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**FOOD SECURITY IN IGAD COUNTRIES: UNFINISHED AGENDA OR UNATTAINABLE GOAL?**

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**ABSTRACT**

*Intergovernmental Authority on Development (IGAD) is a Regional Economic Community comprising eight member countries, namely: Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda. The objectives of the IGAD are to expand the areas of regional co-operation, promote policies of peace and stability, sustainable development, alleviate poverty and achieve food security in the region. The IGAD region despite its abundant natural resources, the member countries have suffered from serious food insecurity. The constraints of food security are linked to protracted conflicts, high population growth, shrinking arable land, deforestation and land degradation, frequent extreme weather events and climate change-induced droughts, low utilization of modern farm inputs, inadequate investment in agriculture, poor natural resource management and weak economic cooperation and low trade among the member countries. This paper argues that IGAD member countries have the resources that would enable them to achieve food security. The member countries, however, need to renew their political will to peace and stability and demonstrate their commitment to address their food security challenges. With renewed political will, more resources would be released for people-centered development programs that would contribute to the achievement of food security. To this end, the following interventions are suggested: (i) renewal political will of all member countries and their demonstrated efforts to national and regional peace and stability and resolve all conflicts through legal and peaceful means in order to release more resources that could be used for productive investment; (ii) Transformation of traditional farming system through investment in modern farm inputs to increase agricultural productivity; (iii) Proactive government support for broadening livelihood opportunities of vulnerable groups to ensure their sustainable livelihoods; (iv) Sustained investment in community-based extensive natural resource conservation measures to reverse deforestation and land degradation; (v) Strengthening economic cooperation among IGAD member countries through harmonization of their trade policies and (vi) Increase investment for building manufacturing sector capability in order to boost their export revenue, and subsequently sustain large food imports to fill their domestic food production and food demand gaps.*

**KEYWORDS**

IGAD countries, food security.

**1. INTRODUCTION**

Ensuring food security has been the focus of policy agendas of many national governments around the world because agriculture is a source of livelihoods for around 86 percent of rural people (WB, 2007:23). Agriculture is fundamental to enhance broad-based economic growth and creation of wealth, achievement of food security and poverty alleviation (WB, 2007; FAO, 2009). However, today, poverty and hunger are widespread throughout the world. It is considered that there are 1.4 billion people in the world living in extreme poverty, including 925 million who suffer from hunger and more than 200 million children under five who suffer from malnutrition (UN, 2012:4). Food insecurity has remained a major challenge in many developing countries because the agricultural sector has faced several constraints, including heavy reliance on rain-fed, rapid population growth, land degradation and poor natural resource management, climate change adverse effects, lack of investment and low usage of modern farm inputs and low productivity (Rakotoarisoa et al, 2011). Managing food security, thus, requires an understanding these constraints and the impact of agricultural policies on food productivity and on the poor and vulnerable segments of populations in rural and urban areas (Ahmad and Farooq, 2010).

In the era of globalization, regional economic integration has become an attractive option to the achievement of food security through promotion of intra-regional trade and investment which would culminate into inclusive and sustainable growth of member countries (ECA, 2011). Regional economic integration refers to the commercial policy of reducing or eliminating trade barriers between the states joining together to create economic community (Salvatore, 2004). From a wider perspective, regional integration involves the following functions: (i) strengthening of trade integration in a region; (ii) creation of an appropriate enabling environment for private sector development; (iii) development of infrastructure programs in support of economic growth and regional integration; (iv) development of strong public sector institutions and good governance; (v) reduction of social exclusion and the development of an inclusive civil society; (vi) contribution to peace and security in the region; (vii) formulating environment policies at the regional level; and (viii) strengthening of the region's interaction with other regions of the world (Olu and Dauda, 2015:1).

The Intergovernmental Authority on Development (IGAD) is a Regional Economic Community comprising eight founding member countries, namely: Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda. Food security and political stability remain major concerns among the IGAD member countries. Economic cooperation and market access also underpin IGAD's approaches to its objectives of food security, drought and disaster reduction as well as maintenance of regional peace and security (Byiers, 2016).

**2. STATEMENT OF THE PROBLEM**

The IGAD was established in 1986 as the Intergovernmental Authority on Drought and Development (IGADD) with mandate to jointly deal with the issues of drought and desertification (HESPI, 2001). In 1996 it was transformed into IGAD, a regional economic community, with four main mandates: food security and environmental protection; infrastructural development; conflict prevention, management and resolution; and humanitarian affairs (IGAD, 2013; IGAD, 1996).

The region has a land area of 5.2 million square kilometers and the population of around 217 million (IGAD, 2007:11; HESPI, 2011:1). The economic mainstay of the IGAD countries is rain-fed agriculture. Sixty percent of the total land area of the region is classified as arid, with less than 500 mm of annual rainfall (IGAD, 2007:16). The region is prone to hazards related to climate change, making it one of the most vulnerable regions in Africa. Low and erratic rainfall often results into cyclical droughts, making rainfall an important climate factor of food insecurity in the region (IGAD, 2007). The region is divided into lowland and highland areas, with different land use and livelihood patterns. In the highland areas, which have high population density, sedentary farming and crop production is more prevalent. In the lowlands, people are predominantly engaged in and dependent on nomadic livestock livelihood (Afun-Ogidan and Weijer, 2012, p.13). The region has also experienced intra and inter-state conflicts. The conflicts have brought immense human suffering, loss of lives, displacement of people, and destruction of property and shortage of food (IGAD, 2007; IGAD, 2009).

Since its establishment, IGAD has formulated various strategies to achieve food security and maintenance of regional peace and stability. These include: (i) Formulation of Food Security Strategy 2005-2008 (Mohamed and Zziwa, 2005). (ii) Formulation of strategic and implementation plan 2004-2008 on policy harmonization, capacity building, development of information systems and research and technology; formulation of IGAD's Environment and Natural Resource Strategy 2004-2008, with the objective to enhance the integration of environmental and natural resources into development frameworks for environmentally sustainable development (IGAD, 2007). (iii) Formulation of Drought Resilience and Sustainability Initiative Strategy which aims at addressing the effects of drought and related

shocks in the region in a sustainable and holistic manner (IGAD, 2013). The IGAD countries also envision integration of their economies through removal of their tariff and non-tariff barriers (IGAD, 2013: 11).

Within their broad development strategies, the individual IGAD member countries have also formulated their food security strategies which focus on (i) increasing their domestic food production; (ii) integration of climate change into their development policies and strategies; (iii) investing in their human resources development; (iv) development of their non-agricultural sectors which have high export potentials; (v) strengthening their agricultural research and irrigation infrastructure; and (vi) revitalizing their livestock sector development and (vii) management of their natural resources (Lines, 2009; HESPI, 2011).

Notwithstanding with the ongoing regional and national level development efforts, some studies indicate that the region has a 15 per cent cereal food deficit of about 4 million metric tons annually (Mochoge and Zziwa, 2004:1). In 2009, for example, food deficit in the region reached 5 million tons of cereals (IGAD, 2009:15). The region is still one of the poorest regions in the world that has not achieved most MDGs by 2015, while awaiting tremendous challenges to meet the seventeen United Nations Sustainable Development Goals during 2016-2030 periods (UN, 2015).

### 3. OBJECTIVES OF THE STUDY

Many developing countries including the IGAD member countries have been facing tremendous challenges in achieving food security by ensuring access to food for their growing population. In order to achieve the level of food security, developing countries need to formulate a comprehensive development strategy and implement effectively various development projects with the objectives to: (i) improve smallholder productivity and market access; (ii) promote domestic and foreign trade; (iii) expand productive social safety nets; (iv) mitigate the effects of climate change by integrating it into development strategies and policies at all levels; and (v) harmonize food security and sustainability policy (Fan, 2010). In line with this spirit, a summit of the African Union was held in Maputo in 2003 which ended with the adoption of the Maputo Declaration. The declaration consists of goals for African countries to enhance their economic growth, end hunger, reduce poverty, and work on their agricultural reforms pertinent to policy and capability issues in the agricultural sector, targeting an annual average growth rate of 6% in agricultural production by 2015. To these ends, a decision was also reached to allocate a 10% of the national budget in each country to agricultural programs (African Union, 2003:1). Agreement was also reached to implement the Comprehensive Africa Agriculture Development Program (CAADP) to boost their agricultural productivity. The CAADP is based on four pillars: extending the area under sustainable land and water management system; improving rural infrastructure and trade-related capacities for market access; increase food supply, reducing hunger and improving responses to food emergencies; and improving agricultural research, technology dissemination and adoption (Afun-Ogidan and Weijer, 2012). These policies reflect that ensuring food security and sustainable economic growth and poverty reduction are top national priorities of Africa countries.

Considering that the agricultural sector is the main sources of livelihood and food security in the IGAD member countries, the overall objective of the study is to examine the current state of food security and the major causes of food insecurity in the countries. The specific objectives are to: (i) review and analyze the food security situation in the member countries; (ii) identify and analyze the main factors which contribute to food insecurity in the member countries; and (iii) suggest policies that would contribute to the achievement of food security in the IGAD member countries.

The central research questions of the study are: Why IGAD countries with diverse resources have been structurally food insecure over several decades? What factors have contributed to their food insecurity? What policy interventions are required to make the IGAD member countries food secure?

### 4. METHODOLOGY

This study is based on extensive literature review to gather secondary data from textbooks, various studies, reports, research and publications of academic institutions, relevant documents of international organizations and national policy documents. The Secondary data are contextualized and analyzed to suit the objectives of the study.

Following sections 1-4, section five deals with conceptualizing food security and food security strategy. Section six is the main body of the paper and it deals with assessment of food security situation in the IGAD countries, while section seven analyses the main causes of food insecurity in the IGAD member countries. Section eight is a synthesis of the main sections of the paper; it analyzes whether the IGAD member countries could achieve food security in the foreseeable future. Section nine offers suggested interventions which are expected to promote peace and stability, development and food security at national and regional levels.

## 5. CONCEPTUALIZING FOOD SECURITY AND FOOD SECURITY STRATEGY

### 5.1 CONCEPTUALIZING FOOD SECURITY

According to FAO (2003) "Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 2003). Food security has four main dimensions: availability, access, utilization, and stability of food (ECA, 2011:1). (i) Food availability refers to the physical existence of food. It is the sum of domestic food production, food imports, food aid and changes in the national food stock. Availability of food is a prerequisite for people to meet their basic food needs. If the national food supply is not sufficient to meet the minimum consumption requirements of all people in all places at all times, food insecurity is inevitable (NEPAD, 2004). (ii) Food access refers to households' ability to obtain food through a combination of production, purchase, gifts and transfers. Problem of access may occur even when the overall supply of food is sufficient, because people may not have the purchasing power to acquire food from the market. (iii) Utilization of food refers to how well individuals utilize the food they access, including sufficient energy and nutrient intake and their ability to absorb nutrients (iv) Stability of food supply depends on availability, access and utilization of the food. Stability of food supply captures vulnerability of people to future disruptions on food security (Specia, 2013).

### 5.2 FOOD SECURITY STRATEGY

Often, food security strategy in developing countries comprises two inter-connected strategies, namely national and household levels of food security strategies. With respect to national level food security, developing countries can choose between two types of food security strategy: (i) strategy of food self-sufficiency, which requires that all food needs of a country have to be met through domestic food production and (ii) a strategy of self-reliance which underpins that availability of food in a country is the most important either produced domestically or sourced by means of international trade (Dijk, 2011). Most economists would agree that self-sufficiency is not a viable food security policy as it fails to acknowledge potential gains of trade that are created by international differences in factor endowments, technology and environmental factors such as climate, availability of arable land and water resources. Countries that secure their food supplies by a combination of domestic production and imports are considered self-reliant rather than self-sufficient.

At household level food security strategy includes enhancing the productive capacity of smallholders, strengthening purchasing power of people through promotion of labor intensive micro and small enterprises development and by expanding public assistance programs targeted at the poor and the vulnerable groups (Mohammed and Zziwa, 2005). The national and household level approaches to food security are in line with the UN 2000-2015 Millennium Development Goal 1: eradicate extreme poverty and hunger and with the recently adopted UN Sustainable Development Goal 1: end poverty in all its forms everywhere; and Goal 2: end hunger, achieve food security and improved nutrition and promote sustainable agriculture which are expected to be achieved during the period 2016-2030 (UN, 2015). Food security is also enhanced by governments' food policies. Effective food policy helps governments to work in terms of the equation of food supply to food demand (Ellis, 1992). On the supply side, food policy is concerned with food production, its rate of growth, amount of food imports and food aid. On the demand side, food policy is concerned with the adequacy of food consumption and access to food to all individuals.

## 6. FOOD SECURITY SITUATION IN IGAD COUNTRIES

In this section, five indicators of food security are used to assess the situation in the IGAD countries: (i) availability of food from domestic production; (ii) cereal import dependency; (iii) food stability and national vulnerability to food insecurity; (iv) food aid dependency; and (v) access to food and incidence of poverty.

**i) Availability of food-** is the key determinant of food security. A country will not be able to achieve food security if it cannot ensure availability of food in the domestic market. The agricultural sector is the main source of food availability and a primary source of food and income for most rural households. In the IGAD

region, domestic food production contributes 84 percent of total food availability (HESPI, 2011:11). Table 1 shows that cereal production varied among IGAD member countries during the 2000-2011 periods. Annual average growth rate of cereal production was highest in Ethiopia (7.5%), while a negative growth rate was recorded in Somalia (-3.1%). The main driver of cereal production growth in the IGAD member countries has been through expansion of their agricultural lands. The Table also shows that average annual growth rates of cereal yield in the IGAD countries remained below the world level of 5% during 2000-11 periods. As a result, growth in food demand outpaced that of crop production per capita for several products such as wheat, corn, sugar, oilseeds and maize (ECA. 2011:11).

TABLE 1: CEREAL PRODUCTION AND YIELD IN IGAD COUNTRIES 2000-2011

Country	Total Area cultivated in ,000 ha	Per annum Growth (%)	Total Yield in ,000 hg/ha	Per Annum Growth (%)	production Total in , 000 tons	Per Annum Growth (%)
	2011	2000-11	2011	2000-11	2011	2000-11
Djibouti	0	1.4	20	0.8	0	2.2
Eritrea	446.6	2.8	5.8	4	258.1	6.8
Ethiopia	9690.7	2.8	18.3	4.6	17761.2	7.5
Kenya	2679.6	3.3	15.1	0.9	4058.6	4.2
Somalia	570.8	0.6	4.9	-3.6	279	-3.1
Sudan (former)	9929.2	4	5.6	1	5598	5
Uganda	1702	2	20.8	2.8	3536	7.3
World	707328.2	0.6	36.6	5	2589143.3	2.4

Source: FAO, 2014, p.94.

ii) **Cereal import dependency-** The gap between domestic food production and food demand in the IGAD countries have been narrowed through food imports. Table 2 shows that all IGAD countries imported substantial quantities of cereals from the world markets during 2000-2011 periods. In 2011, for example, the highest cereal importing country was the Sudan, and its imports was 2,140.6 thousand tons, followed by Kenya whose import was 2,229 thousand tons, while the lowest import was recorded by Eritrea and its cereal import was 303.2 thousand tons.

TABLE 2: CEREAL IMPORTS OF IGAD COUNTRIES 2000-2011 (in thousand Tones)

country	2000	2009	2010	2011
Djibouti	68.6	560.6	183.3	619.5
Eritrea	292.9	252.2	219.9	303.2
Ethiopia	1165	2229.2	2134.1	1850.8
Kenya	1165	2710.8	1420	2229
Somalia	261.1	610.9	362.7	469.2
South Sudan	.	.	.	.
Sudan (Former)	1312.5	2384.8	2539.5	2140.6
Uganda	172.3	513.7	463.7	531.2

Source: FAO, 2014:111.

IGAD countries aiming to tackle their high food import bills and resolve food insecurity have two options: (i) reduce their cereal imports, boost their agricultural production and agricultural export diversification and (ii) increase their revenues through increased exports from non-agricultural sectors such as services and mining to finance their food import bills (Rakotoarisoa et al. 2011). IGAD countries which are constrained by inadequate arable lands in their effort to increase their food production need to focus on promoting exports of their non-agricultural products, particularly their manufacturing sector. Building the capabilities of their manufacturing sector is expected to enable IGAD member countries to increase their export revenues, and subsequently sustain large food imports.

iii) **Food stability and national vulnerability to food insecurity-** stability of food supply in the IGAD countries is influenced by fluctuation in their domestic food production, world food price, quantities of their food imports and food aid received. The percentage value of food imports to the total value of merchandise exports shows a country's vulnerability to food insecurity through exposure to changes in the terms of trade (FAO, 2014). The higher the vulnerability of a country to food insecurity, the more will be its food insecurity. During 2008-2010 periods, Eritrea's value of food imports in terms of the value of its merchandise exports was the highest in the group, amounting 8.6 times of its exports, while that of Djibouti was 5.6. The Sudan at only 0.15 times of its exports had the lowest ratio in the group. Eritrea followed by Djibouti were the most financially constrained countries and vulnerable to the change in the terms of trade in the world market, while the Sudan was the least financially constrained and least vulnerable to change in the terms of trade, mainly because of its large export revenue.

TABLE 3: VALUE OF FOOD IMPORTS AS % OF TOTAL VALUE MERCHANDISE EXPORTS IN IGAD COUNTRIES, SELECTED YEARS

country	1990-92	1999-2001	2008-10
Djibouti	247	298	561
Eritrea	.	197	861
Ethiopia	.	52	61
Kenya	18	23	27
Somalia	80	81	140
South Sudan	.	.	.
Sudan (former)	42	21	15
Uganda	14	26	31

Source: FAO, 2014:57

iv) **Food aid dependency** – IGAD member countries often face food shortage, particularly during droughts. The international community has been responding to food crisis in the IGAD region through providing humanitarian food aid. Table 4 shows that with the exception of Eritrea, the trend of food aid dependency was increasing during 1990-2010 periods. Eritrea's food aid inflow declined from 257 thousand tons in 2000 to nil in 2010, a reflection of the Government's policy stance against food aid dependency, while exerting efforts to boost its domestic food production. The highest food aid recipient country was Ethiopia, whose food aid increased from 864 thousand tons in 1990 to 1415 thousand tons in 2010. Persistent increase in food aid reduces food price in the market, and as a result reduces incentive of local producers to invest in agriculture. Food aid also distorts consumption patterns of the local people in favor of food aid and food imports.

TABLE 4: FOOD AID RECEIVED BY IGAD COUNTRIES 1990-2010 (in thousand tones)

country	1990	1995	2000	2005	2010
Djibouti	9	20	12	21	10
Eritrea	0	104	257	32	0
Ethiopia	864	636	1527	1122	1415
Kenya	90	80	201	155	258
Somalia	98	53	61	40	72
Sudan (former)	230	82	182	931	476
Uganda	47	77	87	293	80

Source: FOA 2013:96

v) **Access to food and poverty**- access to food is primarily determined by peoples' income, food prices and the ability of people to access social support of food. Table 5 shows that during the period 2005- 2010, IGAD member countries experienced an annual average growth of gross domestic product (GDP) per capita of 13.3%, much higher than the world average growth rate or average growth rate of sub-Saharan Africa (SSA), which stood at 5.2% and 7.9% respectively. Growth of GDP per capita, however, varied substantially among the IGAD countries, Ethiopia being at the top with 19.3%, while at the bottom was Kenya with 8.5%. The high GDP per capita growth rates, however, were mainly reflections of the low initial per capita income of the people in the countries and had little impact either to substantially reduce poverty. Whatever GDP growth, there was in the IGAD countries under review, were concentrated on narrow sectors, namely services, construction, transport and mining. Although agricultural growth is the primary source of poverty reduction in agriculture-based economies of IGAD countries, the agricultural growth remained low, negatively affecting the livelihoods of the rural population (Isatou et al, 2013:7. The IGAD countries with the exception of Kenya are categorized least developed countries because of their low income per capita. Table 5 shows that during the period 2005-2010, average annual per capita income of the IGAD countries stood at USD 525, which was much lower than that of SSA, at USD 1109. The low per capita income suggests that large segments of the population in the IGAD countries are too poor to access food in the market.

TABLE 5: GDP PER CAPITA IN IGAD COUNTRIES 2005-2010 (in USD)

Country/Region	Annual average per capita income (USD /person per year)	Annual Average growth rate in per capita income (%)
	2005-2010	2005-2010
World	8276	5.2
SSA	1109.1	7.9
IGAD	525	13.3
Djibouti	1034	8.8
Eritrea	304	10.5
Ethiopia	284	19.3
Kenya	705	8.5
Sudan	1169	15.5
Uganda	420	10.7

Source: Karugia, Joseph et al. 2011 :34

As shown in Table 6, during 2007-2011 periods, Ethiopia with 87.3% of its population categorized as poor tops the list, while Djibouti with 29.3% had the lowest proportion of poor people. The major contributory factor for poverty is low income in the majority of the population. The overall reflection of Table 6 is that food insecurity has affected large segments of the populations because of lack of income, a reflection of high level of poverty in rural and urban areas. This indicates that there is a nexus between poverty and food insecurity, one affecting the other. In rural areas, poverty limits farmers' capacity to increase production by limiting their access to modern farm inputs. Poverty also affects food security directly by reducing peoples' access to food available in the markets.

TABLE 6: POPULATION IN MULTIDIMENSIONAL POVERTY IN IGAD COUNTRIES 2007-2011

Country	Head count %	intensity of deprivation%	population in severe poverty	contribution of deprivation to overall poverty %		
				Education	Health	Living standards
Djibouti	29.3	47.3	12.5	38.3	24.6	37.1
Eritrea	..	..	..	..	..	..
Ethiopia	87.3	64.6	71.1	25.9	27.6	46.5
Kenya	47.8	48	19.8	12.7	30.1	57.2
Somalia	81.2	63.3	65.6	34.2	18.6	47.2
Sudan	....	....	....	...	..	...
Uganda	69.9	52.5	31.2	29.7	17.3	53

Source; UNDP, 2013:160

## 7. MAIN CAUSES OF FOOD INSECURITY IN THE IGAD MEMBER COUNTRIES

The main factors of food insecurity in the IGAD member countries include the following:

### 7.1 CONFLICT AND POLITICAL INSTABILITY

Since their independence, the declared objectives of the IGAD member countries have been overcoming their underdevelopment, achievement of food security through enhancing their socio-economic development with the ultimate goal of establishing modern societies that are economically and technologically developed. Furthermore, following the establishment of IGAD, it was expected to serve as a vehicle for achieving regional peace and stability, promotion of development and integration among the member countries in the region. Contrary to the expectation, development efforts underway in the IGAD countries have been challenged by various intra and inter-state conflicts. The current conflicts in the region include civil war in Darfur, protracted state collapse in Somalia, border conflict and deep hostility and a stalled peace process between Ethiopia and Eritrea, fresh conflict and a fragile peace agreement between the government and rebels in South Sudan, and periodic bouts of unrest in northern Uganda (Healy, 2009).

Three key conflicts in the IGAD region which have complicated regional peace and stability are the fragmentation of Somalia, the separation of Sudan and South Sudan, and the unresolved border dispute between Ethiopia and Eritrea (SDC, 2013:6). The Somali sub-conflict is at the core of regional fragility because it has strong regional impacts in the adjoining regions of South-Eastern Ethiopia and North-Eastern Kenya, and beyond (Ibid). Every conflict involves interests of external actors which have regional implications. The conflicts in the IGAD region have also attracted the external actors, and in the eye of many have even led to undue interventions to uphold their global interest in the strategically located Horn of Africa and beyond (Copson, 1994; Deresso, 2014; Müller, 2016). This is mainly because external powers tend to put their interests at the top because conflict situations are ideal environments where they secure, protect and advance their interest regardless the interests of the conflicting parties (Garang, 2015).

To date, the intra and inter-state conflicts in the IGAD region have afflicted and exacted heavy tolls on the lives of people of the IGAD member countries. Conflict has a direct negative impact on agricultural production by breaking down public order, infrastructure, social capital, institutions and productive assets; it is also the main cause for mass displacements of already marginalized populations, thereby intensifying hunger and putting vulnerable populations even more at risk of

food insecurity (Mohamed and Zziwa , 2005). According to SDC (2013) there are more than 1 million refugees and around 1.3 million internally displaced people hosted by the countries of the IGAD region.

When seen in the context of the overall regional conflict environment, it is clear that the IGAD is far from providing an institutional basis for regional stability in the Horn of Africa (Healy, 2009. The region continues to experience different types of conflicts clearly illustrates that the IGAD had to contend with conflicting interests among its member countries (Ibid). To date, the various conflicts in the region have complicated development challenges facing the countries, making achievement of food security rather remote. Besides, persistent conflicts in the IGAD region have posed challenge not only to the security of the peoples in the region but also to the rest of the world, including the global powers (Council of the European Union, 2011). Thus, there is an urgent need to deal with the various conflicts in the IGAD region. Analysis of conflict resolution methods is beyond the scope of this paper. However, it is understandable that the various forms of the conflicts in the IGAD region have to be resolved on case by case basis using traditional approach and internationally accepted conflict resolution mechanisms. To this end, a prime requisite is renewal of political will of all member countries and their demonstrated efforts to national and regional peace and stability and to resolve all conflicts through legal and peaceful means. Resolving the various conflicts in the IGAD region has dividends in the form of releasing more resources from security that could be used for productive investment in other sectors, particularly agriculture; it would also send positive signal to the world community that the region is on the path of durable peace and stability, which in turn would attract inflow of foreign direct investment. The inflow of foreign direct investment in turn would enhance sustained economic growth which would contribute to achievement of food security in the region.

**7.2 LAND DEGRADATION AND EXTREME WEATHER EVENT-INDUCED DROUGHT**

Eighty percent of the IGAD region’s total area consists of lowland, with arid, semi-arid or dry sub-humid climates, and Ninety-five percent of the food grown in the IGAD countries is rain-fed, making agricultural production vulnerable to adverse weather conditions (Niemi and Manyindo, 2010:ii). People in the dry lands have particularly remained exposed to risks and threats of various order, intensity and frequency of drought. Often, droughts adversely affect the four dimensions of household food security: availability, access, utilization and stability. In the densely populated highlands, continuous farming without adequate fallow of the farm lands has resulted in rapid soil exhaustion, and has become a major factor for decline of crop yields. The low crop yields have been exacerbated by overgrazed farmlands and land degradation (Moyo, 2013). Land degradation and extreme weather event-induced droughts have become major hindrance to the achievement of food security through reduction of crop and livestock production (IGAD, 2007:15).

Irrigation is one means which increases crop yield. However, as shown in Table 7, the percentages of irrigated lands in the IGAD countries were below the average world irrigated land of 18% in 2003. Somalia had the highest percentage of irrigated land, 15.7%, of its crop land, followed by the Sudan, constituting 10.2% of its crop land, while the other IGAD countries have irrigated lands far below the world average, which is 18% of the world crop land. IGAD member countries still lack basic agricultural infrastructure such as irrigation dams, agricultural research centers, meteorological services, storage facilities and the lack of such infrastructures have limited their capacity to substantially increase their cereal productivity (Rakotoarisoa et al, 2011)

**TABLE 7: IRRIGATED LAND AS PERCENTAGE OF CROP LAND IN IGAD COUNTRIES**

Column 1	2001	2002	2003
World	17.9	17.6	18
Djibouti	3.7	3.7	3.5
Eritrea	3.7	3.7	3.5
Ethiopia	2.5	2.7	2.5
Kenya	1.6	1.6	1.8
Somalia	18.7	16.3	15.7
Sudan	11.3	11.2	10.2
Uganda	0,1	0.1	0.1

Source: Rakotoarisoa et al., 2011:37

**7.3 INADEQUATE ARABLE LAND AND HIGH POPULATION GROWTH**

Expanding arable land is a way to increase agricultural production required to meet the growing demand for food. During the period 1961-2009, 45% of the growth in crop production in Africa was attributed to expansion of arable land, compared to 30% for the world. On the other hand, increase in crop yield accounted for 55 percent, while at world level, increase in crop yield accounted for 70 percent (FAO, 2013:104). During the period 2000-2003, cereal yields in the least developed countries in which most IGAD member countries belong to were half of other developing countries (UNCTAD, 2006). If farmers in the IGAD countries were to achieve the level of yield of farmers in other developing countries, then output of cereals would easily double and meet the rising demand for food in the IGAD region (WB, 2012:iii).

Table 8 shows that IGAD countries differ in their availability and degree of utilization of their arable lands. The Sudan and Ethiopia are at the top with potential arable lands of 86,728 and 42,945 hectares respectively. Based on Table 8, the IGAD member countries can be divided into four categories in terms of their potentials for expansion of their arable lands: (i) those with a large arable land, where agricultural expansion is still possible (Sudan, Ethiopia and Kenya). The Sudan has the highest proportion of potential arable land in the IGAD region; it has only utilized 15% of its potential arable land. (ii) those which have the possibility to expand their agricultural land before they reach to a limit (Somalia and Uganda; (iii) The country which is close to its limit in expanding its arable lands (Eritrea). It has exploited 88% of its potential arable land. (iv) the country which has no significant arable land to be cultivated due to extreme aridity of its potentially arable land (Djibouti).

**TABLE 8: ACTUAL AND POTENTIAL ARABLE LAND IN IGAD COUNTRIES**

country	Potential arable land in ,000 Ha	actual arable land in 1994 in ,000 Ha	Potential arable land actually in use %
Djibouti	0	0	0
Eritrea	590	519	88.0
Ethiopia	42,945	11,012	25.6
Kenya	15,845	4,520	28.5
Somalia	2,381	1,020	42.8
Sudan	86,728	12,975	15.0
Uganda	14,169	6,800	48.0

Source: IGAD, 2007:80

High population growth has also contributed to food insecurity through rapid increase in food demand. During the period 2000-2005, the average annual growth rate of the population in the IGAD member countries varied in the range of 2%-4% compared to the world annual growth rate of 1.2% (UNDP, 2013:196-197). Large numbers of women of child bearing age, low level of women education, lack of employment opportunities in the formal sector, low socio-economic security and socio-cultural value which favor more children are the main factors of high population growth in developing countries, including IGAD member countries (Todaro and Smith, 2012). With rapid increase in population, increase in food production in the IGAD region through expansion of agricultural land is not sustainable because the agricultural frontier is likely to close in the foreseeable future. As shown in Table 9 IGAD countries have less than one hectare of arable land per person, which is much smaller than 2 hectare, FAO uses as a threshold measure of a small farm size (IFAD, 2013:10). Shrinking of arable land in the IGAD countries has also been aggravated by foreign investors seeking large arable land on a lease basis in the IGAD region; this is a phenomenon of ‘land grabbing’ which has displaced smallholders from their farm lands, with negative effect on their food security (Glopolis, 2013; Kariuki, 2011; Moyo, 2013). Improving productivity and

sustainability of smallholder farming is thus the main pathway out of poverty and achievement of food security in using agriculture for development. IGAD countries would be required to swiftly shift to intensive farming to improve their agricultural productivity in the future. This is because accelerated growth requires a sharp productivity increase in smallholder farming combined with more effective support to the millions coping as subsistence farmers, many of them in remote areas (WB, 2007).

TABLE 9: ARABLE LAND PER PERSON IN HECTARES (Ha) IN IGAD COUNTRIES

countries	1991-200 average	2001-2004 average	2005
Djibouti	0	0	0
Eritrea	0.13	0.10	0.10
Ethiopia	0.20	0.18	0.20
Kenya	0.20	0.20	0.10
Somalia	0.19	0.18	0.20
Sudan	0.50	0.50	0.50
Uganda	0.23	0.20	0.20

Source : Rakotoarisoa et al 2011:34

#### 7.4 LOW UTILIZATION OF FERTILIZER AND INADEQUATE INVESTMENT IN AGRICULTURE

In the foreseeable future, growth strategy for most agriculture-based economies has to be anchored on development of their agriculture (WB, 2007). However, traditional farming practices in Africa have mined soil nutrients, with average removal of more than 24 kg/ha/year of nitrogen, phosphorus, and potassium, and the organic sources are not sufficient to replace these nutrients (Wallace and Knäusenberger 1997: vi). Average fertilizer use in Africa has historically been low, 10 Kg/Ha (Wallace and Knäusenberger 1997: vi). During the period 2000-2003, the average fertilizer consumption in Asian least developed countries was 44 Kg/ha, compared to 7 Kg/Ha in the least developed countries of Africa in which most IGAD countries belong to (UNCTAD, 2006:178). Table 10 shows that fertilizer consumption in IGAD countries was 9.8 kg/ha, far below the average fertilizer consumption in the COMESA region, which was 33.5 Kg /ha during 2002-2009 periods. Reduction of soil fertility and low fertilizer utilization are major factors for low crop yield. For example, during the period 1990-2010, annual average growth rate in maize yield in Kenya and Uganda, was -0.6% and 0.3% respectively (Karugia, Joseph et al. 2011:12).

TABLE 10: FERTILIZER CONSUMPTION IN IGAD COUNTRIES (Kg/Ha of Arable land)

	2002-2009	2002-2009
	Annual average Kg/ha (level)	(Annual average (%) change)
COMESA	33.5	-0.1
IGAD	9.8	5.4
Djibouti	NA	NA
Eritrea	2.1	-26
Ethiopia	13.2	8.9
Kenya	32.2	2.4
Sudan	4	6.9
S. Sudan	....	....
Uganda	1.6	7.3

Source: Karugia, Joseph et al. 2011 :40.

Other drivers of low yield in the IGAD countries are lack of access of smallholder farmers to financial services, lack of improved production technology, inadequate irrigation infrastructure, poor land and water management and the decline of governments' expenditures on agriculture (NEPAD, 2004). Experiences of the successful East Asian countries indicate that high levels of domestic savings sustained the East Asian economies through high level of investment in different sectors, including agriculture (WB, 1993). In the least developed countries in which most IGAD countries belong to, investment in agriculture has been low because of their low domestic capital formation, constituting 13.6% of their GDP in 1999-2003 periods. This domestic capital formation is far below the required rate of 25% GDP considered necessary to reach a growth rate of real GDP of 7% (UNCTAD, 2006: 30-105).

## 8. DISCUSSION, CONCLUSION AND SUGGESTION

This section is a synthesis of the previous sections, and provides two analytically coherent possibilities on future food security in IGAD member countries: (i) Food insecurity in IGAD countries is likely to continue in the foreseeable future; and (ii) achievement of food security is conditionally possible in the foreseeable future.

**(i) Food insecurity will continue (business as usual perspective)** – to date, most policies which intend to address the structural constraints of food security in the IGAD member countries have not been fully successful. The business as usual scenario assumes current trends: low investments in the agricultural sector, continuation of existing agricultural policies and natural resource management. In addition, the Horn of Africa is a region where short-term shocks often lead to inadequate domestic food production and interruption of sustainability of development process (Burgess, 2009). Under business as usual perspective, short-lived economic crisis in the IGAD member countries tend to easily turn into a self-perpetuating vicious cycle, and the countries do not seem to easily return to a path of sustained economic growth. Furthermore, given that the IGAD region's strategic location and the long history of conflicts and the mutual mistrust among the IGAD member countries, the conflicts are likely to sustain in the foreseeable future. This means that most IGAD member countries are more likely to divert their scarce resources to their security, while compromising their investments in other productive sectors, particularly agriculture. The food insecurity situation will also be aggravated by the rapid population growth, low crop yields, extensive deforestation and land degradation and the anticipated increase in the frequency of droughts and extreme weather events. All these would have adverse effect on domestic food production and in the widening of the gap between domestic food production and food demand. The anticipated widening gap between domestic food production and demand is likely to make the IGAD member countries to depend more on food aid to narrow their gaps. In the business as usual perspective, the objective of the IGAD member countries to achieve food security is more likely to be elusive both at the national and household levels.

**(ii) Achievement of food security is conditionally possible** -it is important to underscore that the IGAD member countries' future economic development lays not so much in their present state of poor accomplishments but in the promise and potentials of the countries for their socio-economic development. The IGAD member countries have hard working populations that are yet to be fully mobilized productively for their countries' socio-economic development. The IGAD region is also endowed with vast arable land of 47.8 million hectares, which is potentially able to produce adequate food that would meet the demand the population in the region (Abdi and Seid, 2013:21). The IGAD region has also various natural resources, such as oil and gas reserves, alternative energy resources such as hydro-electric, geothermal and solar, diverse ecosystems, marine, water and livestock resources (Ibid).

Achievement of food security requires a broader approach to address the multi-faced development challenges facing the IGAD countries. The IGAD member countries, however, have never been short of development policies. But such policies, to date, have not been fully successful in the achievement of food security and alleviation of poverty in the countries. Now, the counties need to renew their political will and demonstrate their commitments to end the scourge of underdevelopment and conflicts that have afflicted the population. The pattern of mutual interference in each other's internal affairs needs to be broken in order to build the basis for stable and prosperous IGAD region. Furthermore IGAD member countries need to build their democratic institutions at every level to ensure responsive governance practices; they also need to cultivate democratic values and promote social justice in their respective societies. Opposition forces/groups are also expected to demonstrate their commitment to social justice and democratic principle rather than promote ethnic/religion -based politics that tends to perpetuate sectarian violence. This argument is in recognition of the fact that the IGAD member countries must forge lasting solutions, and build democratic

societies which eliminate all forms of marginalization and exclusion of any ethnic group or region within their territories. External powers are expected to encourage the democratic process while refraining from interventions which are costly to the people of the IGAD region.

This paper is optimistic that IGAD member countries have the capabilities to achieve food security when viewed from the perspective of many successful developing countries and the available stock of knowledge and technology in the agricultural science. Asia's green revolution and agricultural modernization in many Latin America, for example, were based on the combination of increased access of farmers to a package of modern agricultural technologies. This agricultural package includes high-yielding varieties of seed, chemical fertilizers and pesticides, and irrigation and improvements in rural infrastructure (Diao, et al. 2008). IGAD member countries could draw on lessons from the successful experiences of these countries to increase their agricultural productivity. The member countries have also resources that would enable them achieve food security. Achievement of food security and raising the living standard of the people in the IGAD member countries would be expected with the renewed political will and with demonstrated commitment of the countries to regional peace and stability. With renewed political will of the governments to peace and cultivation of norms of coexistence and tolerance in their respective societies, more resources would be released for people-centered development programs. When seen from people-centered development perspective, food security is achievable and remains a high priority, an ongoing but unfinished agenda in the IGAD region. If the overall political and policy climate in the IGAD region is to manifest, the region would easily move along the path of inclusive sustainable development which ensures food security both at national and household levels.

## 9. SUGGESTED INTERVENTIONS

The following interventions/measures are suggested to overcome IGAD's food security challenges. (i) Renewal of political will of all member states and opposition groups and their demonstrated efforts to national and regional peace and stability and resolve all conflicts through legal and peaceful means in order to release more resources that could be used for productive investment. (ii) Transformation of traditional farming system through investment in modern farm inputs to increase productivity of small holders. (iii) Proactive government support for broadening livelihood opportunities of vulnerable groups to ensure their sustainable livelihoods. (iv) Sustained investment in community-based extensive natural resource conservation measures to reverse deforestation and land degradation. (v) Strengthening economic cooperation among IGAD member countries through harmonization of their trade policies. (vi) Increase investment for building manufacturing sector capability in order to boost their export revenue, and subsequently sustain large food imports to fill their domestic food production -demand gaps.

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