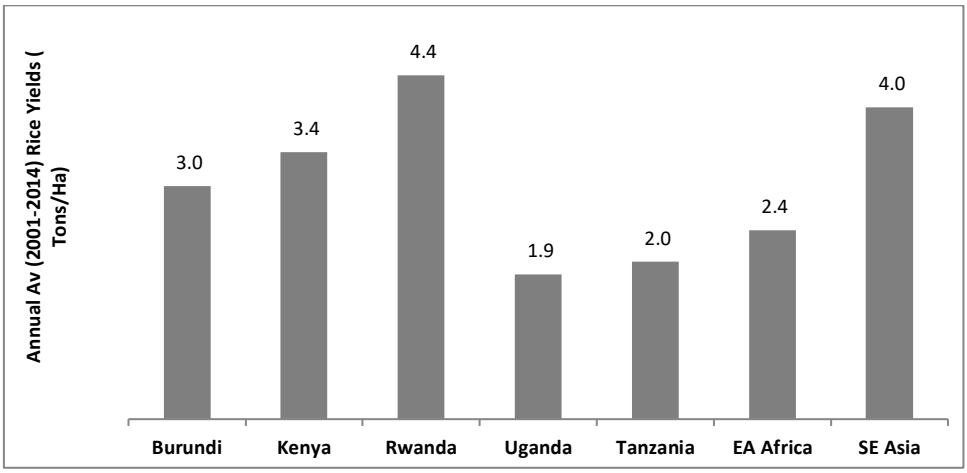

Figure 6: Rice productivity in EAC Partner States
Source: FAOSTAT

2.3.4 Production and yields of beans in EAC

Production of legumes, especially dry beans, has witnessed steady increase since 1961. Total production has grown more than six fold increasing from 0.5 million metric tons in

1961 to slightly more than 3.0 million metric tons in 2014 (Figure 7).Overall production grew faster compared to the area under beans over the same period indicating that the growth was driven by adoption of high yielding varieties and management practices rather than expansion of area under beans.

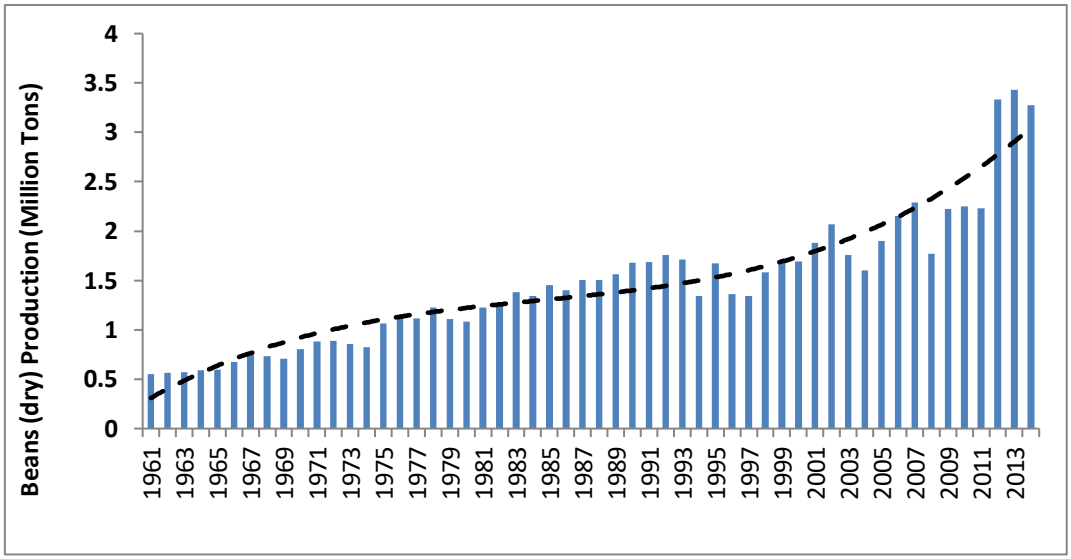

Figure 7: Production of dry beans in EAC.
Source: FAOSTAT

Productivity varies across the EAC Partner States driven by the climatic variability. Burundi has the highest yields (average 0.98 tons per ha). Kenya has the lowest productivity estimated at 0.53 per ha (Figure 8).

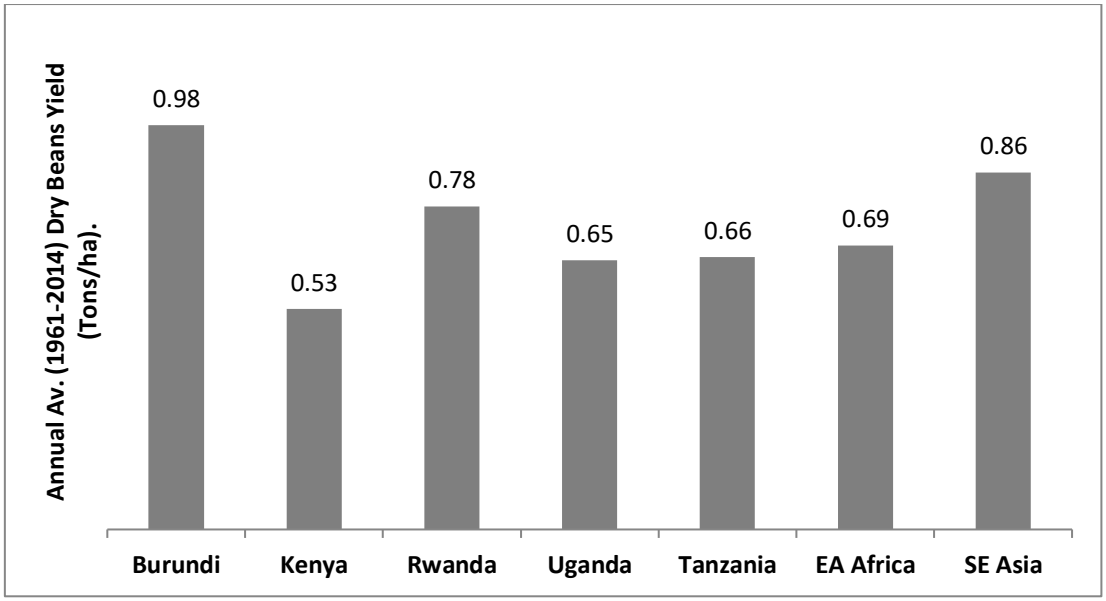

Figure 8: EAC Long term average productivity of dry beans (1961-2014)
Source: FAOSTAT

2.3.5 Production and yields of Irish potatoes in EAC

Kenya and Rwanda produce the bulk of Irish potatoes in EAC. Between 2001 and 2013, Kenya supplied 39 percent while Rwanda supplied 29 percent of the total production, accounting for over 67 percent of the total EAC production[17]. Available data shows that production of Irish potatoes per unit area has been trending upwards in Kenya and Rwanda: productivity increased from 9.2-14 tons per ha in Kenya and 8.6 to 13.5 tons per ha in Rwanda (Figure 9). Kenya's productivity increase was supported by the well-developed potato research and extension system emphasizing on use of tissue culture and high yielding potato varieties. However, since 2013 the productivity in Kenya started to decline owing to increasing seed costs that led to use of non-certified planting materials which in turn precipitated a buildup of disease load[18].

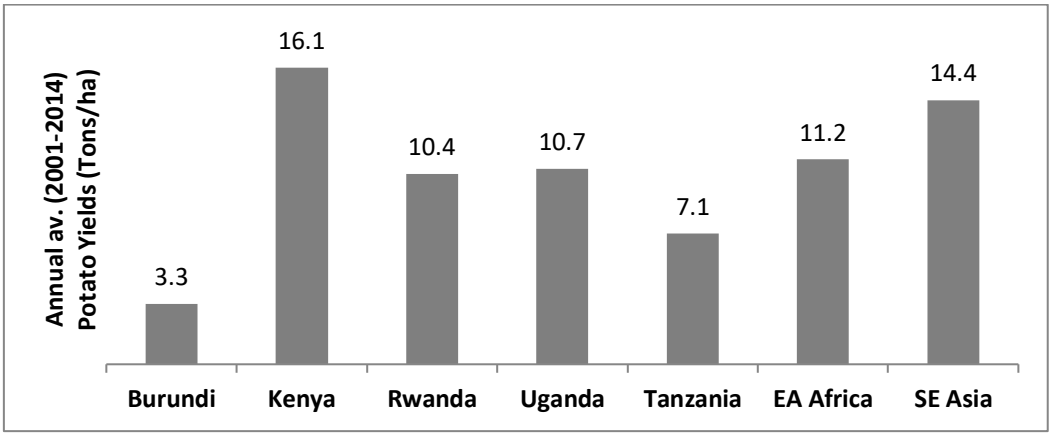

Figure 9: Irish potato yields across EAC Partner States
Source: FAOSTAT

2.4 Livestock and Fisheries Production Trends

2.4.1 Livestock and Livestock Products

The livestock sector in Africa has the potential to deliver both the agricultural-led growth and the socio-economic transformation envisioned in the Malabo Declaration. The livestock sector in EAC contributes between 10 and 15 percent of GDP and between 30 and 50 percent to agricultural GDP. The sector has the potential to contribute over 50 percent to the agriculture GDP but the potential remains unexploited. The population of livestock in EAC is estimated at about 50 million cattle, 25 million sheep, 60 million goats, 3 million camels, 6 million pigs and 120 million poultry (EAC Livestock policy, 2016). Most of the livestock keeping takes place in arid and semi-arid areas in free-range production systems and produce more than 70 percent of meat.

[17] Estimates from FAOSTAT database 2016
[18] Muthoni et al., 2013. Potato Production in Kenya: Farming Systems and Production constraints. *Journal of Agricultural Science Vol 5 (5)*

The livestock sector presents one of the best opportunities to transform the arid and semi-arid economies. Driven by the increasing population and urbanization trends, the demand for meat in EAC is projected to increase two to eight fold against dwindling stocks through 2050 (Delgado, 1999; FAO, 2011).

With the exception of milk, FAO estimates that the level of livestock productivity is 40 percent below the average attained in developed countries. Current estimates of livestock productivity (Kg/animal/year) are: beef 10.4, milk 395.8, sheep and goat 3.5, pig 47.1, poultry meat 1.4 and eggs 2.6 (EAC Livestock Policy, 2016). This low level of productivity is driven by several factors, among them: technical constraints (disease, nutrition, breeding and poor husbandry); policy and Institutional related constraints; and specific ecological factors, limited access to financial services, and farmers' attitudes with respect to commercialization (CAADP 2006).

Total meat demand in EAC is projected to increase by 22 percent from 2.1 million tons in 2017 to 2.5 million tons in 2022. Over the same period, per capita meat consumption[19] will increase by 8 percent from about 12.4 Kg to 13.4 Kg and is expected to increase to 24 Kg by 2050 (Figure 10). At just about 0.7 million MT (

[19] $\textbf{Projected per capita meat consumption} = \boldsymbol{Q_0}(\mathbf{1}+\boldsymbol{P_r})^{\boldsymbol{n}}\left(\mathbf{1}+\boldsymbol{Y_r}*\boldsymbol{E_y}\right)^{\boldsymbol{n}}$, where Q_0= meat demand (total population*per capita (kg/capita)) at base year (2017); P_r=rate of population growth; Y_r annual rate of per capita income/GDP growth; E_y=income elasticity of meat demand and *n* is the projection period. ***Assumptions*****:** population EAC (million) = 168; per capita meat consumption (Kg) = 12; annual pop growth rate = 0.02; per capita Income growth = 0.02; income elasticity of demand for meat (near unitary) = 1.02

Table 6), the estimated EAC meat supply falls significantly below the estimated consumption requirement of 2.1 million MT[20]. This excess demand is widened further by persistent challenges such as poor distribution and marketing infrastructure; seasonality in supply due to over-reliance on rainfall; and, climate change threats that are likely to impact adversely on the carrying capacity of the region's rangelands that constitute the main source of beef, goats and sheep. The porous borders of the Partner States also pose serious risks of trans-boundary diseases and pests. These challenges, in addition to the rapid urbanization, expanding middle income population and declining livestock inflows from cattle-rich neighbors, will most definitely lead to an inflation of consumer meat prices thereby compromising the food security and nutritional status of many households in East Africa (AU-IBAR 2014).

The flip side of the above scenario is that the supply deficit offers an opportunity for public and private investments that will shift production towards more intensive systems, for example, commercial ranching and feedlots in the case of cattle.

[20] Off-take is assumed to be 12% for cattle, 20.6% sheep and 17% for goats in pastoral production systems (*MJ Otte & P. Chillonda: 2002 - Cattle and Small Ruminant Production Systems in Sub-Saharan Africa-A Systematic Review*). It is also assumed that 10% of the cattle herd is kept for dairy production, and that the livestock productivities (Kg/animal/year) are 10.4 for beef, 3.5 for sheep and goats, 47.1 for pigs and 1.4 for poultry.

Table 6: Supply estimates for the different livestock species in EAC

Livestock Type	2014 Stock (000)	Livestock Productivity (Kg/animal/year)	Off-take rates (%)	Cattle Adjustment**	Estimated Meat Supply in 2014 (MT)
Cattle	55,098	10.4	12	0.9	61,886
Sheep	29,323	3.5	21	1.0	21,552
Goats	63,130	3.5	17	1.0	37,563
Pigs	7,474	47.1	100	1.0	352,025
Chickens	142,569	1.4	100	1.0	199,597
TOTAL ESTIMATE					**672,623**

Source: EAC Facts and Figure, 2016

*These estimates are based on 2014 animal numbers and do not include livestock inflows/outflows from/to countries bordering EAC and also do not account for stocks in South Sudan due to data challenges

**Cattle stock levels are adjusted down by 10% to account for dairy herds

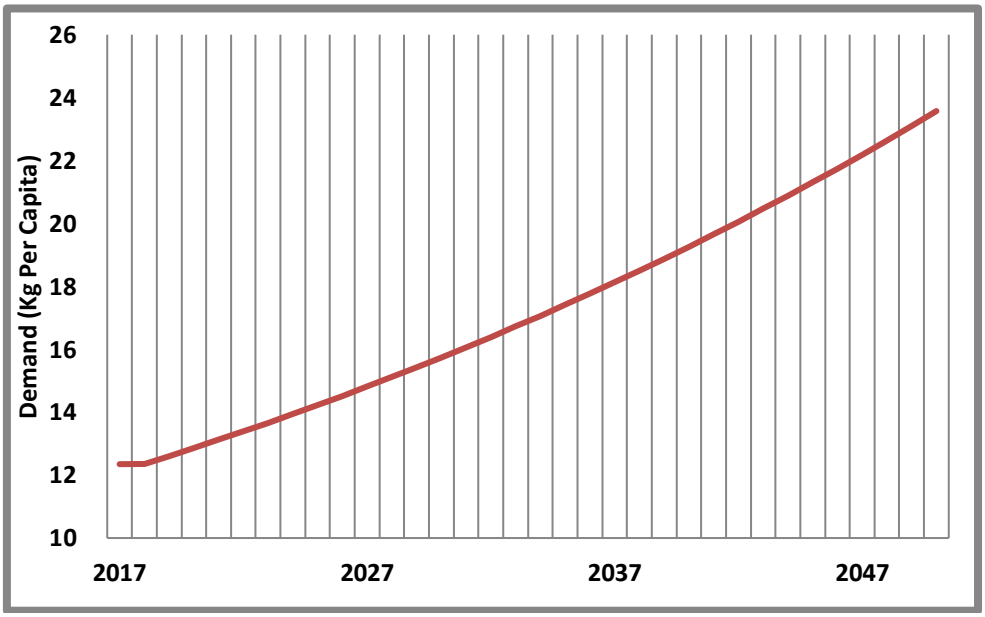

Figure 10: Projected EAC meat demand between 2017 and 2050
Source Data: FAOSTAT, EAC Facts and Figures, 2014

2.4.2 Fisheries

The Eastern Africa Region is rich in inland water bodies, having the second largest lake in the world, Lake Victoria, and the second deepest lake in the world, Lake Tanganyika, amongst others. In addition, the region has a number of smaller lakes, man-made dams and rivers. The EAC waters have a variety of fish species offering monetary benefits derived from the national, regional and international markets. The region's recorded fish catches in the 2008-2015 period ranged between 0.86 million and 1 million tons. Uganda (0.37 - 0.42 million tons) and Tanzania (0.33 - 0.38 million tons) recorded the highest catches (EAC Facts and Figures, 2016). The import trade value in fish and fishery products in the EAC Region was estimated to be about USD 245 million in 2014 while the export value was more than USD 991 million (*Ibid*).

The Partner States with high fish consumption were Tanzania (7.4 Kg/person/yr - MLFD, 2015); Uganda (6.2 Kg/person/yr - UBOS, 2010); and, Kenya (3.9 Kg/person/yr). Burundi and Rwanda had comparatively lower consumption rates of 1.9 and 0.3 Kg/person/yr, respectively. The consumption figures for the region are considerably lower than the FAO recommended consumption of 20 Kg/person/yr (FAO, 2010).

The United Nations Laws of the Seas provide for 200 nautical miles for the exclusive economic zone (EEZ) and Kenya and Tanzania have their respective shares in the Indian Ocean which largely remain underexploited. Both the inland and marine waters have high potential in terms of fish production and could be managed and developed, together with aquaculture, to provide substantial economic and social benefits. The EEZ offers opportunities for investment in deep-sea fishing, processing and infrastructure development along the value chain. Fisheries and Aquaculture have in particular the potential to make a significant contribution to food and nutrition security, income generation and livelihoods.

The fisheries industry in the EAC faces a number of challenges including overfishing, illegal unreported unregulated (IUU) fishing, illegal fishing using dynamite, illegal fishing gear, environmental degradation, destruction of fish breeding areas, poor developed cold chain and poor fish landing infrastructure and fishing vessels. The current situation of increasing demand and decreasing supply of capture fisheries has provided an opportunity for aquaculture development in EAC. Consequently, investing in the sector to exploit the vast EAC potential in fisheries and aquaculture for increased fish production would and value chain development is prudent for region. Some of the critical challenges for the aquaculture sub sector include access to good quality fish feeds and seeds.

2.5 Intra-regional trade and food security in EAC

2.5.1 Intra-regional trade in agricultural commodities

Trade among EAC countries is increasingly becoming important as countries try to unlock distribution challenges between the surplus and deficit areas. The total exports within the EAC increased from USD 1,206 million in 2006 to USD 3,327 million in 2015 (Annex). Figure11 indicates that Kenya dominates the intra-EAC export trade while Uganda accounts for one third of the total imports for the period between 2006 and 2015. Rwanda and Burundi have the least export shares at only 5 percent and 1 percent, respectively.

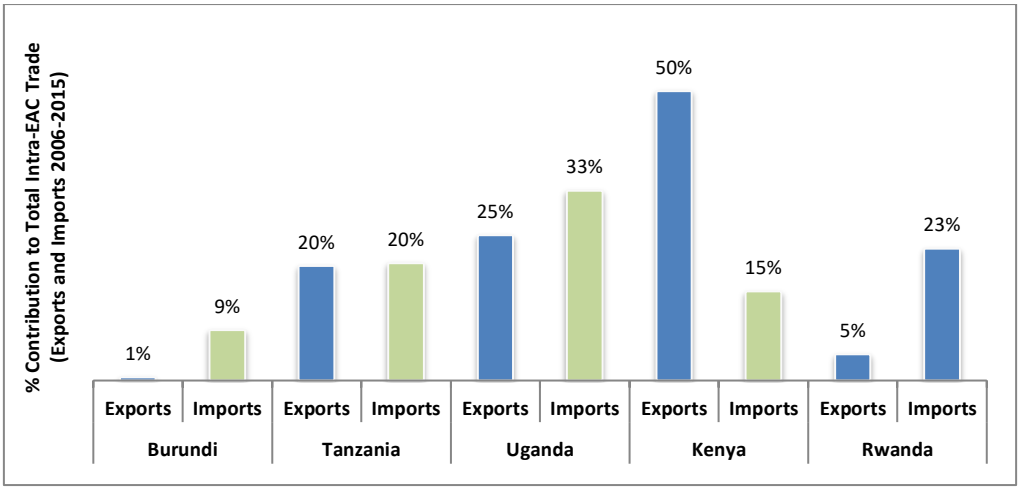

Figure11: Country shares of intra-EAC trade between 2006 and 2015
Source: FAOSTAT

Agricultural products account for over 40 percent of the total formal intra-EAC trade. It is projected that demand for agricultural products, particularly food commodities, is growing at a fast pace driven mainly by growth in urbanization and the expanding middle class (Table 7). By 2030, the value of cereals will reach US$6.6 billion up from US$4.3 in 2015, a more than 50 percent increase. In general, all commodities are likely to increase by more than 50 percent by 2030 based on 2015 values. Non-food crops will increase more than the rest of agricultural products with a 67 percent increase while staple food crops are expected to increase by 49 percent.

Table 7: Projected demand for agricultural and food products in East Africa

(US$ million)

Commodity	1997-1999	2015	2030	Increase (%)
Cereals	2,667	4,340	6,628	53
Non-Cereal Food Crops	6,843	11,641	17,479	50
Staple Food Crops	6,855	11,218	16,672	49
Non-food Crops	270	575	958	67
Livestock	4,479	7,307	11,372	56
All Food Commodities	13,989	23,285	35,479	52
All Agricultural Commodities	14,259	23,860	36,437	53

Source: Riddell et al, 2006

2.5.2 The status of food and nutrition security in EAC

According to FAO (1996), food security is a multidimensional issue encompassing four important pillars: availability, accessibility, utilization and sustainability. The major staples in EAC are maize and bananas but they are supplemented with cassava, Irish potatoes, beans, millet, rice and wheat. Availability of these staples from domestic production has come under intense pressure from rapid population growth and rising per capita incomes. The region faces frequent food shortages caused by factors such as climate change and variability that are often exacerbated by trade restrictions, poor policy implementation and

lack of emergency preparedness. In extreme cases, pockets of the region experience malnutrition and hunger concurrently with availability of adequate food supply in other parts of the region.

Although the trends in hunger (as measured by the global hunger index)[21] have generally been declining between 2001 and 2014, recent figures from 2015 point to a sudden surge, not just globally but also among the EAC Partner States (Figure 12). Moreover, the state of hunger in the region, although varying across the Partner States, has remained considerably above the world average. Except for Burundi, all the other EAC Partner States kept their GHIs fairly close to the average for Sub-Sahara Africa.

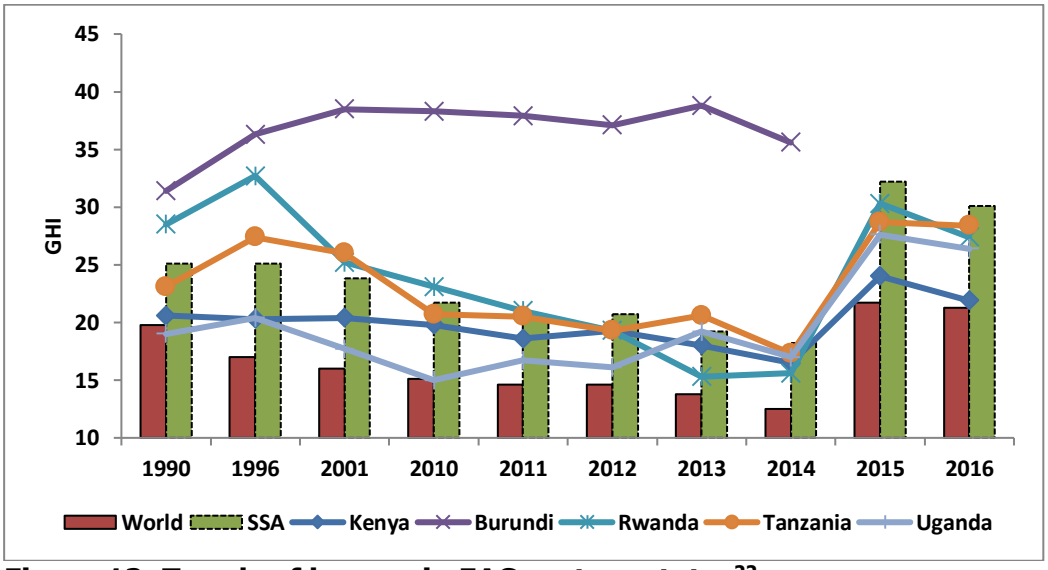

Figure 12: Trends of hunger in EAC partner states[22]

The state of hunger in East Africa Countries declined between 2010 and 2014 as agricultural GDP increased. However, from 2014, the GHI score increased indicating an increase in hunger, but also reflecting the cumulative effect of slowdown in economic growth and drought.

2.5.3 Status of Nutrition in EAC Partner States

The EAC made considerable gains against malnutrition between 1991 and 2015. With the exception of Burundi, the proportion of stunted children (under five years of age) decreased

[21] Global Hunger Index (GHI) is a measure of hunger taking into consideration the proportion of the undernourished in the population, prevalence of underweight children under five years of age, and under five mortality rates.

[22] At 57.5 per cent, according to a 2010–2011 survey, Burundi had the highest child stunting level of all the countries with data and estimates for the 2011–2015 period. In the 2014 GHI report, the last year for which adequate data were available, Burundi had the highest GHI score out of all the countries in the report for which GHI scores could be computed (von Grebmer et al. 2014: von Grebmer, K., A. Saltzman, E. Birol, D. Wiesmann, N. Prasai, S. Yin, Y. Yohannes, P. Menon, J. Thompson, and A. Sonntag (2014). *2014 Global Hunger Index: The Challenge of Hidden Hunger*.

considerably between 1991 and 2015 (Figure 13). This decline was partly driven by economic growth that led to increase in per capita incomes. Despite this decline, none of the EAC Partner States exhibits stunting rates below the world threshold of 20 percent.

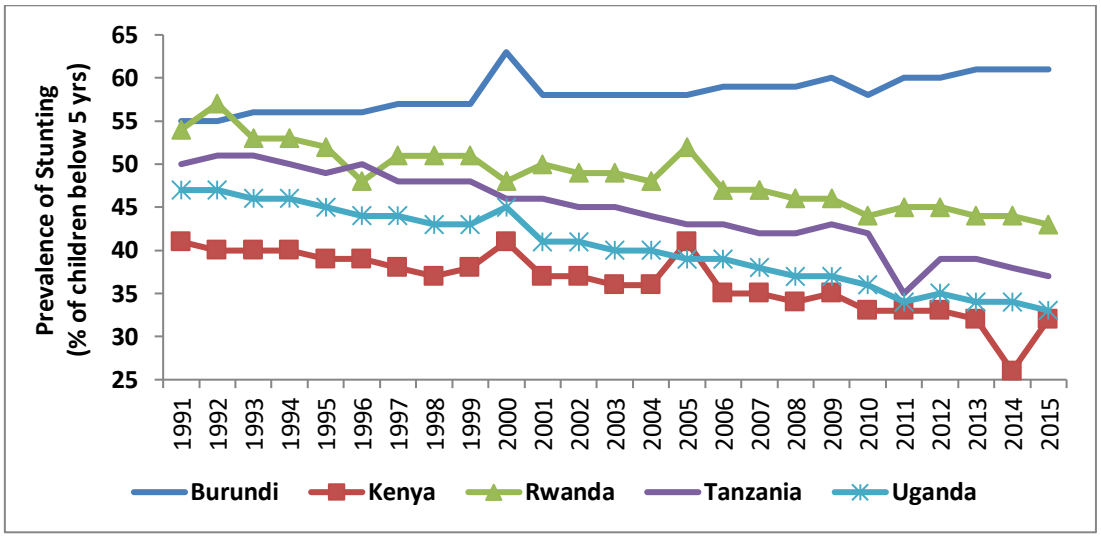

Figure 13: Prevalence of stunting (% children < 5 age of years) 1991-2015
Source: ReSAKSS, 2017. http://www.resakss.org/

Under-five stunting in Burundi are estimated to be 57.5 percent, Kenya 26 percent Rwanda 37.9 percent, Uganda 33.7 percent, Tanzania 34.4 percent (SUN Movement Annual Progress Reports 2016). However, undernourished population shows mixed results in EAC Partner States. In Tanzania, the trend showed a general increase with declines in the undernourished population in the rest of EAC Partner States between 1991 and 2015 (Figure 14).

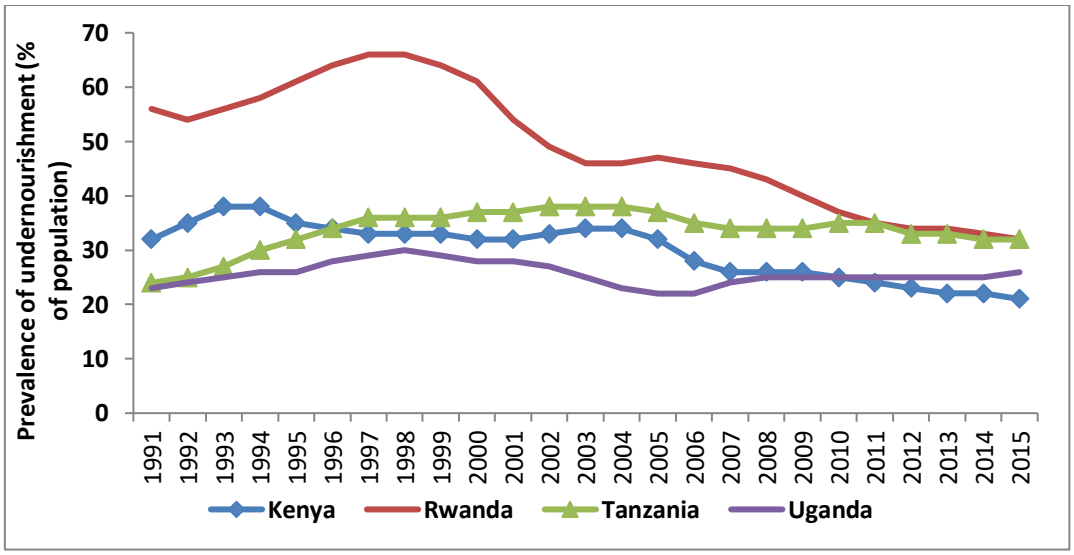

Figure 14: Prevalence of Undernourishment (per cent of population), 1991-2015
Source: ReSAKSS, 2017. http://www.resakss.org/

Despite these gains against nutritional challenges, the populations suffering from malnutrition is still worrying. Persisted malnutrition is propped by among others, wide spread poverty and illnesses; lack of coherent social protection legislations; and,

unpredictability of public support and transfers to households in need of food relief especially during emergencies compound the nutritional challenge. In addition, there is an increasing prevalence in the region of life style related/non-communicable diseases such as cancer, diabetes and coronary heart disease (CHD). Others include retrogressive stereotypes and threats exclude such groups from mainstream economic activities and gainful employment thus reducing their access to, and utilization of, food.

2.6 Value addition in agriculture products

Value addition in agricultural commodities has the potential to foster economic growth in the EAC. However, this potential remains largely unrealized as the region lags behind the rest of Africa in value addition. Except for Kenya and Tanzania where agriculture value added[23] tracks the average for Africa and increased significantly between 1991 and 2015, agriculture value added in the rest of EAC Partner States remained relatively constant and way below the average value added in Africa (Figure 15). Several factors among them enacting policies that improve value chain efficiency (e.g. by promoting competitiveness); improving physical infrastructure (e.g. transport, storage, electricity and refrigeration), and product differentiation (e.g. by labeling, branding, promotion and geographic indexing) enhance the efficiency with which, value addition is done.

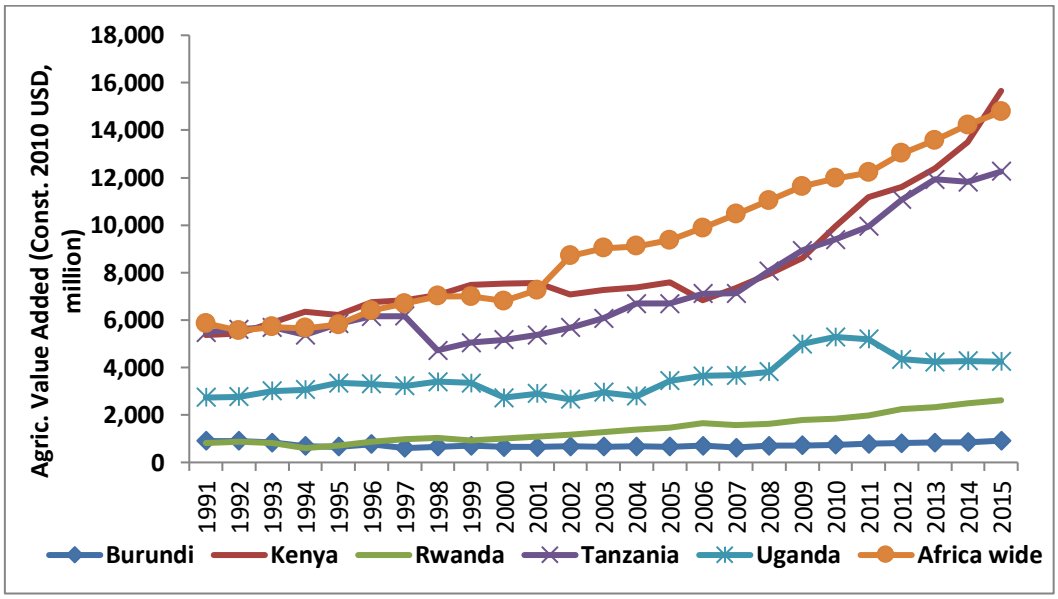

Figure 15: Agriculture value added (constant 2010 USD, million)
Source: ReSAKSS, 2017. **http://www.resakss.org/**

[23] The most common forms of value addition involve changing the physical state innovatively by use of technology, for example, through agro-processing to increase shelf life of the commodity; packaging; branding; and various techniques of marketing and post-sales service provision. However, any innovations (including institutional and administrative changes) and policy reforms that promote improvements in market access, competitiveness, profitability and efficient utilization of factors of production (land, labour, financial capital and technical skills) also constitute value addition.

2.7 On-going Interventions and Policy Frameworks

2.7.1 Efforts to address poverty and food insecurity

At the national levels, poverty is being addressed broadly through poverty reduction strategies[24] (espoused in poverty reduction strategy papers) that have been largely donor driven and forming the overarching policy strategy. Implementation remains patchy and is often disrupted by emergencies (e.g. global food crises, civil strife, terrorism and extreme weather conditions) and capacity and coordination constraints. in all EAC Partner States problems of rural poverty and food insecurity are being addressed through implementation of input subsidy programs aiming at increasing agricultural productivity and household incomes as well as by short term programs among others Tanzania's *Kilimo Kwanza*, Kenya's *Njaa Marufuku*, school feeding, food for work, vitamin fortification. In the medium and long term, strategies will have to place more emphasis on exploiting the region's irrigation potential in order to avoid over-reliance on rain-fed production that tends to increased risks in fertilizer use.

At the regional level, the MDG1 formed the main poverty reduction thrust but like in the overall Sub-Saharan Africa, all the countries in EAC were not able to achieve the goal of halving hunger by 2015 (United Nations, 2015[25]). The NEPAD/CAADP program, on the other hand, aims at increasing public budgetary allocation to agriculture in order to increase the sector's GDP growth and thus have sustainable impacts on poverty. The CAADP goals have since been reemphasized in the Malabo declaration in 2014 and the agenda offers a ray of hope for the poor (especially the rural poor and marginalized). However, countries are experiencing various implementation challenges made worse by a serious dearth of data needed for review of achievements and strides made in poverty reduction.

2.7.2 Improving regional trade

Regional markets offer opportunities for exploiting economies of scale in production and hence specialization and economic efficiency through comparative advantage. In the case of food crops and livestock, market expansion also acts as a means for attaining regional food security by ensuring that scarce resources are optimally allocated in accordance with prevailing regional opportunity costs. In practice, however, EAC faces numerous challenges that prevent its agricultural markets from functioning optimally, partly due to the unique nature of agricultural products and partly because of persistent retrogressive trade policies, imperfect markets and the poor state of the region's infrastructure.

With the support of development partners, EAC has been actively pursuing a regional approach to food security by promoting infrastructure development and harmonized policies that will enable free flow of food staples from surplus to deficit areas driven primarily by price incentives and market forces. The EAC has already produced a food and nutrition

[24] National Strategy for Growth and Poverty Reduction, Tanzania (*MKUKUTA*), *GIRINKA (one dairy cow per poor family), UBUDEHE*(Rwanda)
[25] United Nations, 2015. The Millenium Development Goals Report, 2015. New York

policy document (RFSNP, 2014) that targets persistent challenges that require a regional approach, for example: crop and trans-boundary livestock diseases, limited national research and breeding capacities, knowledge sharing and establishment of databases, early warning and forecasting systems.

The gradual move towards fully functioning customs unions for EAC promises to minimize tariff trade barriers. However, the implementation of a customs union has resulted in rise of non-tariff barriers relating largely to addressing among others sanitary and phyto-sanitary (SPS), standards, vehicle axle load and weight limits, insurance requirements, trade administration, suspended taxes and rules of origin. In addition, some list of commodities are regarded as sensitive and often presented for derogation, slows down implementation of regional integration protocols must be reviewed.

2.7.3 Building institutional capacity

Regional integration offers opportunities for the private sector but experience thus far suggests that progress is being hindered by weaknesses in institutional capacity and lack of clear division of roles among key stakeholders including non-state actors. There is a demonstrated need for governments to increase budgetary allocations to catalyze research and innovations for agricultural transformation (to at least 2 percent of the national budgets as envisaged in the Maputo Declaration), to help build capacity and to staff public agricultural institutions at thresholds able to tackle emerging diverse policy and technical issues. Where government allocations have fallen behind resource needs, development partners have intervened but this has implications on priority setting, project relevance and sustainability. Rwanda and Uganda are some of the EAC countries where donor support has been quite dominant and concerns have been raised regarding sustainability of the donor supported programs such as input subsidies and support to building of institutional capacity for increased private sector participation in regional trade.

In the EAC region there are private sector initiatives that play a critical role in provision of agricultural services relating to extension, veterinary services and artificial insemination, input distribution, credit and marketing. In order to provide these services effectively, the private sector institutions and farmer organizations need strengthening, enabling environment and private-public partnerships; the latter are already in fledgling stages in countries like Kenya. The main stakeholder groups include the Eastern African Grain Council (EAGC) and Horticultural Council of Africa (HCA), East Africa Farmers' Federation (EAFF), East and South Africa Dairy Association (ESADA), and East African Business Council (EABC). Trans-boundary livestock issues, mainly diseases and general animal health, are currently handled by African Union Inter-African Bureau of Animal Resources (AU-IBAR) and Food and Agricultural Organization Emergency Centre for Trans-boundary Animal Diseases (FAO-ECTAD). The EAC has finalized the formulation of a strategic and legislative framework for control of trans-boundary diseases and zoonosis which should go a long way in guiding their management. The challenge remains the capacity for enforcement that will ensure this menace is effectively put to rest.

CHAPTER 3: CONSTRAINTS TO EAC AGRICULTURAL DEVELOPMENT

The agriculture sector suffered a long stretch of historical neglect and EAC Partner States, like many other countries in Sub-Sahara Africa, still lag behind in institutionalizing its policy commitments to the sector. In the backdrop of important emerging trends such as rapid population growth, climate change, declining soil fertility, water scarcity and the volatility of food prices, policymakers are now increasingly recognizing that investment in agriculture is essential not just for increasing the welfare of rural households but also gaining a larger share of the global market for agricultural products. Despite the Maputo Declaration and realignment of the EAC Partner States' agricultural development strategies to CAADP, the sector continues to face daunting internal and external constraints. Among others, the most pronounced challenges relate to low expenditures on agricultural research, poor infrastructure, low adoption of improved agricultural technologies, poor policy environment, poor coordination and negative impacts of climatic change.

3.1 Low expenditures on agricultural research and development

Agricultural research serves as the foundation of agricultural growth, development and transformation in any country or region. It fosters innovation and productivity in agriculture (Alston, 2000)[26] and relieves pressure on natural resources as it leads to efficient utilization of resource leading to better yields and returns. It informs policy makers and funding agencies on the most appropriate agricultural enterprises, best land use practices as well as enabling the transfer to farmers. Moreover, agricultural research orients agricultural technology towards changing societal needs. Economically, increased production in agriculture leads to an outward shift in supply, resulting to consumer and producer surpluses.

The relationship between agricultural research and agricultural productivity is positive. Evidence shows that doubling research investments in SSA can reduce poverty by 9 percent annually (Alene and Coulibaly, 2009)[27]. Further, investments in agricultural research have been found to lead to increased agricultural productivity, reduction of poverty, food insecurity and hunger (Abdoulaye, et al., 2013)[28]. A one (1) percent growth in crop yields has the likelihood of reducing poverty (people living on less than US$1 per day) by 0.6 percent (Thirtle et al. 2003)[29]. Public investments in agricultural research yields 30-43

[26] Alston, J. M., Chan-Kang, C., Marra, M.C., Pardey, P.G. and Wyatt, T.J., 2000. A meta-analysis of rates of return to agricultural Research and Development. Research Report 113: International Food Policy Research Institute, Washington, D.C.

[27] Alene and Coulibaly, 2009. The Impact of Agricultural Research on Productivity and Poverty in Sub-Saharan Africa. *Food Policy, 34:*198-209.

[28] Abdoulaye Papa Seck, Afiavi Agboh-Noameshie, Aliou Diagne, Ibrahim Bamba, 2013. Repackaging Agricultural Research for Greater Impact on Agricultural Growth in Africa. *Journal of Food Security.*; 1(2):30-41. doi: 10.12691/jfs-1-2-4

[29] Thirtle *et al.*, (2003). Thirtle C., Lin, L. and Piesse, J. 2003. The impact of research-led agricultural productivity growth on poverty reduction in Africa, Asia and Latin America. World Development, 31 (12), 1959-1976.

percent return on investment, a 5-10 percent higher than other public investments with these gains widely spread among the majority of poor and low-income countries with significant impacts on poverty, under-nutrition and resilience (Pardey et al, 2016)[30]. There is ample evidence showing that the spread of modern staple crop varieties led to a 9 percent decrease in all causes of infant mortality in 38 developing countries.

Several studies conducted to evaluate the impact of agricultural research in Africa widely demonstrated the positive impact of agricultural growth on poverty reduction and food security with a major component of this growth being driven by investment in agricultural research (Evenson, 2001[31], Evenson, et al,. 2003[32]; Pinstrup-Andersen, 2001[33]; Pardey, & Beintema, 2001)[34]. In West and Central Africa, maize research through better varieties and diffusion of modern maize varieties lifted more than one million people out of poverty within three decades starting from 1971 (Alene et al., 2009)[35]. Indeed, agricultural economists in West Africa have shown that an investment of US$ 1 in maize research has the possibility of US$ 21 in return. In East and Southern Africa, gains have been recorded over improved common bean varieties developed which strengthened food security in the region. In livestock, vaccine development against livestock diseases has shown effectiveness in increasing livestock production. Through research and advocacy, small-scale marketing of milk in Kenya has been decriminalized creating producer and consumer benefits estimated to a value of US$ 44-283 million (CGIAR, 2011)[36].

In the East Africa region where agriculture is the key economic driver, the impact of agricultural research on agricultural productivity, poverty alleviation and reducing hunger cannot be overemphasized. Investments in agriculture, especially with regard to research and development (R&D) have been on a decline, with countries failing to allocate the 2% of AgGDP to R&D as per the Malabo Declaration. With the exception of Uganda, the rest of the countries in the Horn of Africa have been allocating less than 3% of their agricultural GDP

The authors found that growth in agricultural productivity has substantial impact on poverty. They also show that investment in agricultural R&D has had a substantial impact on poverty reduction in Africa and Asia, as well as paying for itself by being an extremely profitable investment.

[30] Pardey, Philip G., Andrade, Robert S. Hurley, Terrance M., Rao, Xudong., Liebenberg, Frikkie G. (2016). Returns to food and agricultural R&D investments in Sub-Saharan Africa, 1975–2014. Food Policy 65 (1-8) https://doi.org/10.1016/j.foodpol.2016.09.009

[31] Evenson, R. E. (2001). Economic impacts of agricultural research and extension. .In: B. L. Gardner and G. C. Rausser, eds. Handbook of Agricultural Economics. Vol. 1A Amsterdam: Elsevier Science 819-836.

[32] Evenson, R. E. and Gollin, D. Eds (2003). Crop variety improvement and its effect on productivity: the impact of International Agricultural Research. Wallingford, UK: CABI

[33] Pinstrup-Andersen, P. 2001. Is research a global public good? Agriculture and Rural Development, 8:3-5

[34] Pardey, P. G. and Beintema, N. M. 2001. Slow magic: Agricultural Research and Development a century after Mendel. Food Policy Report. Washington, D.C: International Food Policy Research Institute.

[35] Alene, A.D., A. Menkir, S. Ajala, B. Badu-Apraku, A. Olanrewaju, V. Manyong and A. Ndiaye (2009). The economic and poverty impacts of maize research in West and Central Africa. Agricultural Economics 40: 535-550.

[36] CGIAR; 2011. Forty Findings on the Impacts of CGIAR Research 1971-2011. http://www.cgiar.org/...cgiar.../Forty-findings-CGIAR.http://www.cgiar.org/.../www-cgiar-org-monthlystory-septem [Assessed 4 April 2012]

(AgGDP) to R&D. The decline of investments towards agricultural production is attributed to a decline in real prices of agricultural products that led to diversion of capital and labor from agricultural ventures in the past decade.

Agricultural R&D is characterized by marked dependence on public support that accounts for over 75 percent of the total expenditure (Beintema and Stads, 2011)[37]. Although public funding increased towards R&D in a few countries including Kenya, Tanzania and Uganda, it stagnated but was also too low to make any sizable impacts on rural development and poverty reduction (Ariga, 2011)[38]. In 2014, Kenya and Uganda, respectively, spent US$ 274 and US$156 million accounting for 0.8 and 1 percent of Agricultural GDP on research (Figure 16).

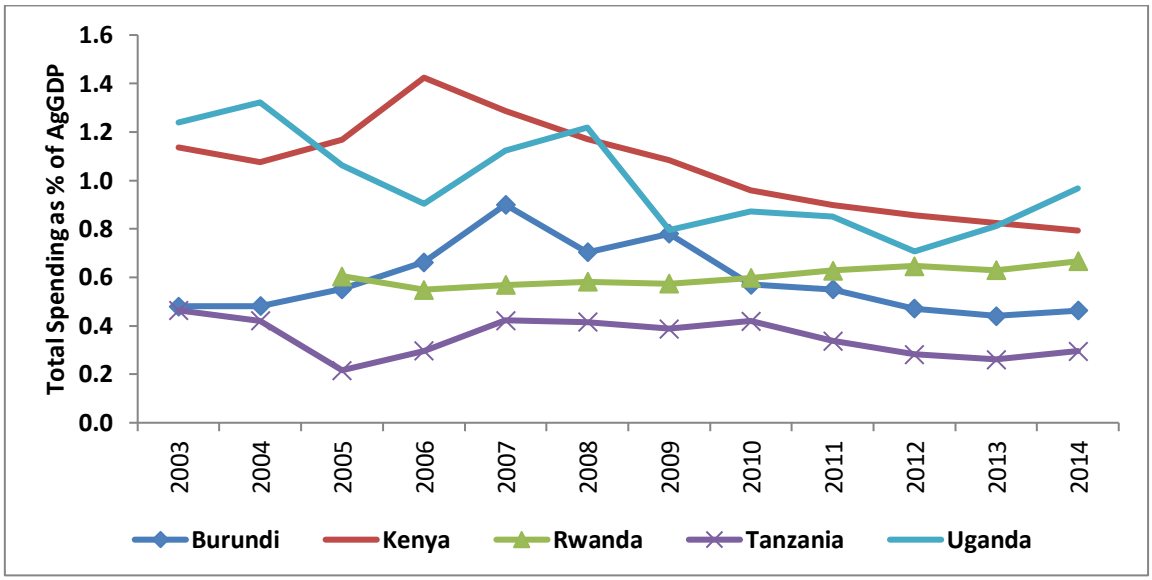

Figure 16: Agriculture Research Spending total (as a share of AgGDP)
Source: ASTI (Agricultural Science and Technology Indicators). ASTI database - International Food Policy Research Institute (IFPRI)

3.2 Low investments in agricultural infrastructure

The EAC Partner States are characterized by poor infrastructure compared to the developed economies. The region, like the rest of Sub-Sahara Africa, has lagged behind in the development of roads. Only 15 percent of roads in Sub-Sahara Africa are paved, the lowest compared to the rest of the world (Ousman and Lukoma, 2011)[39]. Yet, roads and other infrastructure are critical in agricultural development. Infrastructure has a catalytic effect on

[37] Beintema, N. M. and Stads. G. J., 2011. African agricultural R&D in the New Millennium; progress for some, challenges for many; Food policy report of IFPRI (Washington DC) and ASTI (Rome, Italy); 44p
[38] Ariga, J. (2011). Encouraging private investment in agricultural research: Myth or necessity for developing countries. Knowledge for Development.
[39] Ousman, G and Lukoma, A. 2011. Infrastructure and Agricultural Productivity in Africa. African Development Bank Market Brief, 23 November 2011

agricultural production and productivity through increased output per capita and output per unit of land (Ousman and Lukoma, 2011). Good infrastructure enables access to input and output markets and integration of deficit and surplus agricultural production zones (Andersen and Shimokawa, 2006[40]).

Production of export crops including coffee, tea, tobacco and cotton is estimated to increase between 30 and 40 percent with increased access to ports (Limi et al., 2015)[41]. Better roads promote adoption of high yielding varieties and fertilizer leading to an increase in yields and market participation (Kiprono and Matsumoto, 2014)[42]. The poor state of the EAC rural infrastructure constitutes the single most limiting factor to intra-regional trade and economic development. Underdevelopment of infrastructure (power, transport, storage, irrigation, marketing infrastructure and telecommunication) partly accounts for the high transactions costs of doing business in the region. The density of paved roads per 1 million inhabitants is quite low and stands at an average of only 193 km for EAC but there is considerable variation among the Partner States: Kenya has the highest density at 302 km per one million people while Uganda has the least with 103 km (Table 8).

Table 8: Paved roads (km) per one million people

	Burundi	Tanzania	Uganda	Kenya	Rwanda	East Africa
Paved roads km - 2014*	1,438	8,793	3,565	13,000	1,217	28,013
Pop 2014 (million)**	9.7	47.2	34.6	43	10.9	145.4
km/million people	148	186	103	302	112	193

* World Bank Statistics 2017 (paved roads km)
**FAOSTAT 2017 (population estimates)

The main trade (transit) corridors in the eastern seaboard of the region that currently originate from the ports of Djibouti, Mombasa and Dar-es-Salaam constitute an economic life line to the land locked member countries. There are two broad policy concerns along these transit routes. First, is the need for strategies to increase investments for improving deteriorating and destroyed physical infrastructure. Secondly, enacting of policies and regulations aiming at the 'soft' aspects, namely: building of capacities of regulatory

[40] Andersen, P and Shimokawa, S. 2006. Rural Infrastructure and Agricultural Development. Paper prepared for presentation at the Annual Bank Conference on Development Economics, Tokyo, Japan, May 29-30, 2006.
[41] Limi, A., You, Liangzhi, Ulrike Wood-Sichra, and R. M. Humphrey (2015). Agriculture Production and Transport Infrastructure in East Africa: An Application of Spatial Autoregression. World Bank Policy Research Working Paper 7281.
[42] Kiprono, P. and T. Matsumoto (2014). Roads and Farming: The Effect of Infrastructure Improvement on Agricultural Input Use, Farm Productivity and Market Participation in Kenya. Paper Presented at CSAE Conference 2014: Economic Development in Africa, The University of Oxford.

institutions; promoting policy harmonization to minimize costly competition between alternative modes of transport (e.g. between rail and road); and, harmonizing regulations addressing issues to do with insurance, axle load limits and compliance with SPS requirements. These 'soft' aspects optimize the utilization of the physical infrastructure along the transit corridors.

With the exception of Kenya, the rest of the EAC Partner States lag behind compared to the Sub Saharan comparators in terms of telecommunication (notably, mobile subscription and internet use). Figure 17 shows that levels of mobile subscription and internet use in EAC Partner States are quite low compared to those in other parts of the world, suggesting the difficulties faced by agricultural value chains in accessing market information.

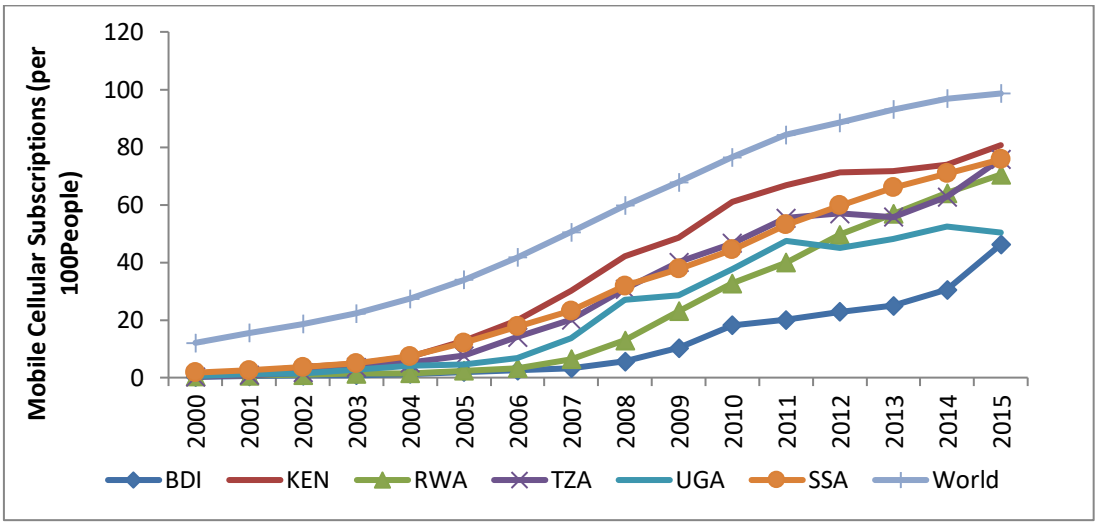

Figure 17: Mobile subscriptions (per 100 persons)
Source: FAOSTAT

3.3 Low use of improved agricultural technologies[43]

Improved agricultural technologies comprise mainly fertilizer, improved seed and breeds, quality feed, agro-chemicals, technologies for minimizing post-harvest loses, mitigating climate change and variability, value addition, pest and disease control and irrigation. All the EAC Partner States can be classified as low fertilizer users. Consumption is high for the lower middle and high income countries which consume 104 Kg/ha and 126 Kg/ha, respectively, while world annual consumption of fertilizers is estimated at an average of 123 Kg/ha (Figure 18).

Use of fertilizer in EAC Partner States averages at only 10 kg/ha and falls far below the average for the low fertilizer use countries. The region's economic potential for fertilizer use, largely determined by the prevailing fertilizer responses and prices, is always much larger than actual use. With the exception of Kenya (20 – 40 kg/ha), all the other countries in EAC

[43] There are various reasons for low adoption of high yielding technologies; see for example, ASARECA 2013- *Why Low Adoption of Agricultural Technologies in Eastern and Central Africa*?

apply no more than 20 kg of fertilizer per hectare. Data shows that fertilizer use in East Asian region is almost six times more than in East African countries. In addition to low fertilizer use, pesticide use also lags far behind the East Asia, UK and USA. Pesticide use in EAC partner states is less than 0.3 kg/ha compared to 6 kg/ha in East Asia, with Korea and Japan averaging 6.6 kg/ha and 12.0 kg/ha, respectively.

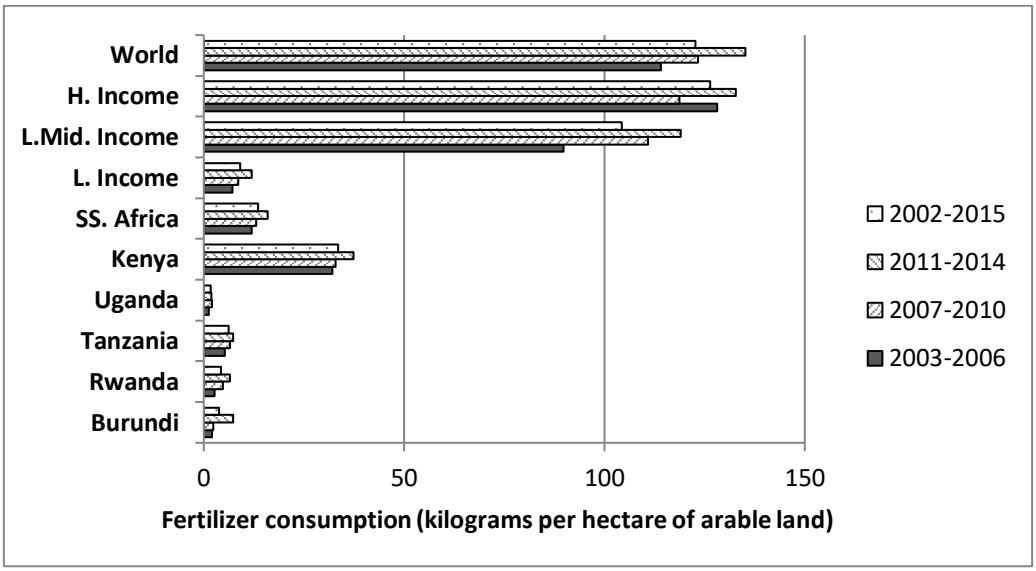

Figure 18: Fertilizer Consumption (Kilograms per hectare of arable land)
Source: FAOSTAT

Fertilizer consumption has the positive effect of increasing yields (Figure 19) and it is evident that cereal yields are high in countries such as UK and USA where fertilizer use is high (Table 9**Error! Reference source not found.**). In the EAC Partner States, cereal yields per hectare remained circa 1.5 tons/ha with 10 Kg/ha fertilizer consumption compared to cereal yields of 2.8 tons/ha with fertilizer application rates of 104 Kg/ha in lower middle income countries.

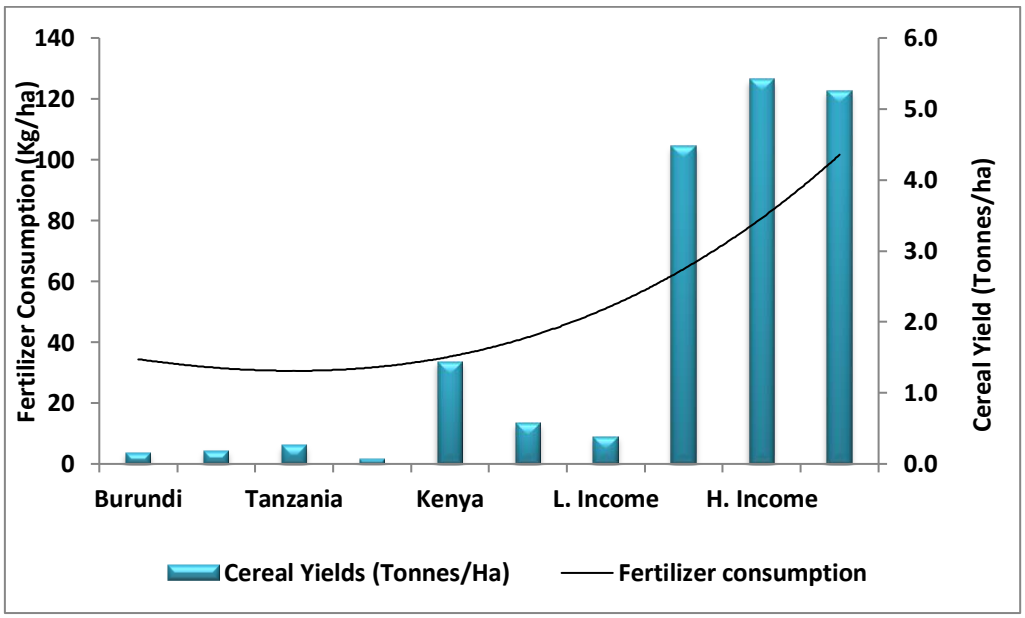

Figure 19: Fertilizer consumption and cereal yields (2002-2015)
Source: FAOSTAT

Fertilizer and pesticide application rates correlate with area under irrigation and, in this respect again, EAC countries significantly lag behind their comparators in Asia. About 75 percent of crop production in all EAC partner states relies on rainfall thus increasing risks in adoption of chemical fertilizers and pesticides.

Although the solution to the dilemma of low fertilizer consumption may lie in exploiting the region's available irrigation potential, there are inherent socio-economic and environmental challenges. These include: prohibitive investment costs for large scale irrigation projects; lack of technical know-how among smallholder farmers; low value-cost ratios for the irrigated crops, especially those whose market prices are government regulated; competing uses for available water and land resources; and, undesirable environmental impacts.

Table 9: Cereal Yields for EAC Partner States (Kg/ha) [44]

Partner State	2003-2006	2007-2010	2011-2014	2002-2015
Burundi	1,309	1,275	1,195	1,264
Kenya	1,673	1,536	1,637	1,606
Rwanda	1,056	1,487	2,089	1,504
Tanzania	1,164	1,380	1,450	1,375
Uganda	1,561	1,900	2,031	1,816
Sub-Saharan Africa	1,173	1,302	1,376	1,272
Low income	1,175	1,308	1,430	1,293
Lower middle income	2,569	2,828	3,097	2,800
High income	4,918	5,215	5,473	5,147
World	3,260	3,513	3,756	3,476

Source: FAOSTAT

[44] Cereals include wheat, rice, maize, barley, oats, rye, millet, sorghum, buckwheat, and mixed grains and yield is defined as kilograms per hectare of harvested land. Production data on cereals relate to crops harvested for dry grain only. Cereal crops harvested for hay or harvested green for food, feed, or silage and those used for grazing are excluded. The FAO allocates production data to the calendar year in which the bulk of the harvest took place. Most of a crop harvested near the end of a year will be used in the following year.

3.4 Policy related challenges and persistence of non-tariff barriers to trade

3.4.1 Slow policy reform and implementation

All EAC countries, to a large extent, have adopted policies that aim at reorienting their economies towards market regimes with varying degrees of commitment and outcome ranging from partial and intermittent liberalization to more comprehensive economic reforms. These policy reforms have brought some progress in economic growth, but, in some cases, the agriculture sectors suffered as governments withdrew from provision of basic services such as extension, credit and marketing. Similarly, the private sector players are yet to benefit from the full potential of markets under the regional economic corporations because of underperformance of markets leading to low returns on investments.

Although tariffs have been drastically reduced under the EAC Customs Union (EAC/CU) to the extent of posing minimal impediments to agricultural trade, a number of commodities such as sugar, seeds, milk, eggs, wheat, and rice are still subject to protection under various safeguard measures. The administration of the safeguard measures is usually ad-hoc thus creating unnecessary risks and uncertainties for the private sector and may jeopardize food security and value chains in other partner states, in addition to their potential to encourage rent seeking behavior among public officials. Protectionist trade policies also cause price inefficiencies leading to economic inefficiencies as well as increasing inequalities in the domestic and regional markets. The rationale of protecting domestic producers (whether for employment or strategic reasons) is hardly justifiable, especially if the underlying structural and policy related causes of inefficiency are not addressed as is usually the case.

Moreover, EAC Partner States have relatively weak governance structures and the quality of regulatory environment is weak compared to countries with established democracies such as United Kingdom and United States of America (Table 10).

Table 10: Governance Indicators in the EAC

Partner State	Government Effectiveness		Political Stability		Regulatory quality	
	2010	2015	2010	2015	2010	2015
Burundi	-1.10*	-1.15	-1.59	-1.73	-1.10	-0.71
Kenya	-0.54	-0.29	-1.17	-1.29	-0.07	-0.29
Rwanda	-0.05	-0.04	-0.20	-0.08	-0.18	0.25
Tanzania	-0.58	-0.60	-0.02	-0.45	-0.41	-0.36
Uganda	-0.52	-0.48	-1.00	-0.86	-0.15	-0.24
United Kingdom	1.56	1.74	0.40	0.56	1.74	1.86
United States	1.55	1.46	0.43	0.70	1.44	1.30

Source: WGI (World Governance Indicators)

*Estimates range from approximately -2.5 (weak) to 2.5 (strong)

3.4.2 Non-tariff trade restrictions

Most non-tariff barriers (NTBs), both formal and informal, represent a diverse collection of protectionist devices whose only common denominator are their amenability to use by governments in much more subtle, dynamic, pervasive and elusive ways than tariffs. NTBs have negative effects on government revenue as commodity flows go through parallel market channels. Similarly, some government practices such as market subsidies lead to market distortions which attract reciprocal NTB responses from trading partners. A large number of formal NTBs are directly traceable to government policies and other discriminatory practices aimed at protecting domestic producers (e.g. export subsidies, legislated monopolies, public pronouncements urging consumers to buy locally made products and discriminatory procurement requirements).

A review by COMESA (2014)[45] states that their on-line reporting system had a total of 469 actionable NTBs; about 80 percent of the NTBs had fortunately been resolved. Of the unresolved NTBs, about 40 percent fell in the category of customs and administrative entry procedures which comprises, *inter alia*: incorrect tariff classification; non-acceptance of certificates of trade and documentation; limited and uncoordinated customs working hours; and different interpretation of rules of origin or non-acceptance of rules of origin certificates (*Ibid*).

Health and safety regulations required for the hygienic production and packaging of imported products and labeling requirements showing origin and contents have in the past been treated differently under the Technical Barriers to Trade (TBT) category. Such formal regulations serve legitimate purposes but some are often thinly veiled disguises for restricting imports. The WTO treats all non-tariff barriers to trade as TBTs; except Sanitary and Phytosanitary (SPS) regulations. Barriers associated with SPS regulations are not so pronounced in agricultural trade in the EAC region, suggesting that they are being applied appropriately, but their administration often creates costly bureaucracies that hamper official trade.

There are still several informal trade barriers in EAC that hinder cross border transactions through their high implicit costs. Such barriers are defined broadly to include behavior that is not explicit official policy but which is either practiced by public officials with the intent of restricting trade, or is a restrictive practice against other market participants that is knowingly permitted to exist despite government's capacity to stop it. Practices and behavior falling under this category include: arbitrariness and discrimination of non-local suppliers; corruption; inadequate information and lack of clarity in guidelines and procedures; long and complex documentation requirements; weak institutional capacity (under funding and

[45] COMESA (2014). Key issues in regional integration; Volume III

inefficiency) and poor infrastructure (e.g. lack of equipment, and low staff proficiency in computing and use of telecommunication).

The prevalence of trade barriers diverts trade to informal channels. FEWSNET (2015) illustrated that agricultural trade in the region is predominantly informal. Informal trade increases the cost of doing business and reduces returns for most value chain actors. Furthermore, it makes it harder to implement legitimate measures such as quality and safety checks, and thus increasing food safety risks.

3.5 Poor coordination of response to emergencies and emerging issues

The 2008 food crisis was a real test of how African countries respond to external shocks. When prices suddenly edged up in 2007, it was assumed that African farmers would take advantage, and to some extent, for Sub-Sahara Africa as a whole, they did and agricultural productivity in 2008-2009 grew faster than population. But while rising food prices offered incentives to producers, they also caused havoc to consumers (through welfare losses) and to producers who were net food buyers. The impact of this on EAC countries depended on factors such as price transmission from the borders (partly a function of policies adopted and transport infrastructure), industry composition of GDP (role of the affected commodities in the economy versus receipts from export goods), and safety nets or social protection measures taken by some governments (Abbott and Battisti, 2009)[46].

Most of the EAC countries, by virtue of being net food importers, reduced import taxes during the food crisis in order to cushion consumers while a few (e.g. Tanzania) applied export restrictions which in turn exacerbated the supply shortages in neighboring countries, notably Kenya (ASARECA, 2008[47]; FAO/GIEWS, 2008[48]; Ackello-Ogutu, 2011[49]). Institutional capacity weaknesses, lack of proper channels for information sharing and, to some extent, political mistrust, typically characterize the region's response to external shocks and natural disasters that disrupt regional food distribution systems.

[46] Abbott, P. and A. B. Battisti (2009). Recent global food price shocks: causes, consequences and lessons for African governments and donors. AERC Biannual Conference on Global Food Price Shocks: Causes, Consequences and Policy Options in Africa. Mombasa, Kenya, May 30, 2009

[47] ASARECA (Association for Strengthening Agricultural Research in Eastern and Central Africa) (2008). *Responding to the food price crisis in Eastern and Southern Africa: Policy options for national and regional action*. ASARECA, Entebbe

[48] FAO-GIEWS (Global Information and Early Warning System) (2008). Policy measures taken by governments to reduce the impact of soaring prices. Web resource: http://www.fao.org/giews/english/policy/index.asphttp://www.fao.org/giews/english/policy/index.asphttp://www.fao.org/giews/english/policy/index.aspWeb resource: http://www.fao.org/giews/english/policy/index.asp

[49] Ackello-Ogutu, C. (2011). Managing Food Security Implications of Food Price Shocks in Africa: Journal of African Economies, Vol. 20, AERC Supplement 1, pp. i100–i141

3.6. Vulnerability to impacts of climate change and variability

Climatic change is closely related to livelihoods in EAC Partner States because the majority of households depend on rain-fed agriculture (EAC, 2009[50]). The effects of climatic change and variability are far reaching and besides food security effects, the changes affect other economic drivers to the extent of crumbling the agri-business sector which relies on raw materials from agriculture. Droughts create a more severe risk compared to floods. Evidence shows that a decline in rainfall leads to a decline in agricultural GDP with ensuing price volatility on food and other related items. Apart from direct effects that climate change has on crop yields due to changes in precipitation pattern, it also indirectly affects crop yields by increasing the water stress on irrigated crops (Nelson *et al,* 2009)[51].

In EAC, the pastoral livestock production systems, and hence pastoralist communities, are generally viewed to be the most vulnerable to climate change impacts (particularly in the large swathes of Kenya and Tanzania). However, other medium and high potential agricultural areas are likely to suffer and thus require pre-emptive policy strategies, especially those targeting environmental conservation and use of appropriate technologies and crop/livestock husbandry methods. Due to the close links the EAC economies have, vulnerabilities in one country are easily transmitted to other countries, implying that policy responses to impacts of climate change and mitigation will be best addressed through enhanced regional collaboration and by investments that cut across the borders.

[50] EAC, 2009. Economic Impact of Climate Change in the East African Community (EAC). Final Report

[51] Nelson, G. C., M. Rosegrant, J. Koo, R. Robertson, T. Sulser, T. Zhu, S. Msangi, C. Ringler, A. Palazzo, M. Batka, M. Magalhaes, D. (2009). Climate Change Impact on Agriculture and Costs of Adaptation

CHAPTER 4: PRIORITY INVESTMENTS FOR SUSTAINED AGRICULTURAL TRANSFORMATION IN EAC

4.1 Structure of EAC CAADP Results Framework

The EAC CAADP Results Framework (Table 11) combines a logical flow of 3 levels of results elaborating the 1) *why*; 2) *what*; and 3) *how* of consolidating and deepening EAC CAADP implementation. The level 1 (*why*) summarizes top-level results aimed at achieving real social and economic transformation of the East African region. Level 2 (*what*) is reflected in intermediate-level results/outcomes that are required in terms of agricultural productivity, competitiveness and inclusive growth. Level 3 (*how*) describes the combination of various capabilities needed to accelerate agricultural growth and broaden its impact[52]. The Results Framework (RF) also shows how the proposed EAC RAIP investment thematic areas and interventions match up with the Malabo Commitments.

In this regard, the RF is an integral part of regional and national CAADP implementation processes. The EAC Secretariat will take lead in coordination and national level players and stakeholders will shoulder the key roles in its implementation. The Framework will be useful in connecting within and across levels, sectors and thematic areas, as well as for state and non-state institutions, including civil society, private sector organizations and development partners.

The RF provides guidance at the level of: a) planning (strategy, program design and budgeting) before programs and projects are implemented; and, b) monitoring and evaluation (M&E) and Mutual Accountability after investments are made in programs and projects. The EAC and its Partner States will be guided by this RF to work backwards from the strategic objectives by offering a systematic approach to develop, plan and implement investments. This RF will also foster alignment and harmonization of initiatives that are geared at developing the EAC agriculture sector.

The Heads of State and Government are committed to a systematic regular review process of the progress made in implementing the provisions of the Malabo Declaration. To this end, this RF is earmarked as the tool that will be used in tracking, monitoring and reporting on the progress in meeting the Malabo Commitments. The RF will, in compliance with the principle of subsidiarity, help to better organize implementation support and ensure the relevance and effectiveness of this support. The Framework will foster regional agricultural development policies, strategies and programs that support optimal national solutions. It will also provide the scope to enhance collaboration and partnerships with local and international partners including state and non-state actors. It will guide alignment of multilateral initiatives as well as ODA and FDI partnerships with the East African Community agriculture vision and transformation agenda.

[52] Following this RAIP, the EAC will develop an elaborate implementation/business plan for actualizing the outcomes

Table 11: EAC CAADP Results Framework

Impacts to which agriculture contributes	***Level 1- Agriculture Contribution to Economic Growth and Inclusive Development***			
	1.1 Wealth creation (TA.1, TA.3)	1.2 Food and Nutrition Security (TA 2)	1.3 Economic opportunities, poverty reduction (TA.1, TA.3)	1.4 Resilience and Sustainability (TA 4)
Changes in EAC agriculture resulting from the RAIP implementation support	***Level 2: Agriculture Transformation and Sustained Inclusive Agriculture Growth***			
	2.1 Increased agriculture production and productivity (TA.1, TA.3)	2.2 Increasing regional trade and enhanced access to markets (TA. 1, TA.3)	2.3 Expanded local agro-industry and value chain development inclusive of women and youth (TA.3)	2.4 Increased resilience of livelihoods and improved management of risks in the agriculture sector (TA1 and TA 4)	2.5 Improved management of natural resources for sustainable agriculture (TA 4)
OUTCOMES	***Level 3: Strengthen Institutional and Systemic capacity to deliver results***			
Added value of RAIP support to institutional transformation and systemic capacities	Formulation and implementation of conducive policy and regulatory frameworks	Systemic capacity building for effective and accountable institutions	Improved and enhanced access to technologies, knowledge and information	Increased public and private investment in agriculture	Provide for leadership that guarantees there is a conducive and stable policy environment including mutual accountability to actions and results

Source: Adopted from Malabo CAADP Results Framework

4.2 Priority Investment Thematic Areas

This RAIP focuses on five thematic areas which expound on strategies for unlocking the growth potential of the region's commodities and deepening intra-regional trade and competitiveness in the global markets. These include catalytic investments notably aimed at increasing agricultural productivity, enhancing food utilization, promoting agribusiness, enhancing sustainable natural resource use and strengthening capacities of agricultural institutions.

4.2.1 Increasing regional agricultural production and food supply

This thematic priority is premised on the physical aspect of agricultural production. Supply of agricultural commodities is to be increased through interventions targeting key factors of production: efficient and sustainable use of natural resources, notably land and water; labor; and, innovative mechanisms for financing agricultural sector. It is assumed that the national initiatives aimed at shifting the agriculture production frontier (through increased innovation and access to new technologies) will be amplified through partnerships with public and private sector within and outside the region. The strategy for increasing regional supply of agricultural commodities will therefore focus principally on the following areas where challenges have persisted and where solutions lie not just on national interventions but also on regional cooperation and policy harmonization.

4.2.1.1 Strengthen capacity of regional agricultural research and extension systems

Constraints/Challenge being addressed: Government funding to NARIs constitutes more than 70 percent of their budget[53]. Much of this funding is expended on personal emoluments and maintenance leaving very little for research. Disparities in human resource and financial allocations among EAC Partner States, further reduces their attractiveness for non-government funding. This derives mainly from fragmentation and duplication of research effort across agro-ecological zones that cut across borders. Consequently, comparative strengths are not exploited and quality assurance and peer review is often through a limited base of national scientists. The advantages of cross border collaboration in agricultural research are amply demonstrated by the case of orange flesh potato research in Uganda that is now used widely having been pioneered in Uganda and Mozambique. Other examples include EAC Cassava Mosaic, Climbing beans among others. EAC Partner States will seek to:

[53] Beintema, N. M. and Stads. G. J., 2011. African agricultural R&D in the New Millennium; progress for some, challenges for many; Food policy report of IFPRI (Washington DC) and ASTI (Rome, Italy); 44p

i) Strengthen agriculture research coordination capacity of EAC Secretariat.

ii) Designate and strengthen research and regulatory centers of excellence for crop, livestock, and fisheries in the EAC; with centers assigned research on the basis of comparative capacity advantage and providing guidance to satellite centers located in Partner States.

iii) Strengthen collaboration among the NARES in knowledge management and sharing.

iv) There is need to map ongoing interventions within existing centers of excellence, Research institutions as well as the key actors and commodities

4.2.1.2 Reduce the cost of agricultural production

Constraints/Challenge being addressed: High cost of agricultural inputs especially seed, fertilizers and machinery; imperfect in put markets, inadequate infrastructure, policy conflicts, high cost of borrowing, limited choice of improved seed varieties, animal and fish breeds in the region; slow process of releasing seed varieties, animal and fish breeds (Mabaya et al, 2014[54]; REMPAI, 2014[55]; and, Kariuki, 2016[56]).

To facilitate access to affordable agricultural inputs, EAC will:

i) Enact harmonized policies and provide incentives for production of inputs especially fertilizer within EAC Partner States

ii) Enhance availability and use of quality farm inputs (seeds, livestock drugs and agrochemicals) through harmonization of farm input certification and trade procedure regulations

iii) Enhance local and regional capacity for specialized technology transfer (e.g. embryo transfer, AI, cage fishing, fingerlings, seed production) and reduce the cost of deployment of improved technology.

iv) Enhance regulation of the agricultural input markets to prevent barriers to entry and create incentives for entry of new market players. This will promote competition in production and distribution of quality agricultural inputs

v) Enhance the harmonization of regulations within EAC Partner States to promote regional trade in inputs such as fertilizers, pesticides and agricultural machinery.

[54] Mabaya, E. (2014). The African Seed Access Index, TASAI, http://www.tasai.org
[55] REMPAI (2014). Kenya seed industry inquiry. Competition Authority of Kenya (CAK) and Kenya Markets Trust. Final Report; December
[56] Kariuki, J., (2016), Food Security & Seed in Kenya: Challenging Trends we Cannot Afford to Ignore. Kenya Markets Trust and Agri-Experience Ltd

vi) Streamline port operations and inland transportation especially for imported inputs/raw materials (e.g. fertilizer, agro-chemicals, equipment, oil products)

vii) Promote regional innovative input distribution systems and financing mechanisms for agriculture, including targeted input subsidy programs.

4.2.1.3 Promote efficient use of water resources for agriculture

EAC Partner States face increasing multiple water demands in the face of declining water quantity and quality, and inadequate governance framework. Water utilization in the EAC Partner States is challenged by inadequate information/data bank on water resources, poor water harvesting, and underutilization of irrigation potential.

Scarcity of water and poor coordination of shared water resources have also been a cause for conflicts among the EAC Partner States. For instance, poor coordination of fishing activities in Lake Victoria has led to diminished stocks and unavoidable conflicts between the lakeside communities and by extension, the Nile basin riparian countries. To address these challenges, the EAC Partner States will endeavor to:

i) Commission a regional water resources mapping and planning (focusing on access, utilization, quality, quantity and equity) and review existing water catchment utilization treaties[57]

ii) Improve water infrastructure and sanitation along regional trade routes (for example dams, especially near border markets and holding grounds)

iii) Build capacity for efficient use of water resources for crops (irrigation), livestock (notably in arid and semi-arid livestock production systems), agro-processing, fisheries (fish farming), and transportation

iv) Strengthen the legal and institutional framework and capacity for sustainable integrated water resource management planning, management and development, and to improve access and reliability of water services in Water for production (e.g. regulation of cage farming, breeding zones, establishment of marine protected areas, and control of adverse environmental impacts of aquaculture)

v) Develop regional framework to facilitate adoption of efficient water harvesting, conservation and utilization technologies

[57] A water point mapping was conducted by Water-Aid covering Uganda and Tanzania in 2010.

4.2.1.4 Reduce post-harvest losses

Constraints/Challenges being addressed: Poor post-harvest management compromises the quantity and quality standards of food thereby reducing food availability and safety. Post-harvest losses (PHLs) are estimated at between 30 and 40 percent of total agricultural production (World Bank, 2011)[58]. Others factors that precipitate PHLs include poor and inadequate storage, transport and power infrastructure. Weaknesses in policy and regulatory support for maintenance of food quality at farm and country level; bureaucracies and irregularities in customs procedures (delays at customs points) and low capacity of smallholder farmers to comply with SPS requirements and other standards also lead to post-harvest loses.

To address these challenges, EAC will seek to:

i) Facilitate the establishment and harmonization of optimal use of infrastructural capacity along transboundary value chains, for example, at customs points, airports, seaports, animal holding grounds and fish landing sites

ii) Harmonize EAC quality assurance standards, SPS measures, and traceability

iii) Facilitate the development of human capacity to handle and manage implementation of quality assurance standards along regional trading routes

iv) Harmonize strategies for prevention, surveillance and control of transboundary pests and diseases

v) Develop coordinated preparedness and protocol for responding to trans-boundary disease and pest outbreaks in crops, livestock and fisheries

4.2.1.5 Improve Market Access

Constraints/Challenge being addressed: Several factors influence market access for agricultural products in EAC Partner States. These include low levels of commercialization and specialization; biases against small traders and vulnerable groups especially women and youth; inadequate market information; lack of competitiveness along the value chain, and information distortion by larger value chain players and brokers. Other challenges relate to lack of capital, inadequate legal frameworks that govern public private partnerships, poor compliance to SPS food safety and standards, poor infrastructure (notably road networks and freight capacity); lack of organized marketing and inappropriate trade policies. Solving these constraints to market access requires that EAC Secretariat undertakes the following:

[58] World Bank (2011). Missing food: the case of postharvest grain losses in Sub-Saharan Africa. Washington, DC

i) Facilitate and coordinates the EAC Partner States to provide a market information system (food balance sheets, ICT based and involving public private sector partnerships)

ii) Strengthen trade policy, regulatory and institutional framework to eliminate NTBs (for example quality and safety standards requirements) and any practices that discriminate against special groups

iii) Establish and/or strengthen legal and regulatory frameworks for private public partnerships and structured trading systems for agricultural products and services for example commodity exchange, warehouse receipt system, warehouse standardization systems

iv) Support /establish developments of boarder market infrastructure and amenities at the one stop border post to enhance cross border trade in agricultural products

v) Strengthen the capacity of cross border trade actors, facilitators and private and public service providers

vi) Strengthen EAC Partner States to enhance the capacity for adopting common positions for trade negotiations

vii) Promote coordinated development of Agro industrial parks in the EAC

4.2.1.6 Develop capacity for exploitation and utilization of aquatic food resources

Constraints/Challenge being addressed: the fishing sector in EAC Partner states faces a myriad of challenges including overfishing, weak policy and regulatory framework, low public funding and investment, aquatic weeds, and high cost of fish feeds, low quality of fingerlings, artisanal fishing gear, water eutrophication, imperfect fish value chains, high cost of fishing equipment and limited research. EAC Partner States will promote exploitation and utilization of aquatic resources by:

i) Strengthen policy, legal and regulatory frameworks that govern the utilization of shared marine and inland water resources

ii) Strengthen the monitoring, control/regulation/enforcement and surveillance framework for optimal exploitation of marine resources

iii) Facilitate access to affordable fish harvesting and handling equipment and technologies

iv) Promote diversification of livelihoods within the communities of EAC Partner States that depend exclusively on shared fisheries resources

4.2.1.7 Strengthen the resilience of production and distribution systems

Constraints/challenge being addressed: Agricultural production systems are highly vulnerable to market and weather related shocks. High financial losses resulting from unmitigated risks; high dependence on rain-fed production exposes farmers to weather related

risks that are exacerbated by low capacity for risk transfer, poor records, under developed disaster risk management and early warning systems. In order to strengthen resilience of agricultural production systems, the EAC Partner States will endeavor to:

i) Strengthen regional capacity for provision, management and governance of agro-climatic early warning systems

ii) Formulate a framework for comprehensive risk management in agriculture including a post-disaster recovery plan

iii) Promote capacity for enhancement of resilience to agricultural sector risks along the value chain

iv) Establish an harmonized protocol to guiding EAC Partner States on responding to exogenous market and non-market shocks

v) Improve coordination capacity for disaster preparedness, risk analysis, response, climate change adaptation, mitigation and management

vi) Promote Agricultural insurance in the EAC region

4.2.2 Enhance food utilization

Constraints/Challenge being addressed: A large population in the EAC region falls below the recommended daily 2,160 Kcal intake driven by poor commercialization and merchandising of different high value traditional foods, declining purchasing power, food wastage, and poverty and changing lifestyles. None of the EAC Partner States exhibits stunting rates below the world threshold of 20 percent. Groups such as women in reproductive age, children under five, the elderly and the youth, people with disabilities, rural poor and urban poor face unique food utilization challenges that arise from intra-household food allocation and geographical differences. Moreover, households within the EAC region are facing increasing prevalence of lifestyle, non-communicable, diseases such as cancer, diabetes and coronary heart diseases (CHD).

To enhance utilization and tackle related emerging health issues, several action points are important:

i) Ensure that agricultural transformation and commercialization inclusively and sustainably delivers on peoples' broad-based food and nutrition security needs

ii) Tackle health and nutrition dimensions of food insecurity by creating awareness of the importance of dietary diversity and utilization of traditional high value food resources

iii) Promote the production, utilization and consumption of nutrient dense foods including bio-fortified food resources

iv) Strengthen the regional policy and national responsibilities regarding safety, potential threats and retrogressive stereotypes against special groups

v) Develop an action plan on food waste in EAC

4.2.3 Promote agribusiness, value addition and agro-industry

Challenges to value addition in the EAC region include low production which results in unpredictable supply of raw materials; costly value addition technologies, inadequate skills and capital, and tax escalation for value added products in the targeted global markets. Others are inadequacy of intellectual property laws and, poor enforcement of the same; unreliability of energy, poor access to running water, and poor industrial waste management skills. Promoting value addition requires that EAC Secretariat to:

i) Harmonize policies and strategies related to agribusiness, value addition and agro-industries

ii) Catalyze flows of capital (especially commercial lending and private investment) to scale up agribusinesses

iii) Promote training and capacity building in agribusiness, value addition skills, and utilization of processing technology at regional centers of excellence

iv) Promote backward and forward linkages as well as contractual arrangement in agri-business, value addition and agro-industrial

v) Promote aggregation (e.g. cooperatives) along important value chains to enable joint ventures in value addition, bulk trading in the region to benefit from economies of scale from domestic and export markets

vi) Facilitate handling and basic processing of raw materials, primary processing for highly perishable products and secondary processing for those products with high potential for growth in market share

vii) Facilitate development of joint facilities for capacity building for the special groups in agribusiness to facilitating entrepreneurship development

viii) Strengthen the capacity for coordination of incubation center in the EAC Partner States with regard to policy and regulation, product quality assurance and standards, information sharing and marketing

4.2.4 Promote sustainable natural resource use and management

Land, water and soil ecosystem degradation in EAC region are a common scenario driven by poor and unsustainable agricultural husbandry practices, inadequate policy regulatory frameworks and weak governance, increasing demand for agricultural products, urbanization, population growth leading to pressure on natural resources, industrialization, and the fact that the region is becoming a mining and exploration zone. Moreover, knowledge on the rates, trends and levels of degradation of natural resources in EAC Partner States remains insufficient and always untimely.

Promoting sustainable governance and institutional management for efficient use of shared ecosystems and resources will be important in gradually restoring the natural resource

conditions. Achieving conservation and sustainability of natural resources will require that the EAC Partner States:

i) Develop, strengthen and harmonize policies to promote sustainable use of natural resource use and management
ii) Promote integrated natural resources management approach for shared natural resources in EAC
iii) Harmonize regional waste management policy to safeguard the environment especially for shared water and marine resources
iv) Promote conservation and sustainable utilization of genetic resources and intellectual property rights (IPRs), community and breeders' rights, and protection of indigenous knowledge
v) Deepen domestication and ratification of International Treaty for Plant, fish and animal Genetic Resources for Food and Agriculture
vi) Strengthen the Implementation of the EAC Climatic Change policy and Master Plan

4.2.5 Strengthen capacities of EAC regional agricultural institutions

Key challenges and constraints to be addressed: Key institutions and decision-making organs relevant to agriculture, livestock, fisheries and food security investments within EAC, including the EAC Secretariat are characterized by inadequate capacities to coordinate planning and implementation of agricultural investments.

While appreciating the political will demonstrated by the Partner States, unmatched budgetary allocations, inadequate human capacity, poor coordination, collection and utilization of data to inform planning and investment programs hinders implementation of agricultural programs. Because of inadequate funding, investment priority setting is driven by external benefactors.

Through 2025, the EAC will seek to:

i) Strengthen coordination and planning capacity (technical staffing, data and information, and funding) of the agriculture department of the EAC secretariat
ii) Strengthen harmonization of EAC agricultural databank and knowledge management system
iii) Strengthen the policy, legal and institutional framework to facilitate public and private sector investment in agriculture
iv) Promote establishment of a special investment vehicle within EAC to leverage financing for the envisaged agricultural investments
v) Develop a framework for partnerships and collaboration for EAC Secretariat to engage with other internal and external stakeholder institutions relevant to agriculture

CHAPTER 5: OPPORTUNITIES FOR RESOURCE MOBILIZATION AND FINANCING

5.1 Prospects for funding of agricultural investments in EAC

Despite the challenges that have impeded agricultural growth in EAC, several investment opportunities exist within the sector. This section looks into these opportunities and their implications to the proposed resource mobilization for implementation of the RAIP.

5.1.1 Regional integration, increasing urbanization and expanded market outlets

Regional integration and CAADP has brought agriculture back to the discussion tables away from the neglect and apathy of the mid 1970s and 1980s. As a consequence, East African Community has experienced rapid and persistent growth over the last decade and a half. There has equally been an expansion of urbanization and growth of the middle class. It is noteworthy that although not reaching the targeted parameters, overall GDP per capita has shown impressive growth during the period of CAADP implementation.

Increasing urbanization and growth of the middle class is having implications in dietary habits with the consequent impact and transformation in the food value chains (Musyoka et al. 2014)[59]. Opportunities for growth of agribusiness are being created as consumers, both rural and urban, switch to processed foods. This has been accelerated by the growth of supermarkets across the community landscape, more so in urban areas. The urbanization and emergence of supermarkets and ensuing opportunities for agro-processing and contract farming for these retail outlets augurs well for small producers.

5.1.2 Revival of the region's abandoned value chains

There are untapped value addition opportunities in the fiber value chains. Kenya, Tanzania and Uganda are potential fiber crop producers especially sisal, and cotton. As more industries strive to go green they offer attractive opportunities for use of these fibers in the manufacture of value added products (e.g. motor vehicle panel composites, gypsum, animal feeds, leather, roofing tiles, organic fertilizer and specialty paper). This gives rise to opportunities for production expansion to the semi-arid areas. Promotion of these crops in the otherwise inhospitable environments offers appropriate and sustainable land use and revenue generation

[59] Musyoka M. P., M. Kavoi and J. M. Omiti (2014). Food consumption patterns and distributional welfare impact of import tariff reduction on cereals in Kenya. *African Journal of Agricultural and Resource Economics* Volume 9 Number 3 pages 183-199

opportunities for the resource poor population of the ASALs. Appropriate policy interventions aimed at promoting cottage industries will complement the fiber value chains revival efforts thereby contributing to employment creation at small and microenterprise levels in the region. Strengthen production of raw materials for agro-industries.

5.1.3 Deepened access to ICT services

The development and deepening of electronic financial services especially the mobile based money transfer and banking are creating fundamental changes in financial inclusion and access by majority of smallholder farmers. These technologies not only allow for deeper financial inclusion but also expanded array of services including marketing. It is now becoming possible to transact payments for agricultural insurance registration, premium payment and policy payout, and input purchase through the electronic wallet. These advances have profound ramifications as far as cost of doing business is concerned. It is for instance going to be possible to get quality assurance of produce at the farm gate and pay farmers on site.

5.1.4 Increased awareness on role of and investment in infrastructure

Partner States of the EAC are committing more resources towards development of infrastructure and regionally, there are more efforts on coordination of activities along the transit corridors and customs procedures. These are creating opportunities in upstream and downstream service provision and generating revenues in non-traditional agriculture sector value chains.

5.1.5 Funding for agriculture and food security initiatives is expanding

There is increased willingness among development partners to allocate more funds for agricultural development. However, African financial institutions such as AfDB must play a leading role in the support of the agriculture sector. Opportunities exist for leveraging especially non-sovereign investments from AfDB but, as shown in (

Figure 20) there is a glaring funding imbalance from the bank to the member RECs with EAC receiving only about half to one third of what accrues to Central Africa and ECOWAS. There are therefore immense opportunities for funding yet to be realized from this African Institution.

Funding of food and nutrition security initiatives as well as commodity based research and development (R&D) that aim at increasing productivity and distribution systems have received considerable donor support from, among others: World Bank; USAID; Bill and Melinda Gates Foundation (that in turn has been quite instrumental in catalyzing other organizations such as the Rockefeller Foundation, CIDA and AGRA); USA administration's Global Hunger and Food Security Initiative (launched in 2008) and Feed the Future (launched in 2009 with an commitment of USD 3.5 billion for the first three years); and, other charitable organizations (e.g. Syngenta Foundation for Sustainable Development)

There are further funding opportunities that can arise from South-South cooperation in the form of ODA to Sub-Sahara Africa, especially from Brazil, India and China. In 2009 for example, China donated USD 30 million to FAO's Special Program for Food Security for African

agricultural development (Spielman et al, 2011)[60]. Brazil and India are also deepening their linkages with Africa especially regarding joint research programs and technology transfer and thus would be obvious targets for mobilizing funds for the EAC RAIP.

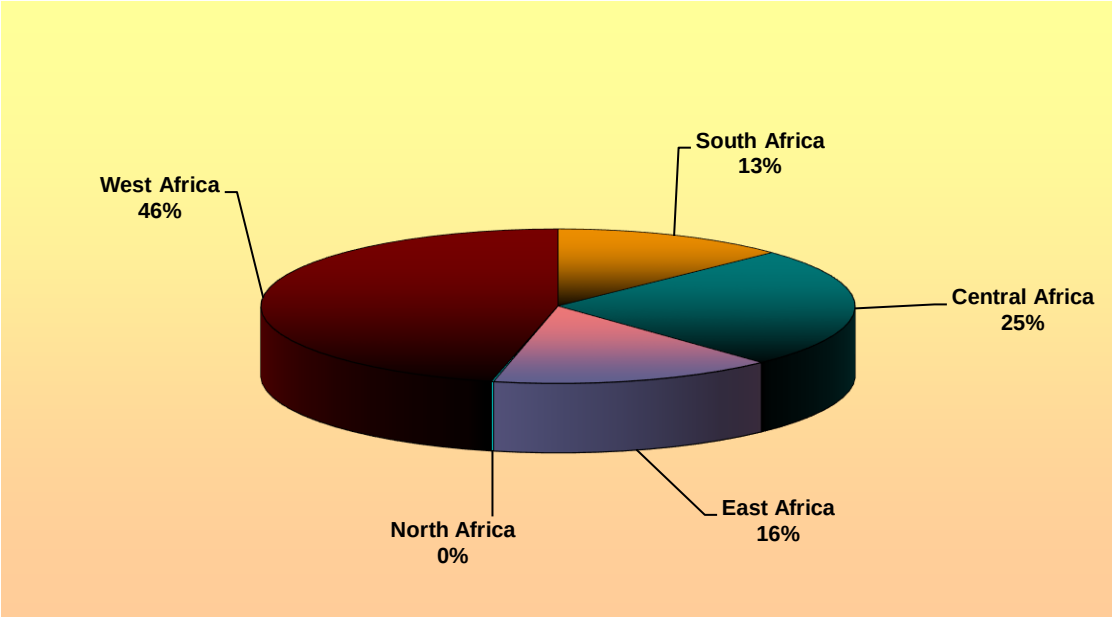

Figure 20: AfDB Approvals of Non-Sovereign Investments by Region
Source: African Development Bank (AfDB) 2016[61]

5.1.6 Create a conducive environment for attracting private sector investment

In the presence of dwindling public funds, leveraging on the private sector investments in agriculture and ending hunger will be important. The largest private sector investment comes from the domestic sources with the farmer taking up the largest share. Other private sources include the Foreign Direct Investments (FDIs) from overseas countries. However, to stimulate the private investments, the public sector needs to create incentives through investing on infrastructure, policies and institutional frameworks and inclusive financial structures which have been poor or less considered in EAC.

60 Spielman, D., F. Zaidi and K. Flaherty (2011). Changing donor priorities and strategies for agricultural R&D in developing countries
61 African Development Bank (AfDB) (2016). Feed Africa: Strategy for Agricultural Transformation in Africa, 2016-2025. Africa Development Bank, Abidjan

5.2 Specific EAC RAIP funding options

In order for the implementation of the EAC CAADP Compact and the EAC Food and Nutrition Security Action Plan to achieve the necessary impetus for broad-based economic growth, enormous amount of capital will be required. The challenge falls on the Partner States to develop effective and innovative financing mechanisms that are consistent with their respective NAIPs. Whereas the financing of the EAC Secretariat coordination activities will be relatively modest, it nonetheless demands of it (the Secretariat) to develop and implement innovative legislative structures to facilitate sustainable resource mobilization both from the Partner States and beyond.

Various options or combinations are available that will require concerted efforts in developing and implementing strategies and frameworks, singularly by the Partner States and collectively at regional level. The proposed financing options for RAIP implementation are highlighted below.

5.2.1 Public Resources

It is acknowledged that the bulk of funding for agriculture and food security action plan will have to come from public sources. Although EAC Partner States subscribed and committed to allocating at least 10 percent of budgetary resources to agricultural investment under the Maputo Declaration (2003), and further affirmed under the Malabo Declaration (2014), the performance of this pledge has been relatively low with a collective expenditure outlay remaining below 10 percent since 2003 (Figure 21).

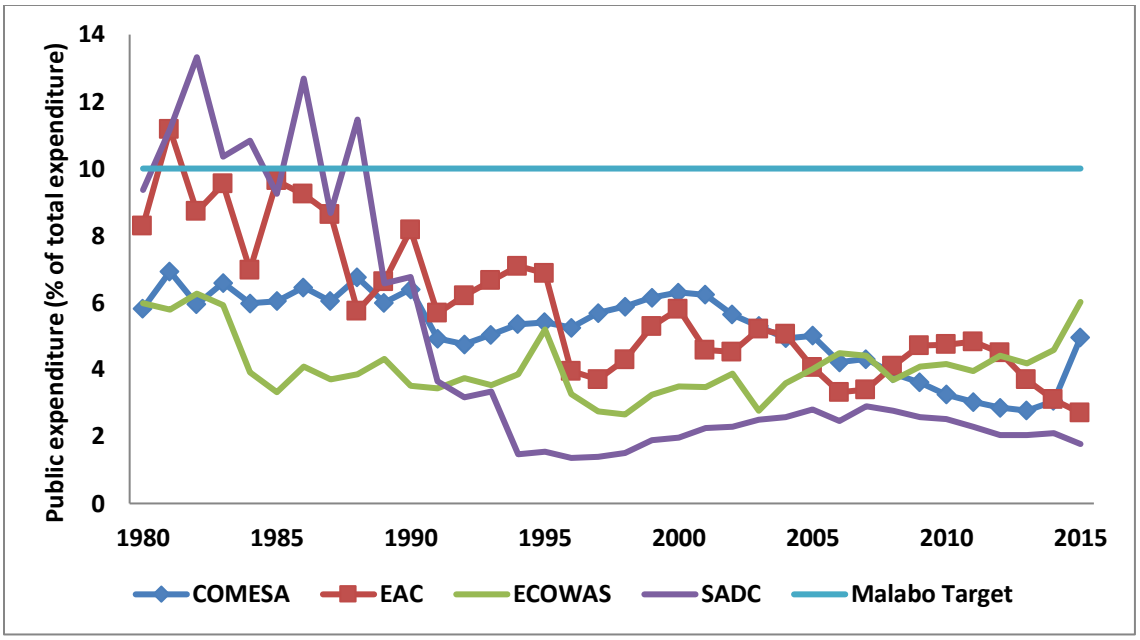

Figure 21: Agriculture expenditure as a share of total expenditure
Source: Benin, S., and Yu, B. 2013[62]. ReSAKSS, 2017

There is therefore dire need for a redoubling of efforts among the Partner States towards meeting the CAADP pledges. Public expenditure improvements in agriculture have been directed mostly to short term growth drivers such as fertilizer and input subsidies. While providing short term relief, management of subsidies has not always matched the high expectations of its potential impacts. Moreover, subsidies are prone to pervasive political manipulation, further eroding their perceived benefits. Partner states are urged to set aside a percentage of duty collected from luxury goods for agricultural financing.

5.2.2 Public Private Partnerships

Public Private Partnerships (PPPs) are going to be an effective financing mechanism in the RAIP initiative especially for infrastructure and capital investment projects. However, success of these PPP initiatives will be contingent of enhancing availability of development finance across the Partner States and strengthening the private sector. This will be augmented by development and harmonization of PPP policies, strategies and legal and regulatory frameworks; promotion of PPP in provision of essential infrastructure; and, capacity enhancement for PPP development.

[62] Benin, S., and B. Yu 2013. Complying with Maputo Declaration Target; Trends in public agricultural expenditures and implications for pursuit of optimal allocation of public agricultural spending. ReSAKSS Annual Trends and Outlook Report 2012. IFPRI **http://resakss.org/node/11**

5.2.3 Sovereign Wealth Funds

As the Partner States continue to develop finite natural resources (minerals, oil, and natural gas), they should establish Sovereign Wealth Funds and agricultural credit financing for long-term investment and desist from using the proceeds on current consumption. Using the Maputo and Malabo frameworks, at least 10percent of these funds would be dedicated to investments in the region's agricultural value chains and R&D including strengthening the development banks such EADB, UDB etc. Strategies to support access to affordable credit for Agricultural value chain.

5.2.4 AfDB Non-Sovereign Investment

As noted earlier, the share of AfDB non-Sovereign investment accruing to EAC is still very low compared to West and Central African states. Opportunities therefore exist for developing strategies for tapping into, leveraging and effectively utilizing these investments for financing the RAIP. Develop bankable projects and build capacity to eliminate barriers to absorption of funds.

5.2.5 The African Agribusiness and Agro-Industries Initiative (3ADI)

The EAC has the potential for tapping into the African Agribusiness and Agro-Industries Initiative (3ADI), the joint initiative of the African Union, UN Agencies and the African Development Bank, which was designed to mobilize resources for the agro-food sector development in Africa. This facility could support the development of regional agro-chains as well as providing resources to enhance the coordination capacities of the secretariat. Building a critical mass of agricultural entrepreneurs by integrating agribusiness in agricultural and entrepreneurship curriculum and tailor made courses for the non-formal sector.

5.2.6 Donor Funding

Despite its undesirable effects on recipient countries due to vulnerability to external shocks, donor funding will continue to be a major source of public finance for agricultural development. As new modalities of ODA emerge as already noted in sub-section 6.1.5, it will be prudent for EAC countries to shift towards program (as opposed to project) based financing while at the same time building capacity for program formulation and budgeting, preferably for cross border programs. Similarly, it will be necessary to address inherent challenges relating to poor utilization and coordination of donor funds which arise partly from lack of participation of targeted beneficiaries in the design and management of the funded programs. EAC Partner States should deliberately promote policies where donors must support national priorities.

5.2.7 Private Equity Finance

Private equity finance comes in two forms: external (through trade and capital flows) or internal (through domestic savings and investments). Foreign direct Investment (FDI) has been and will continue to be a major source of private financing in the agro-value chains and is regarded as useful for its long term and therefore sustainable nature as well as ability to bring with it

management skills, market linkages and technological transfer. The region is well poised to leverage on this financing for the development of the agro-value chains including major infrastructural investment. There is potential growing domestic savings that can be supplemented by voluntary commodity levies, especially in the case of commercial enterprises such as horticulture, coffee, tea, dairy that target regional/export markets.

CHAPTER 6: IMPLEMENTATION FRAMEWORK AND M&E

This section looks at the implementation arrangements and M&E framework for the RAIP including the results framework, and institutional architecture. The technical capacity arrangements are also covered as well as an indicative five-year implementation plan and budget (Annex 5)[63]. It will be observed that successful implementation of this plan is contingent upon sustained regional convergence and commitment to the EAC agenda. It is in the best interest of the Community that any challenges that stand in the way of full regional integration are resolved as they pose serious risks to the successful implementation of this RAIP.

6.1 Implementation Framework

The implementation of CAADP Compact/RAIP is predicated on a robust institutional framework coordinated by the EAC Secretariat's Agriculture and Food Security Department working together with the Regional Multi-Stakeholder Technical Working Group (RMSTWG)[64] This department will also be responsible for program and project design, day-to-day execution of the projects and programs as well as coordination of monitoring and evaluation.

The RMSTWG, working with the Agriculture and Food Security Department, shall be responsible to the Sectoral Council on Agriculture and Food Security to which it shall report implementation progress and seek guidance. The Sectoral Council shall provide oversight for the RAIP implementation, while reporting to and obtaining support and guidance from the Council of Ministers. Overall political and policy support will be vested in the Summit.

Implementation of RAIP will involve various agricultural sector stakeholders in the Partner States, development partners, agriculture non-state actors (private sector, civil society, agricultural research institutions and academia). The proposed institutional architecture necessary to provide the oversight and requirements for effective RAIP implementation is presented in Figure 22. The EAC Treaty recognizes that monitoring and evaluating EAC projects and programs is a shared responsibility at different levels and by different stakeholders. Therefore, we propose that different agriculture stakeholders in the EAC region actively contribute to the M&E for RAIP and overall mutual accountability agenda for the agriculture sector. Table 12 provides an indicative list of M&E responsibilities by different agriculture stakeholders in the region.

[63] The budgetary arrangements for the remaining three years will be guided by the outcome of the M&E reports and the scheduled mid-term evaluation after the 4th year of implementation

[64] The RMSTWG draws its membership from the Partner States' ministries responsible for agriculture, livestock, fisheries and forestry; EAC Affairs; NEPAD Planning and Coordination Agency (NPCA); Eastern Africa Grain Council (EAGC); the Eastern Africa Farmers Federation (EAFF); and, the Regional Strategic Analysis and Knowledge Support System for East and Central Africa (ReSAKSS-ECA).

Table 12: Roles of partners and collaborators in Agriculture M&E in the EAC

Actor	M&E Responsibilities in RAIP
EAC senior managers in the agriculture department of EAC	Demonstrate political will for M&E; provide incentives, strategic leadership, organizational support to the implementation of EAC CAADP results framework; budget for M&E; articulate goals and objectives for the program in collaboration with all other actors; lead development and coordination of the M&E plan; coordinate review of results to assess program performance and make adjustments
Agriculture departments at national level, M&E technical staff and other technical officers	Carry out day to day M&E activities for RAIP such as continuous progress reporting, data collection/collation, preparation of technical reports for dissemination to the agriculture stakeholders in EAC; develop communication tools; coordinate special surveys/studies; prepare M&E tools for RAIP (such as detailed M&E plan, data collection tools and reporting tools and M&E guidelines); collation and analysis of data to inform the EAC Secretariat and key stakeholders in the Partner States about the extent of progress in the achievement of stated RAIP objectives and expected outcomes
EAC Statistics and M&E Units	Provide technical support to the RAIP M&E activities; facilitate data collection; facilitate dissemination of data; carry out collaborative M&E activities with EAC and other stakeholders; contribute to the development and coordination of the M&E plan
Member States-relevant ministries/ government departments	Data collection, data sharing and data analysis; produce country reports; dissemination and use of M&E information generated under RAIP; contribute to surveys and studies
National statistical authorities	Data collection, technical support
Funding agencies	Financial support for M&E activities (data collection, management, analysis and reporting); provide technical assistance; disseminate and use information; demand for M&E; financing capacity strengthening activities for M&E
AUC/ NEPAD	Technical and financial support, capacity building
Private sector and Civil society	Carry out special studies and surveys to assess impacts on human welfare
NARS (policy research institutes, NARIs, universities, private consultancy firms), ReSAKSS, international research organizations and other think tanks	Conduct field surveys and carry out special studies, write M&E support proposals in collaboration with EAC, carry out capacity strengthening activities for M&E

Source: Adapted from Benin et al, 2010[65]

[65] Benin, S.; Johnson, M.; Omilola, B.; Beintema, N.; Bekele, H.; Chilonda, P.; Davis, K.; Edeme, J.; Elmekass, A.; Govereh, J.; Kakuba, T.; Karugia, J.; Makunike, R.; Massawe, S.; Mpyisi, E.; Nwafor, M.; Olubode-Awosola, F.; Sanyang, S.; Taye, B.; Wanzala, M.; Yade, M.; Zewdie, Y, (2010). Monitoring and Evaluation (M&E) System for the Comprehensive Africa Agriculture Development Programme (CAADP). ReSAKSS Working Paper No. 6. Washington, D.C.: International Food Policy Research Institute (IFPRI).

Although different actors have important M&E roles to play under RAIP, the EAC Secretariat will have major responsibilities in coordinating activities at the regional level. It is therefore necessary to strengthen capacity for agriculture M&E within the EAC secretariat, which currently lacks the requisite human and financial resources. Although the Secretariat has statistics and M&E units, the available officers are responsible for tracking indicators in many different sectors and only collect data on selected agriculture indicators. Implementation of M&E for RAIP will require reporting on numerous agricultural indicators as proposed by the EAC CAADP result framework; reporting on projects and programs under RAIP will definitely create an added burden. It would be unrealistic to expect the current M&E staff at EAC to implement these growing agriculture M&E demands, given their other responsibilities. To address this challenge, it would be useful if the agriculture department within the secretariat would have an officer dedicated to M&E, and working in close collaboration with the EAC statistics/M&E unit.

In EAC, mutual accountability is not well developed to achieve the desired action and results in agricultural sector. The key constraints include weakness in governance structures, inadequate accountability forums, inadequate feedback systems, limited involvement of key stakeholders in planning and execution of programs, poor coordination in implementation, poorly informed target group/farmers, limited information channels, and weak M&E systems. To this end, the RAIP proposes strengthening of the capacity of both the Secretariat as well as the regional agricultural institutions in order to deliver on the proposed objectives.

6.2 Framework for monitoring and evaluation

The proposed M&E framework shall provide stakeholders and implementing Partner States with data, information and evidence to measure progress, determine whether expected outputs, outcomes and impacts have been achieved, and provide timely feedback in order to ensure that emerging problems are identified early in implementation and that appropriate actions are taken. Decisions on what to monitor under RAIP will be guided by the EAC CAADP results framework and the RAIP implementation matrix presented in Annex .

M&E activities under RAIP entail a number of activities such as:

i. Implement Regional Peer Review process (through regional JSR) on a regular basis

ii. Supporting and contributing to Biannual review on CAADP/ Malabo to generate regional report that will feed into the continental report

iii. Strengthened capacity for evidence based planning, implementation and review (through technical support)

iv. Production of periodic M&E knowledge products such as:

- RAIP implementation progress reports

- Regional Agricultural Status Survey (RASS)
- Up-to-date databases of indicators identified in the EAC CAADP result framework
- Periodic studies such midterm reviews, special reports
- Presentations to be made on relevant meeting, policy briefs, posters
- Develop and implement an effective M&E dissemination strategy EAC
- Strengthen capacity for agriculture M&E in the EAC
- Develop CAADP page for EAC to be linked with the main EAC website

Products generated from the above M&E activities will enhance and guide the EAC reports to the Sectoral Council of Agriculture and Food Security, EAC Council of Ministers and EAC Heads of State and Government Summits.

Regional Agricultural Status Survey (RASS) will be carried out at the beginning of the plan to provide the necessary baseline data. Towards the end of the fourth year, a mid-term review (MTR) will be conducted to assess progress made in the implementation of the plan. This review is envisaged to inform the Regional Peer Review exercise scheduled at the end of the fifth year. Evaluation of the RAIP will entail periodic assessment of the implementation progress in terms of relevance, efficiency, effectiveness, impact and sustainability. The envisaged Regional Peer Review Mechanism will be instrumental in anchoring the necessary political buy-in across the Partner States

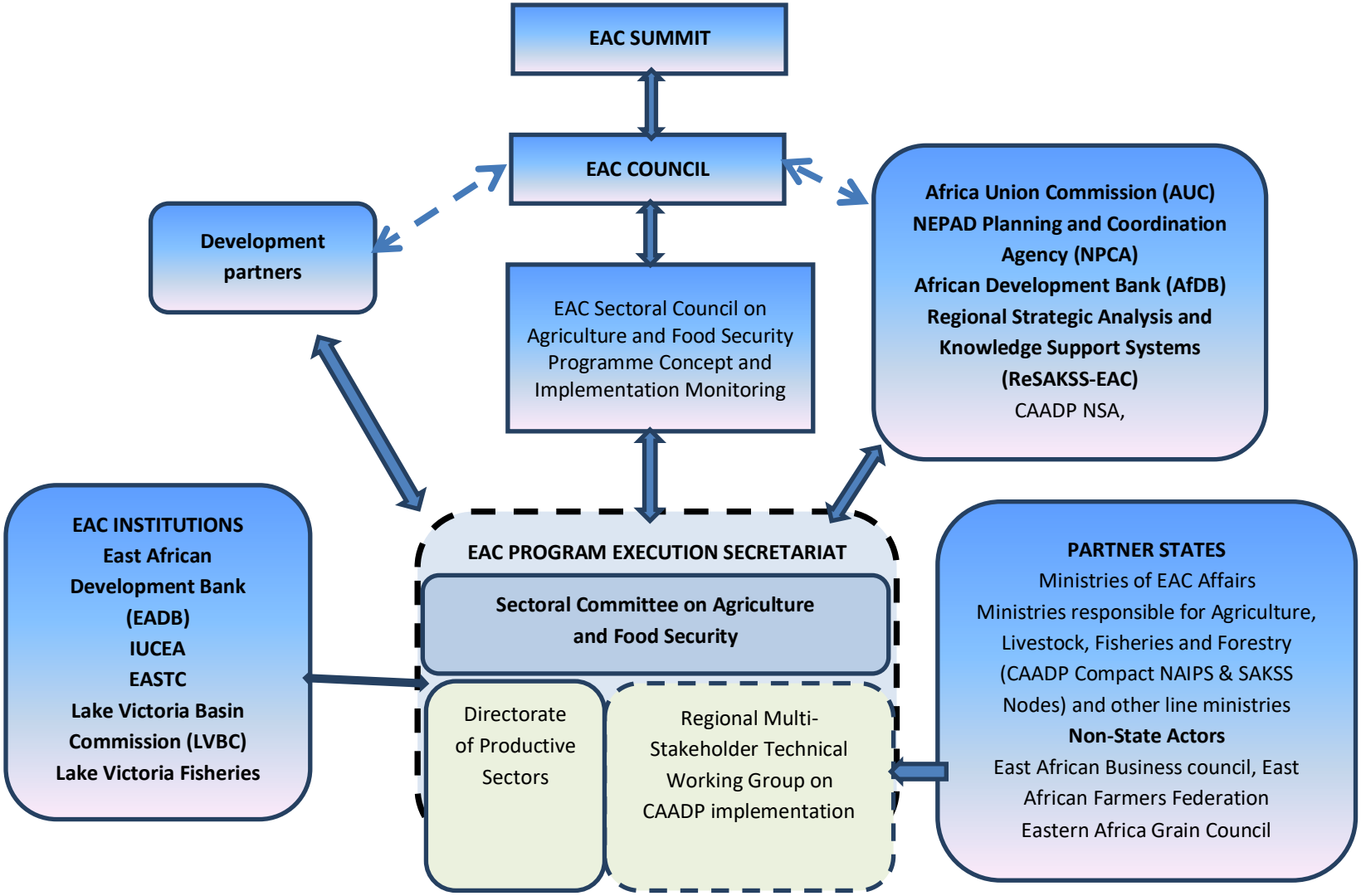

Figure 22: CAADP RAIP Institutional Architecture

ANNEXES

Annex 1: Economic highlights of EAC Partner States

Partner State	2007	2008	2009	2010	2011	2012	2013	2014	2015
Real GDP (million USD at constant 2009 prices)									
Burundi	1,845	1,704	1,776	1,862	1,895	1,730	1,683	1,759	1,687
Kenya	35,753	35,836	37,021	39,179	37,090	40,747	42,346	43,699	41,368
Rwanda	4,625	5,136	5,381	5,768	6,194	6,763	7,094	7,601	8,151
Tanzania	25,508	26,946	28,574	30,331	33,074	34,684	36,441	39,116	42,479
Uganda	--	19,217	20,544	22,213	23,519	24,347	25,533	26,793	28,291
East Africa	67,731	88,839	93,296	99,353	101,772	108,269	113,018	118,879	121,868
Real GDP growth rate (percent)									
Burundi		-7.6	4.2	4.8	1.8	-8.7	-2.7	4.5	-4.1
Kenya		0.2	3.3	5.8	-5.3	9.2	4.9	7.1	7.2
Rwanda		11.0	4.8	7.2	7.4	9.2	4.9	7.1	7.2
Tanzania		5.6	6.0	6.1	9.0	4.9	5.1	7.3	8.6
Uganda			6.9	8.1	5.9	3.5	4.9	4.9	5.6
East Africa			5.0	6.5	2.4	6.4	4.4	5.2	2.5
GDP per capita (USD)									
Burundi	238	214	218	222	220	195	185	187	174
Kenya	962	938	982	1,018	939	1002	1011	1015	936
Rwanda	501	542	554	579	606	645	661	691	724
Tanzania	647	663	682	691	743	772	789	829	896
Uganda		662	687	721	740	744	758	772	791
East Africa	587	604	625	646	650	671	681	699	704
Real GDP per capita growth rates (percent)									
Burundi		-10.1	1.9	1.8	-0.9	-11.4	-5.1	1.1	-7.0
Kenya		-2.5	4.7	3.7	-7.8	6.7	0.9	0.4	-7.8
Rwanda		8.2	2.2	4.5	4.7	6.4	2.5	4.5	4.8
Tanzania		2.5	2.9	1.3	7.5	3.9	2.2	5.1	8.1
Uganda			3.8	4.9	2.6	0.5	1.9	1.8	2.5
East Africa		-0.5	3.1	3.3	1.2	1.2	0.5	2.6	0.1

Source: EAC Facts and Figures, 2016

Annex 2: Main categories of agricultural commodities in EAC: opportunities and challenges

Commodity Category	Priority commodities (products)	Main challenges	Opportunities and potential contribution of EAC policy and investment coordination
1) Cereals	**Maize**	**Production** is predominantly rain-fed; high input costs partly explains low utilization of improved seeds and fertilizer; unregulated seed sector; limited business case for private sector investment in seed production economics of irrigation has not been favorable for maize due to low value cost ratios; low productivity partly due to shortening of fallow periods; emerging pests and diseases such as the Fall Armyworm; limited knowledge of farmers regarding good agricultural practices; weak extension services. **Declining soil fertility** and climate sensitivity; arbitrary government policies or interference in markets, often crowds out private sector participation. **Cross border trade** exists but volumes are unpredictable; unpredictable national policies and taxes; poor compliance with safety (Aflatoxin contamination) and standards requirements; and, inadequate capacity for enforcing quality standards; limited data and information to support interventions and regional cooperation	It is possible to close the gap between EAC (about 1.5 tons/ha on average) and good practice countries like Egypt (8 tons/ha) and Republic of South Africa (6 tons/ha); rising populations and preference for maize compared to other traditional foods pushing up demand and hence opportunities for growers; linkages with other sectors such as livestock (animal feeds) are still underexploited and could contribute towards cost cutting of raw materials (e.g. for dairy, pigs and poultry industries) that are currently imported. EAC needs to build capacity for implementation of food safety and quality standards; management of emergency maize shortfalls and spikes in global prices require a common EAC stand; removal on NTBs
	Rice	Low productivity due to low input use and adoption of higher yielding rice varieties suitable for upland regions; competition pressure from imported rice; inadequate seeds for area expansion; competition from Asian rice producers; poor harmonization of import duties under the EAC CET (derogations); blending of cheap imported rice with local varieties; mismanagement of large scale irrigation projects – breakdown of irrigation infrastructure undermining productivity and viability of such schemes; land use policies	Rising demand in urban areas; rising global rice consumption (growing at 3.2 percent annually) and wide yield gap between farmers' fields and potential levels to act as strong incentive for increasing production investments; and coordination of duties and transshipments within EAC; growing demand for rice prevents opportunity for increased production; increased private sector in rice production in the EAC; development of high-yielding upland rice varieties;
	Wheat	High capital intensity in large scale production systems locks out smallholder participation; poor harmonization of	Rising demand in urban areas and a lot of opportunities for value addition.

		import duties in the region; diminishing land parcels; high input costs; fungicide resistant strains (e.g. rust and blast); although CIMMYT and ASARECA are actively supporting research and breeding for new varieties there is limited access to certified new planting materials; underdeveloped market framework (currently it is assumed wheat production enjoys economies of scale yet land fragmentation is working against this)	Competitiveness of the millers in EAC Partner States (and location of the mills) depends to a large extent on the cost of imported wheat which in turn depends on import duties charged: in order to minimize the excess capacities in the milling industry (currently averaging 40 – 50 percent), EAC needs to rationalize import duties and promote production efficiency; studies are needed to review and advice on the input supply and optimal production models
	Sorghum	Dietary shifts towards maize led to a sharp decline in production (so called orphan crops); policy neglect in terms of budgetary allocation, extension and marketing services; little or no research in variety development and dissemination; limited capacity for seed trade due to poor enforcement of harmonized regulations; limited use of high-yielding inputs; pests and diseases	There is increasing demand from millers and brewing industry where there is a push for sorghum to substitute imported raw materials/barley. Governments should support private sector initiatives aiming at contracting smallholder farmers to supply of sorghum and millet (for example for brewing in the case of sorghum). EAC can have an impact on seed trade and expansion of production as part of the regional food and nutrition security; blending with maize and wheat flour/products for nutritional purposes and reducing stress on these commodities
	Millet	As in the case of sorghum, dietary changes have led to declines in production; policy neglect in terms of budgetary allocation for research, extension and marketing services; quantities demanded are in small portions thus not offering farmers and large investors opportunities for scaling up production	Awareness campaigns for dietary diversification and promoting production in ASALS offer opportunities for farmers. As in the case of other orphan crops, EAC can have an impact on seed trade and expansion of production as part of the regional food and nutrition security. There are opportunities in blending with maize and wheat flour/products as well as vitamin fortification for nutritional purposes.
2) Pulses	**Beans (dry)** **Green grams**	Pulses have generally been neglected in national policies; they face the same challenges as maize; close to 20	Awareness campaigns for dietary diversification and rising cost of meat (especially beef) offers

		improved seed varieties of beans have recently been produced to suit various agro-ecological zones of EAC but although there are indications of rates of adoption, productivity remains low with deficits now estimated at over 100,000 tons; limited investment by private sector in new seed varieties; lack of staking materials particularly in Rwanda and Burundi; beans are highly susceptible to many diseases and climatic stresses; mixed cropping tends to keep yield down	opportunities for farmers to scale up production; beans are an important commodity in the regional food security and nutrition equation and significant amounts are traded informally across the EAC borders; opportunities for pulses in Asian markets; new improved varieties which are more nutritious
Oilseeds/oil crops	**Groundnuts, soybeans, sunflower and sim sim**	Apart from sunflower, the crops under this category have traditionally been part of the subsistence farming system and many suffer from low productivity (largely due to use of low quality seeds and low prioritization by research and extension and low use of fertilizer), lack of product standardization, low and unpredictable supply and poor market access	There are opportunities for scaling up of production and low capital intensity (on-farm) value addition using locally fabricated oil extraction equipment. Such initiatives have good prospects for forging linkages between smallholder producers and larger processors, with the latter offering technical skill, ensuring quality control and a steady market outlet. Cross border markets offer opportunities for improving supply of raw materials to processors and incentives for adoption of yield enhancing technologies. The vegetable oil production in EAC must be viewed as an import substitution industry whose success will depend on appropriate policies/incentives and public partnerships with the private sector
3) Roots and Tubers	**Irish potato**	Yields have been declining in Rwanda (the second largest producer in EAC) and Uganda because many farmers do not use clean seeds, fertilizer and pesticides; Kenya is starting to experience stagnation in output due to poor access to good quality planting materials. Generally, there is low investments in value addition partly due to lack of integration of producers with markets and processors	Strong urban demand; opportunities for intraregional trade exist but are limited; a strong potato research-extension program in Kenya, with emphasis on use of tissue culture and high yielding potato varieties, has led to increased domestic production; EAC needs to promote knowledge sharing and PPPs for value addition; opportunities for value addition and exports
	Cassava Sweet potato	Cassava and sweet potatoes are quite critical to the food security and nutrition of many rural households in EAC but as in the case of oil crops, they have lacked strong policy	There are good prospects for regional coordination of disease control initiatives and sharing of clean planting materials. Private

		and research support. Although there have been strong re-traditionalization campaigns, particularly from nutrition experts, that have boosted their presence in urban retail markets, their value chains and links with agro-processors have not been as robust as in the case of Irish potatoes. The crops are easily adapted to many agro-ecological zones but productivity is generally low, partly due to their soil (nutrient) mining nature. In recent times, there have been inroads made in research, particularly in vitamin fortification of sweet potatoes and popularizing of cassava varieties that are more resistant to cassava mosaic virus which has wrecked a lot of havoc in the region.	sector investments in value addition need public support
4) Industrial (Commercial) Crops	**Tea**	There is a thriving engagement of smallholder farmers but they face a number of challenges such as land fragmentation, low productivity resulting from over age tea bushes and poor quality varieties/clones, price volatility, numerous taxes and delayed payments; over reliance on traditional markets; low domestic consumption; limited value addition; and competition from other enterprises such as horticulture and loss of land to real estate for farms around urban centers	Value addition opportunities and product diversification for example to specialty teas and complements of tea; domestic consumers and emerging African markets remain unexploited. Should be a priority for EAC due to high value and need for promoting intraregional trade and joint market promotion campaigns in foreign markets
	Coffee	Same challenges as for tea; declining soil fertility; diseases such as coffee; urbanization and climate change threatening area under coffee cultivation; price volatility in the world market	Same opportunities as for tea; market opportunity for specialty coffee
	Pyrethrum	Emergence of inorganic pyrethrins created stiff competition that led to collapse of the industry but there has been a resurgence in demand globally; production faces constrains such as low producer prices; institutional mismanagement; poor marketing strategies; and unexploited value addition opportunities; expensive labor-intensive production	Value addition and potential intra African trade opportunities remain unexploited and should therefore be areas of focus for EAC
	Sugarcane	Production is predominantly rain-fed; varieties are low in sucrose and are long maturing; there are market distortions due to a mix of actions of cartels and unpredictable interventions by governments; low outputs	Industry will benefit from adoption of more productive cane varieties and irrigation. Due to the strong pressure from cheaper imports affecting the entire EAC, regional policy

		lead to factories operating at high excess capacities leading to high mark-up prices at the retail level; crop diseases; limited competitiveness compared to other countries such as Brazil;	harmonization and surveillance of transshipments is a necessity
	Cotton	**Production** of cotton in EAC remains subdued due to many factors (poor access to planting seeds, high labor wages, poorly organized marketing and low ginning capacity). Value chain actors are engaged in the low value segment entailing primary production, ginning, weaving and dyeing (standard push segment) as opposed to the high value 'demand pull' segment involving, design works, apparel production, garmenting and retailing and distribution. EAC textile manufactures and other value chain actors are small and thus fail to take advantage of economies of scale that can facilitate competitive access to large lucrative markets especially in the EU and USA (under AGOA); literally all regional textile manufacturers ironically depend on apparel and technologies from global market competitors such as China and South East Asian countries. Governments have not come out with integrated value chain strategies for reviving the industry: investors in EAC often face challenges of power supply, inadequate raw materials and value chain mismanagement; in some cases, sector support from development partners have been poorly coordinated and harmonized with national plans. The benefits of export processing zones tend to disproportionately benefit foreign investors capitalizing on the region's AGOA facility. Globally, cotton has been facing stiff competition from synthetics (polyesters and nylons that are petro-based) with consumers preferring them as opposed to pure cotton garments. Other challenges relate to declining soil fertility, pests and diseases, price volatility in world markets; collapse of	EAC has a definite role in the textiles industry. Managing production (e.g. input subsidy programs and extension services), ginneries, marketing and incentivizing private sector participation in revival of manufacturing are clearly national responsibilities. However, there are opportunities and merits in regionally coordinated centers of skills development, sharing of production technologies, enacting policies and regulations to protect the regional industry from dumping (*mitumbas*), creating a level playing field against the more established textiles producers like China and improving on industry coordination and competitiveness. Opportunities for joint ventures among EAC exporters to the USA market under AGOA but there will be a need for policy reforms support to bring buyers and sellers together as has been attempted by USAID in the past under its COMPETE project There are emerging niche markets for organic cotton that need to be exploited by entrepreneurs

		cooperatives; competition with second hand clothes; poor seeds; expensive labor-intensive production	
	Sisal	As in the case of pyrethrum, sisal lost its edge to man-made fibers leading to stagnated production and prices, a situation that persisted up to 1980s; population pressure and land fragmentation are major challenges to new investments aimed at reviving sisal production; domestic and regional markets have not been fully exploited	There are value addition opportunities and prospects for attracting the private investors to produce innovative sisal based products whose demand especially in Asia and China is increasing rapidly (e.g. motor vehicle panel composites, gypsum, animal feeds, roofing tiles, organic fertilizer and specialty paper)
	Tobacco	Threats to the environment arising from demand for fuel wood; pressure from WHO on health risks of smoking; studies are needed to throw more light on conflicts of income and employment generations for smallholder farmers and health and environmental risks. The tobacco sector, however, remains an important industry for governments mainly as a source of tax revenue and employment; this has created a major predicament in policy reforms thus perennially putting industry players and governments at loggerheads. Due to price inelasticity of demand, taxes have predictably been reviewed upwards creating food security predicaments (especially for low income households with tobacco addicted bread winners) and wider economic implications that have not been fully appreciated.	There is a need for more research knowledge to be created about the tobacco industry in terms of the benefits (employment, tax revenues and linkages) and costs (e.g. health, food security and environmental impacts). EAC has an important role to play in policy and tariff harmonization, and more specifically in areas of industry competitiveness and management of transshipments and counterfeits
5) Livestock and Livestock Products (LLPs)	**Beef cattle**	Most indigenous stocks are of low quality in terms of growth and weight; feed and water resources in the rangelands have been declining as population pressure on intensifies; major trans-boundary diseases such as Rinderpest have been eliminated but others such as Foot and Mouth Disease (FMD), CBPP, CCPP, PPR, and Rift Valley fever (RVF) as well as other bacterial infections and pests stubbornly persist; costs of vet/extension services) and animal health products are prohibitive for smallholder farmers. Marketing infrastructure and market information systems	The demand for beef is rising as population and per capita incomes rise; rising urbanization and the middle class; value addition and linkages of the beef industry to other sectors such as grains; and, emerging markets in Africa that have hitherto been neglected partly due to poor infrastructure and lack of tradables (lack of return cargo). There is a huge role for EAC regarding opening up cross border trade, eliminating trade obstacles and managing SPS regulations as well

		are poorly coordinated leading to animal loss and wastage; government funding for services and disease control and surveillance does not match the sector's contribution to AgGDP; there is limited value addition and use of byproducts at abattoirs; technical barriers to trade in foreign markets; and, under exploitation of African emerging markets. The issue of land grab in Africa largely revolves around the vast tracks of lands in ASALS of EAC mostly found in Tanzania and Kenya. The onslaught on grazing land will thus be coming not just from crop agriculture and real estate development but also from loss to foreigners (often working in cahoots with corrupt public officials). Other challenges relate to: limited policy implementation to support livestock; lack of accredited laboratories to support exports; traditional attitudes for livestock farming whereby keeping large herds is a sign of wealth (the so called cattle complex), thus undermining commercial livestock value chains; limited land for grazing due to climate change and urbanization; competition between livestock herders and crop farmers; and, poor funding of extension services	as trans-boundary diseases and emergencies that cause threats to animals and humans. There are also opportunities for setting up common animal branding strategies and where possible, managing common disease-free areas, holding and watering grounds, and common livestock auction markets. EAC can also promote establishment of centers of excellence (training and developing skills and technologies in the leather industry) and/or linking national institutes with those already established, for example, the COMESA region. Pastoral beef supply is declining and becoming more erratic; supplies from Somalia and Ethiopia have drastically declined as these countries increase their exports to the Middle East while supplies from South Sudan having more or less ceased in early 2000 following the peace agreement in 2005
	Dairy Cattle	Kenya has the most advanced dairy industry (both in terms of improved dairy herd and processing capacity), not just in EAC but also in the eastern and southern Africa region. Generally, costs of acquiring animal breeds is extremely high in EAC; vet/extension services (e.g. AI) and animal health products are prohibitive for smallholder farmers; marketing infrastructure and market information systems are poorly coordinated leading to loss of milk; price volatility is linked to inadequate forage supply that depends largely on rainfall and imported feeds ingredients	The demand for milk value added products is high thus providing opportunities for increased production; there are policy issues on strategies for reducing consumer prices of milk and milk products especially in urban areas; sharing of animal genetic materials and protecting intellectual and breeders rights; addressing trade obstacles and food safety requirements and compliance, all of which can be spearheaded at the EAC level
	Pigs	High cost of feeds and vet and extension services; farmers skills and ability to deal with animal diseases still rudimentary; there are issues with market imperfections	Demand is rising as the cost of red meat rises so there are opportunities for scaling up production and processing capacity. Although

		(e.g. lack of competitiveness at the processing level) that lead to depressed farmer prices	the sector has challenges that are mainly in the domain of national governments, there are cross border trade chances that will bring into play issues of SPS to be coordinated by EAC
	Sheep and Goats (Shoats)	The major challenges for shoats are quite similar to those of beef cattle production under pastoralism but more specifically: deteriorating quality of rangelands; recurrent droughts and civil strife; poor adoption of more productive sheep and goats. Tending for shoats and cattle calves/immatures under pastoralism is usually done by youth and women: as pressure mounts for kids to be taken to school, there will definitely a labor supply constraint that will have to be addressed	There are EAC opportunities for investment to develop the rangelands, upgrade livestock breeds and improve access to markets and information
	Poultry	High cost of feed for modern broiler and eggs has been keeping consumer prices high and hence sustaining pressure for imported products; there are many poultry diseases that lead to loss of investments especially by smallholders; poorly developed value chains and processing capacity	There are opportunities for knowledge sharing of scientific information regarding breeding, feed making and sourcing for cheaper ingredients; there is an increasing demand for traditional/free range chicken and many producers have developed an interest, but demand and supply linkages especially in urban markets need to be fully studied and understood; strong links with the cereals sub-sector that need to be exploited; and opportunities for linking farmer groups with urban retail outlets such as supermarkets and hotels. EAC would have an interest on SPS matters as cross border trade expands. Opportunities on market for eggs
	Camels	The challenges as the same as for pastoral beef production	Opportunities for value addition on camel milk and branded meat (dried camel meat)
6) Fisheries	**Fish (rivers, lakes and marine)**	There are concerns about over fishing, and use of trawler nets in the EAC lakes; territorial rights conflicts especially between Uganda and Kenya (the latter with the smallest portion of Lake Victoria); increasing illegalities; trading and processing of immature fish; and high fishing effort. Other constraints are: inadequate implementation of	The demand for fish and fish products is trending upwards due to rising per capita incomes and dietary changes favoring white meat. Due to the shared nature of the water resources in EAC, there is a high potential for proper harmonization of investments and regulations having a big impact on the fishing

		agreed measures; limited cold chain infrastructure; high post-harvest losses especially among the small pelagics; manufacturing, importing and trade in illegal gears; illegal unreported and unregulated (IUU) fishing and low investment in deep sea fishing; invasive aquatic weeds, alien species, pollution of rivers causing extinction of some fish species. There are also problems arising from low public investment and poor institutional and policy/regulatory support: poor state of landing beaches (lack of facilities like power supply and proper sewage management); poor compliance with food safety regulations in foreign markets; malpractices by the larger fish operators and in some cases sexual abuses and spread of communicable diseases and HIV/AIDS. EAC is not optimally exploiting the abundant marine resources in its exclusive economic zones due to inadequate harmonization and coordination of small fishing operations, low capacity for naval surveillance, lack of capital and poor organization of small operators, and lack of clear regulations and legislations and enforcement. Generally, there is a tendency for fisher folks to overly rely on fishing as a source of income thus leading to under-development of alternative income sources such as agriculture. Over-reliance on one income source creates vulnerability in terms of household food security and nutrition	industry in the region. Harmonized waste management policies would lead to preservation of endangered species and fish growth rates that exceed rates of harvesting (currently at a mismatch). There are opportunities for: increasing fish processing and exports to external markets (e.g. Nile Perch and pelagics); value addition and creation of employment especially among the women and youth; training and building capacity in the fishery industry (fishery academic programs and skills have not been emphasized in colleges)
	Fish (aquaculture)	Main challenges relate to capital intensity of initial investments inadequate supply of quality fingerlings; high cost and low quality of feeds and limited extension services; limited research, innovation and technology transfer, limited producer organizations network, limited access to farming equipment, imports of cheap aquaculture products from developed countries, especially Asia. poorly developed value chain; inadequate power and roads infrastructure; low processing capacity; inadequate	The demand for fish is rising and fish farming is an opportune substitute for fish from natural environments; there are also opportunities for EAC to coordinate joint technical training programs and harmonization of legislations and compliance with SPS requirements. Developed fish processing establishments; availability of fresh water resources; availability

		freight and port capacity for exporting fish; and asymmetry in access to market information. For smallholder operators, some of the challenges relate to poorly developed ponds and marketing management skills and poor compliance with market requirements (e.g. with respect to quality and food safety)	of key ingredients for fish; domestic and regional markets for fish; mariculture; and, sea weed farming,
7) Horticulture	**Fruits and vegetables (pineapples and bananas)**	Kenya has remained as the dominant exporter in the Eastern Africa region over many years. However, a large proportion of the horticulture industry within the EAC is still at infancy and is based on smallholders with limited resource capacity to meet stringent foreign market requirements. Horticulture exports and imports for other EAC countries are still negligible (e.g. Rwanda and Uganda export less than 50,000 tons each annually thus suggesting opportunities that could be tapped provided that productivity is increased and standards in the lucrative EU market are met. Supporting grassroots infrastructure and farmer-based marketing institutions are usually poorly developed; low domestic consumption; Poor infrastructure: major areas of concern are low capacity of refrigerated containers (Refas); lack of power hook-up points on railways transport together with management/produce mishandling lead to close to 40 percent in post-harvest losses. Low levels of value addition; export markets have highly restrictive safety and quality requirements; poor enforcement of regulations due to low (human and equipment) capacity. Ground handling facilities at airports is monopolistically concentrated at JKIA in Nairobi compelling producers to have lengthy and costly ground haulage. And, due to poor infrastructure and air connectivity with other African capital cities, intra African trade in fruits and vegetables is	International trade in horticultural products is estimated to grow at a rate of about 7 percent per year, compared with only 2 percent for staple crops thus offering opportunities, especially for smallholders. Horticultural products offer substantial prospects for export growth within EAC due to the relative proximity to the lucrative European markets; intra-African trade and other nontraditional markets remain under exploited as incomes and urban populations grow. EAC can have substantial impacts by supporting collaboration in capacity building; sharing of market information; cross border trade facilitation, especially at customs points in order minimize transit losses and quality deterioration; building and sharing capacity for SPS regulations; sharing of infrastructural facilities and technological equipment; and, joint promotions and trade missions in foreign markets; and, support to small traders and exporters to produce in bulk especially for large markets like USA (under AGOA). Fruits with potential for scaling up are: passion fruits, avocado, mangoes, banana and pineapples–only the latter, currently dominated by Delmonte in Kenya, is regularly exported in large volumes.

		limited (EAC fruits and vegetables thus ironically reach west African consumers from Holland).	Opportunities for value addition exist but will need policy support aimed at improving technical skills and access to capital
	Floriculture	The main challenges are a highly sensitive market in Europe; capital intensive production, especially imported green houses and irrigation equipment; high inland transport costs (poor roads and power supply) and limited air freight capacity; over reliance on the same market destinations where there are stiff competition; poorly organized regional marketing system and information flow. There are also environmental concerns about the over use of fertilizers and agrochemicals in the industry. Intra-African trade is equally depressed due to a number of infrastructure related challenges (see above under fruits and vegetables). Capital and labor intensive, competition from other export countries	With rapid urbanization and a growing middle class, regional demand for flowers and ornamentals is bound to increase; EAC can make contributions in brokering discussions on building capacity for scaling up production and improving infrastructure in order to increase cross border trade; scaling up production and improving road and air transport for both flowers and fruits/vegetables can make investments on a regional Auction mart a worthwhile consideration

Annex 3: Intra-EAC Trade (million USD)

Country	Flow	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Burundi	Export	5.5	5.5	6.6	6.0	12.6	24.4	16	32.6	14.3	13.9
	Import	60.9	79.6	84.7	129.1	89.4	267.1	147.2	346.3	163.9	160.7
	Balance	-55.5	-74.2	-78.1	-123.1	-76.8	-242.7	-131.2	-313.8	-149.6	-146.8
Tanzania	Export	157.8	205.9	259.9	323.5	394.2	416.8	519.8	1,120.0	601.0	992.3
	Import	175.5	110.1	205.0	316.9	295.5	378.0	678.6	397.0	709.9	289.3
	Balance	-17.7	95.8	54.9	6.5	98.7	38.8	-158.8	668.9	-108.9	703
Uganda	Export	265.0	401.5	582.2	588.6	613.4	649.7	761.0	782.9	797.9	909.9
	Import	372.9	400.8	513.4	488.5	530.7	723.7	676.4	647	725.3	673.9
	Balance	-107.9	0.7	68.8	100.1	82.7	-71.8	86.1	136.4	76.8	239.4
Kenya	Export	740.9	945.6	1,193.4	1,167.2	1,278.7	1,544.7	1,596.4	1,450.9	1,430.8	1,291.3
	Import	80.6	191.5	182.3	162.2	256.8	302.9	365.1	334.5	416.9	409.5
	Balance	660.3	754.1	1,011.0	1,005.1	1,021.8	1,241.8	1,231.4	1,116.4	1,013.8	881.9
Rwanda	Export	37.0	45.4	141.8	48.1	55.2	81.2	343.5	122.5	142.2	120.2
	Import	276.0	245.8	383.7	436.5	340.7	384.9	447.8	413.2	546.2	519.1
	Balance	-239.0	-200.4	-241.9	-388.4	-285.5	-303.8	-104.3	-290.7	-404.1	-398.9
EAC	Export	1206.2	1603.9	2183.9	2133.4	2354.1	2716.8	3236.7	3508.9	2986.2	3327.6
	Import	965.9	1027.8	1369.1	1533.2	1513.1	2056.6	2315.1	2138.0	2562.2	2052.5
	Balance	240.3	576.1	814.8	600.2	841.0	660.2	921.6	1370.9	424.0	1275.1

Source: EAC Facts and Figures, 2016

Annex 4: EAC Agricultural Investment Implementation Matrix (2018-2025)

Thematic Priority Investment Area	Specific Interventions	Current Status/Baseline	Objectively Verifiable Indicators	Means of Verification	Implementing Agency	Budget `000 USD
1. Increasing Regional Food Supply	1.1. Strengthen capacity for coordination of regional agriculture research and technology dissemination	Capacity for coordination of agriculture research and technology dissemination at the secretariat is weak	-Regional research coordination framework established and/or strengthened -Regional policies on bio-safety harmonized	Catalogue of programs and policies Secretariat reports M&E reports	Ministries of Agriculture, Trade, and East African Affairs of the Partner States Private Sector Associations in the agribusiness value chain EAFF EAC Secretariat LVFO EABC	2,950
	1.2. Reduce the cost of agricultural production by developing an effective input supply and distribution system	Framework for production and distribution of inputs (e.g. seed, animal breeds, fertilizers breeding materials, animal feeds) is currently weak and uncoordinated especially for inclusion of smallholders>>cost of inputs therefore high	-Cost of inputs especially seed, fertilizer, breeding materials, animal feeds reduced	Survey reports and catalogues of input pricing		1,650
	1.3. Promote efficient use of water resources for agriculture	Region is generally water deficient. Current technology does not promote efficiency in water use.	-Irrigated area in Partner States expanded	National irrigated area reports		1,665
	1.4. Reduce post-harvest losses	Between 25-40 percent of harvested crop and 15-25 percent of fisheries and livestock produce goes to waste due to inadequate post-	-Reductions in post-harvest losses achieved Reducing post-harvest losses by		EAC Secretariat Ministries of Agriculture, Environment and EAC Affairs EAGC	1,575

Thematic Priority Investment Area	Specific Interventions	Current Status/Baseline	Objectively Verifiable Indicators	Means of Verification	Implementing Agency	Budget '000 USD
		harvest management. The figure during drought and disease outbreaks – significantly higher and poses a threat to food and nutrition security.	50% by 2025 as per Malabo Declaration targets		Certification Agencies	
	1.5. Expand and deepen regional trade and market access for agricultural commodities	NTBs and regulatory impediments to trade persist in the region	-Trade policies harmonized and implemented -Status of NTBs and regulatory mapped.		Ministries of Finance, Trade Agriculture, EAC Affairs, Security, Health EAGC SPS Agencies	2,125
	1.6. Develop capacity for exploitation and utilization of regional maritime food resources	Low capacity for surveillance Poor mapping of marine resources Low levels of investment in technology for exploitation by public and private sector	-Regional maritime management authority established and/or strengthened		Ministries of Natural Resources, Agriculture, Fisheries, Defense, Infrastructure	175,000
	1.7. Strengthen resilience of production systems	Weak capacity for responding to and mitigation of production risks Low uptake of agricultural insurance	-Framework for comprehensive risk management and transfer formulated and implemented		Ministries of EAC Affairs, Agriculture, Livestock and Fisheries, Finance, Banking and Insurance	175,000

Thematic Priority Investment Area	Specific Interventions	Current Status/Baseline	Objectively Verifiable Indicators	Means of Verification	Implementing Agency	Budget '000 USD
	1.8 Strengthen and harmonize regional market information systems for crops, livestock and fishery products/resources	Uncoordinated marketing information systems Limited access by producers and traders to markets information	Regional channel/ Network for dissemination of marketing information established Number of producers and traders accessing marketing information		EAC, Partner States	3,000 7,000
	1.9. Prevention and control of plant and animal pests and diseases including TADs	Prevalence of trade sensitive diseases in the region	Programs for surveillance and control of plant and animal pests and diseases including TADs planned and implemented No of Animals vaccinated annually	Annual vaccination Reports, calendars		
	1.10 Strengthening commercial/large-scaling farming					
	1.11 Support development of commercial aquaculture					
	1.12 Eliminate IUU fishing by strengthening the regional Monitoring, Control and Surveillance	Regional MCS not functioning adequately	A functioning regional MCS mechanism		Regional fisheries actors	

Thematic Priority Investment Area	Specific Interventions	Current Status/Baseline	Objectively Verifiable Indicators	Means of Verification	Implementing Agency	Budget '000 USD
	mechanism					
Sub-Total 1						359,965
2.Enhance Food Utilization	2.1. Ensure that transformation delivers on broad-based needs, by ensuring inclusivity, sustainability and effective nutrition beyond what the market can deliver	Weak institutional capacity for transparently targeting and managing social protection programs	-Discernible reductions in status of malnutrition -Incremental food diversification index -Access to food by vulnerable segments including poor lactating mothers -Social protection policies and implementation initiatives developed	National Nutrition Survey reports	Ministries of EAC Affairs, Agriculture, Livestock and Fisheries, Health, Labor	1,550
	2.2. Promote programs for health and nutrition dimensions of food security Blending and food fortification of staples with traditional foods such as sorghum, millet and cassava	High incidence of: - undernourishment - underweight children under the age of 5 - stunting and wasting -Obesity -Nutritional deficiencies and diseases	-Health and Nutrition programs implemented in each Partner State. -Prevalence of undernourishment reduced -Prevalence of underweight children under the age of 5 reduced -Prevalence of stunting and wasting reduced -prevalence of	National Nutrition Survey reports	Ministries of EAC Affairs, Agriculture, Livestock and Fisheries, Health, Labor, private sector	3,000

Thematic Priority Investment Area	Specific Interventions	Current Status/Baseline	Objectively Verifiable Indicators	Means of Verification	Implementing Agency	Budget '000 USD
			obesity and nutritional diseases reduced. Number of food products fortified and/or blended			
	2.3. Promote food safety and awareness and harmonize policies and strategies	Low level of awareness and capacity for compliance Low enforcement capacity	- Food safety standards developed and publish - Regional food safety policies and strategies domesticated at country level	Food safety Standards Awareness reports.	Ministries of EAC Affairs, Agriculture, Livestock and Fisheries, Planning, Health	1,650
	2.4. Articulate a regional policy and national responsibilities regarding safety, potential threats and retrogressive stereotypes against the handicapped, marginalized/ minorities and people living with disabilities/ illnesses	-Inadequacy of data No regional policy; lack of information; inadequate recognition on the status of the handicapped, marginalized/ minorities and people living with disabilities/ illnesses	-Regional database of the handicapped, marginalized/minorities and people living with disabilities/illnesses developed -National actions harmonized	Catalogue of databases and national actions	Ministries of Justice, AG EALA, Human Right Commissions	2,050
Sub-Total 2						6,450

Thematic Priority Investment Area	Specific Interventions	Current Status/Baseline	Objectively Verifiable Indicators	Means of Verification	Implementing Agency	Budget '000 USD
3. Promote value addition in strategic value chains	3.1 Catalyze flows of capital (especially commercial lending and private investment) to scale up agribusinesses.	Low levels of value addition and limited product diversification occasioned by: a) Unpredictable supply of raw materials c) Lack of technologies d) High wage rates e) Intellectual property laws	-Comprehensive agro-value chain studies carried out in support of investment -Feasibility studies for support to public private partnerships in large scale agro-processing zones		Ministries of Agriculture, East African Affairs, Trade of the Partners States EADB, AfDB, EAGC EAFF CMAs, Standards Bureaus	2,425
	3.2 Establish regional centers of excellence for strengthening skills development for various commodity value chains	Currently none but there are universities and colleges in EAC training in various aspects that can support VA	-Regional and national standards institutions strengthened -Exchange programs (value chain actors, trainers and trainees) conducted -Training programs/curriculums harmonized at EAC level	Status reports of regional standards institutions Exchange Training reports	Ministries of Education, Agriculture, Justice, EAC Affairs NARIs	1,225
	3.3 Support establishment of agribusiness incubators with special tax concessions	Inadequate/nonexistent policy on agribusiness incubation	-Regional strategy for agribusiness incubators developed -Agribusiness incubation facilities established		Ministries of Industrialization, Agriculture, Trade, EAC Affairs	1,195
	3.4 Establish a framework for facilitating structured commodity trade to minimize commodity	-Legislative processes on-going at national levels -Structured commodity trade at infancy across	-National and regional legislative and regulatory framework finalized		Ministries of Agriculture, East African Affairs, Trade of the Partners States	2,075

Thematic Priority Investment Area	Specific Interventions	Current Status/Baseline	Objectively Verifiable Indicators	Means of Verification	Implementing Agency	Budget '000 USD
	supply risks	the region East Africa Commodity Exchange (EAX)			EADB, AfDB, EAGC; EAFF; CMAs, Standards Bureaus	
	3.5 Harmonize strategies for negotiating market access for the region's value added products (e.g. tax and other TBT, EPAS, investments and technologies that promote value addition)	Regional strategy for enhancing market access for value added products is at variance with national interests	Number of key value chains on which has been built Level of investment in value adding infrastructure	Secretariat reports	Ministries of Trade, Agriculture, Foreign Affairs, EAC Affairs	3,225
	3.6 Support development and implementation of harmonized standards for agricultural commodities, and their technical regulations.	Inadequate standards	Number of standards developed and harmonized. State of implementation of harmonized standards	Catalogue of standards.	Ministries of Trade and Agriculture, National standards board's/bureau and private sector.	2,000
Sub-Total 3						12,145
4. Build capacity for sustainable natural resource use and management	4.1 Promote sustainable management and governance for efficient use of shared ecosystems and resources	Inadequacies in implementation of existing legislative framework for governing transboundary ecosystems and	Regional legislative framework for governance and management of transboundary ecosystem and resources developed	EALA Hansard and Secretariat reports	EALA EAC Secretariat Ministries of Agriculture, Environment, Water & Irrigation and	3,000

Thematic Priority Investment Area	Specific Interventions	Current Status/Baseline	Objectively Verifiable Indicators	Means of Verification	Implementing Agency	Budget '000 USD
		resources Inadequate programs to address cross border natural resource use and management	Programs developed	Trans-boundary management plans for livestock and fisheries	EAC Affairs	
	4.2 Enhance resilience of livelihoods and production systems and risk management	Partner States at different levels of development and implementation of strategies for managing climate risks	Strategic framework for risk management and comprehensive mitigation of climate induced production risks developed and implemented -Number of PPPs established for risk transfer	Catalogue of strategies developed and implemented	Ministries of Agriculture, Environment and EAC Affairs	1,245
	4.3 Promote forest conservation and agro-forestry in shared ecosystems.	Low forest cover and limited farm forestry	Forest cover increased	Forestry reports	Ministries of Environment, Agriculture and National Forestry Authorities.	2,000
	4.4 Support to water catchment conservation for biodiversity and climatic amelioration	Water catchment degradation	Water catchment areas improved	Annual Agriculture and Environment reports	Ministries of Environment, Agriculture and National Forestry Authorities	2,000
Sub-Total 4						2,920
5. Strengthen capacities of regional agricultural institutions	5.1 Strengthen coordination capacity of EAC secretariat's productive sector	Technical capacity at the EAC Secretariat (number of technical personnel in different disciplines) does not	-Work load analysis conducted -Optimal personnel compliment (commensurate with	Work load analysis report Summit approvals and Partner States	EALA EAC Summit ReSAKSS	6,125

Thematic Priority Investment Area	Specific Interventions	Current Status/Baseline	Objectively Verifiable Indicators	Means of Verification	Implementing Agency	Budget '000 USD
		match the work load thus compromising the delivery of its mandate	work load) deployed	ratifications		
	5.2 Develop a score card framework for regional peer review for program implementation and achievements	No regional platform for self-evaluation	-Dialog for consensus building on peer review mechanism held -Strategies for peer review developed -Council and summit approvals obtained - Peer review implemented		EAC Secretariat National Cabinet Offices Ministries of EAC Affairs and Agriculture and Finance Private sector associations (e.g. EAGC	1,660
	5.3 Establish hub for agricultural statistical data and strengthen a framework for information sharing at EAC and Partner States	-Inadequate data base (in terms of quality/reliability and timeliness) to facilitate planning at national and regional levels -Low capacity (personnel and infrastructure) for data management; more pronounced at the regional level -Poor commitment by the relevant institutions for sharing of available data -Data in custody of many different institutions but poorly harmonized	-Institutional capacity (personnel and infrastructure) for data management improved, regionally and nationally -Policy and strategy for data collection and sharing developed and adopted	Approval by Councils for Planning and Agriculture	Ministries of Planning; Agriculture; and Bureaus of Statistics ReSAKSS	137,500

Thematic Priority Investment Area	Specific Interventions	Current Status/Baseline	Objectively Verifiable Indicators	Means of Verification	Implementing Agency	Budget '000 USD
	5.4 Develop a common strategy for enhancing private sector investment in agriculture	Lack of clarity of incentives, including unpredictability of policy environment to support private sector investment in agriculture Public investment crowding out the private sector initiatives (e.g. food staples, seed industry, multiplicity of taxes for export commodities like horticultures, tea and coffee)	Appropriate incentives, including policies and PPPs harmonized and implemented	Catalogue of incentives provided	-Ministries of agriculture, trade, finance, and EAC Affairs -Investment authorities EAC	1,160
	5.5 Promote regional agricultural investment forums targeting the domestic private sector in the region	Inadequate budgetary provisions to facilitate collaboration and networking by agribusiness sector players	-Convene a regional bi-annual agribusiness forum -Install and support a regional organizing secretariat	Reports of investment forums	Ministries of Agriculture, East African Affairs, Trade of the Partners States EADB; EAGC; EAFF	5,275

Thematic Priority Investment Area	Specific Interventions	Current Status/Baseline	Objectively Verifiable Indicators	Means of Verification	Implementing Agency	Budget '000 USD
	5.6 Enhancing synergies, capacity and governance of regional agricultural institutions including farmer organizations (promoting adherence to rules and regulations)	Inadequate budgetary provisions to support and facilitate collaboration and networking by agribusiness sector players Agenda is driven by donor funding and therefore unsustainable, low regional ownership	-Studies to map commodity institutions (mandates, linkages to primary producers, capacities and market access initiatives) -Policy dialogue forums to build consensus -Media publicity for awareness creations -Support to capacity building	Reports (studies, Training,) promotional materials	Ministries of Agriculture, East African Affairs, Trade of the Partners States EADB; EAGC; EAFF	1,220
Sub-Total 5						152,415
6. Monitoring and Evaluation (M&E)	6.1 Develop a RAIP M&E Framework	EAC CAADP Results Framework	RAIP M&E Framework developed	RAIP M&E Status report	EAC and Partner States	1,000
	6.2 Implement, monitor and evaluate the regional investment plan	-ReSAKSS and SAKSS National and Regional Mechanisms for reporting progress -Continuous data collection, analysis and review of progress -Country and national level validation workshops -Commission mid-term evaluation studies				5140
Sub-Total 6						6,140
GRAND TOTAL						**540,035**

Annex 5: The RAIP Implementation Plan (2018-2025)

Thematic Priority Investment Area	*Interventions*	Cost Centers (Tasks)		YEAR					Total '000
		Short Term	Medium/Long Term	I	II	III	IV	V	USD
1. Increasing Regional Agricultural production and Food Supply	***1.1 Strengthen capacity for coordination of regional agricultural research and technology dissemination***	Strengthen coordination capacity of EAC Secretariat Strengthen collaboration among the NARES in knowledge management and sharing Provide necessary equipment and facilities	Establish research and regulatory centers of excellence Mapping ongoing interventions within existing centers of excellence	350	450	575	725	850	2,950
	1.2 Reduce the cost of agricultural production by developing an effective input supply and distribution system	Conduct feasibility study for manufacture of agricultural inputs in EAC Promote regional innovative input distribution systems and financing mechanisms Streamline port operations and inland transportation	Harmonize policies and provide incentives for manufacture of inputs in EAC Harmonize farm input certification and trade regulations Enhance local and regional capacity for specialized technology transfer	450	450	350	300	100	1,650
	1.3 Promote efficient use of water resources for agriculture	Commission studies on: i) Feasibility of river basin development; ii) Regional water resources mapping and planning; iii) Review existing water catchment utilization treaties Develop regional framework to facilitate adoption of efficient water harvesting, conservation and	Improve water infrastructure and sanitation along regional trade routes Build capacity for efficient use of water resources for production, fisheries and transportation Strengthen the legal and institutional framework and capacity for sustainable integrated water resource management	315	325	355	350	320	1,665

Thematic Priority Investment Area	*Interventions*	Cost Centers (Tasks)		YEAR					Total '000
		Short Term	Medium/Long Term	I	II	III	IV	V	USD
		utilization technologies							
	1.4. Reduce post-harvest losses	Undertake joint publicity campaigns and coordinated training programs on post-harvest management Harmonize EAC quality assurance standards, SPS measures, and traceability Harmonize strategies for prevention, surveillance and control of transboundary pests and diseases	Facilitate the establishment and harmonization of optimal use of infrastructural capacity along transboundary value chains Facilitate the development of human capacity to manage implementation of quality assurance standards Develop coordinated preparedness and protocol for responding to trans-boundary disease and pest outbreaks	285	300	315	330	345	1,575
	1.5. Expand and deepen regional trade and market access for agricultural commodities and fisheries	Commission studies to review policies hindering intraregional trade and opportunities for structured trade Strengthen trade policy, regulatory and institutional framework to eliminate NTBs Promote coordinated development of agro-industrial parks in EAC	Promote structured trade initiatives Support /establish development of boarder market infrastructure and amenities at one stop border posts Strengthen the capacity of cross border trade actors, facilitators and private and public service providers	350	400	425	450	500	2,125
	1.6. Develop capacity for exploitation and utilization of regional maritime food resources	Strengthen policy, legal and regulatory frameworks that govern the utilization of shared marine and inland water resources Strengthen the monitoring, control/regulation/enforc	Establish and maintain a regional Fisheries Organization (Explore the feasibility of expanding mandate of LVFO to cover all shared marine and inland water resources. in the region) Facilitate access to affordable fish harvesting and handling equipment and technologies	15,000	35,000	45,000	45,000	35,000	175,000

Thematic Priority Investment Area	*Interventions*	Cost Centers (Tasks)		YEAR					Total '000
		Short Term	**Medium/Long Term**	**I**	**II**	**III**	**IV**	**V**	**USD**
		ement and surveillance framework for optimal exploitation of marine resources	Promote diversification of livelihoods within the communities of EAC Partner States that depend exclusively on shared fisheries resources						
	1.7. Strengthen resilience of production and distribution systems	Formulate a framework for comprehensive risk management in agriculture including a post-disaster recovery plan Promote capacity for enhancement of resilience to agricultural sector risks along the value chain Establish a harmonized protocol for guiding EAC Partner States on responding to exogenous market and non-market shocks	Promote agricultural insurance in EAC (establish a regional agriculture risk capacity; and, underwrite support to reinsurance capacity) Strengthen regional capacity for provision, management and governance of agro-climatic early warning systems Improve coordination capacity for disaster preparedness, risk analysis, response, climate change adaptation, mitigation and management	20,000	45,000	50,000	35,000	25,000	175,000
Sub-Total 1				36,750	81,925	97,020	82,155	62,115	**359,965**
2. Enhance Food Utilization	***2.1. Ensure that transformation delivers on broad-based needs, by ensuring inclusivity, sustainability and effective nutrition beyond what the market can deliver***	Commission studies and promote awareness on social protection	Support policy dialogue on strategies for social protection	200	350	350	350	300	1,550
	2.2. Tackle health and nutrition	Support policy dialogue to review and reach	Monitor progress in implementation	200	250	250	250	250	1,200

Thematic Priority Investment Area	*Interventions*	Cost Centers (Tasks)		YEAR					Total '000
		Short Term	**Medium/Long Term**	**I**	**II**	**III**	**IV**	**V**	**USD**
	dimensions of food insecurity	consensus on targets							
	2.3. Promote food safety and awareness and harmonize policies and strategies	Develop and harmonize regional food safety standards	Support policy dialogue on food safety standards	300	350	350	450	200	1,650
	2.4. Articulate a regional policy and national responsibilities regarding safety, potential threats and retrogressive stereotypes against the handicapped, marginalized/minorities and people living with disabilities or illnesses	Develop policy on pertinent issues Coordinate joint publicity campaigns	Support policy dialogue to delineate responsibilities and assess progress	450	500	450	350	300	2,050
Sub-Total 2									**6,450**
3. Promote value addition, agribusiness and agro-industry	***3.1. Catalyze flows of capital (especially commercial lending and private investment) to scale up agribusinesses. Establish a special purpose facility at***	Studies to chart options for establishment of special purpose investment facility Benchmark with similar RECs Develop / harmonize policies and strategies	Regular Policy dialogues Dialogue to Council and Summit approvals	725	625	475	375	325	2,425

Thematic Priority Investment Area	*Interventions*	Cost Centers (Tasks)		YEAR					Total '000
		Short Term	Medium/Long Term	I	II	III	IV	V	USD
	the EADB for leveraging investment for agribusiness promotion and values addition								
	3.2. Establish /recognize regional centers of excellence for strengthening skills development for various commodity value chains	Studies to identify options Coordinate negotiations	Policy dialogue Build institutional capacity Lobby private/public partnerships to build infrastructure and equipment	225	245	250	275	225	1,225
	3.3. Support establishment of agribusiness incubators with special tax concessions	Studies to identify options	Policy dialogue	220	225	250	275	225	1,195
	3.4. Establish a framework for facilitating structured commodity trade to minimize commodity supply risks	Studies to identify options including benchmarking Develop policy and strategy of implementation	Regional Policy dialogue	375	395	415	435	455	2,075
	3.5. Build consensus on strategies for negotiating market access for the region's value	Provide plat forms and for a for consensus building. and strategies for negotiations Initiate negotiations with trading partners (c.f.	Policy dialogue to create broad based awareness	450	525	675	750	825	3,225

Thematic Priority Investment Area	*Interventions*	Cost Centers (Tasks)		YEAR					Total '000
		Short Term	**Medium/Long Term**	**I**	**II**	**III**	**IV**	**V**	**USD**
	added products (e.g. tax and other TBT, EPAS, investments and technologies that promote value addition)	regional AGOA strategy)							
Sub-Total 3									**12,145**
4.Build capacity for sustainable natural resource use and management	***4.1. Promote sustainable management and governance for efficient use of shared ecosystems and resources (fisheries, wildlife and tourism, pastoralism animal health, infrastructure)***	Assessment of institutional architecture and roles	Strengthen existing regional institutions to manage shared ecosystems and resources Support policy dialogue aimed at creating broad based awareness about optimal use and management of shared resources	425	350	375	275	250	1,675
	4.2. Enhance resilience of livelihoods and production systems and management of risks	Harmonize policies and strategies for coordination of regional climate smart adaptation Policy dialogue on options for harmonization and way forward	Leverage funding Coordinate implementation and review implementation progress	225	235	250	260	275	1,245
Sub-Total 4									**2,920**

Thematic Priority Investment Area	*Interventions*	Cost Centers (Tasks)		YEAR					Total '000
		Short Term	**Medium/Long Term**	**I**	**II**	**III**	**IV**	**V**	**USD**
5. Strengthen capacities of regional agricultural institutions	***5.1. Strengthen coordination capacity of EAC secretariat's productive sector to improve its effectiveness to deliver on its mandate***	Provide adequate personnel, office space, equipment and operating expenses (c.f. institutional architecture review conducted in 2013)	Conduct forums bringing together Secretariat with regional research institutions and other think tanks	750	875	1250	1500	1750	6,125
	5.2 Develop a scorecard framework for regional peer review of program implementation and achievements	Dialogue for consensus building on peer review mechanism	Establish strategy for peer review Secure Council and Summit approval Implement peer review	225	275	285	375	500	1,660
	5.3 Establish an EAC hub for agricultural statistical data and strengthen a framework for information sharing as a pillar for accelerated agricultural development	Dialogue for consensus on priority value chains and data collection and sharing protocols Develop data management standards (precision, frequency equipment) Dialogue on strategies for engaging the private sector structures	Establish regional data management infrastructure Resource requirements for establishment and maintenance of the data hub	12,500	27,500	30,000	32,500	35,000	137,500
	5.4 Develop innovative strategies for enhancing private sector investment in agriculture	Commission study to assess the current status of challenges and opportunities	Establish regional incentive structures for private sector investment in agriculture	205	220	225	245	265	1,160

Thematic Priority Investment Area	*Interventions*	Cost Centers (Tasks)		YEAR					Total '000
		Short Term	**Medium/Long Term**	**I**	**II**	**III**	**IV**	**V**	**USD**
	5.5 Promote regional agricultural investment forums targeting the domestic private sector	Liaise with regional trade associations Convene a regional bi-annual agribusiness forum	Install and support a regional organizing secretariat	1,250		1,750		1,750	4,750
	5.6 Enhance synergies, capacity and governance of regional agricultural institutions (promoting adherence to rules and regulations)	Studies to map commodity institutions (mandates, linkages to primary producers, capacities and market access initiatives) Support to capacity building	Policy dialogue forums to build consensus Media publicity for awareness creations	215	235	250	245	275	1,220
Sub-Total 5									**152,415**
6 Monitoring and Evaluation	***Program implemented monitored and evaluated***	Develop a RAIP M&E Framework		500	500				1000
		Continuous data collection, analysis and progress reviews		500	500	500	600	200	2300
		Annual assembly for implementation of progress		100	100	100	120	120	540
		Biannual review to assess progress			200		250		450
			Commission mid-term review in the 4th year and stakeholder review workshops					1850	1850
Sub-Total 6									**6,140**

Thematic Priority Investment Area	*Interventions*	Cost Centers (Tasks)		YEAR					Total '000
		Short Term	Medium/Long Term	I	II	III	IV	V	USD
GRAND TOTAL									**540,035**