

# Food Sovereignty in the Era of Land Grabbing: An African Perspective

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## Abstract

Food is a basic human right. One of the humanity's significant achievements has been to produce adequate food for the largest growing population. However, the co-existence of chronic hunger and malnutrition with presence of adequate capacities to address it is one of the gravest paradoxes of our time. In one-third of African countries the average daily calorie intake remains below the recommended level of 2100 kcal. The need and importance for greater food sovereignty has emerged out of broader concerns over the negative impact of world's food system on food security and environmental sustainability. Adoption of the food sovereignty principles are essential to empower local communities to have greater control over their productive resources, use and sustain ecologically friendly means of production, and access local markets as well as nutritious and culturally accepted food. The majority of African farmers are smallholders. However, the existing trend of land grabbing in Africa seriously affects food sovereignty in an unprecedented level. Based on the secondary sources, this paper explores different dimensions of the complex relationship between food sovereignty and land grabbing in African countries. It also analyses the various aspects on how the ongoing process of land grabbing in Africa affects food sovereignty which in turn leads to food insecurity of millions. The introduction of intensive agricultural production, due to land grabbing often based on a transformation of complex farming systems for commercial purpose can seriously threaten biodiversity. There is a need to balance the local circumstance while favouring large scale agricultural projects.

**Keywords:** desertification, food security, food security governance, food sovereignty, land grabbing

## 1. Introduction

Food is one of the essential needs of people and a basic human right. One of the humanity's significant achievements has been to produce adequate food for the largest growing population. The global food production grew significantly faster than world population over the past several decades due to the advancement of science and technology and development of irrigation facilities (Shapouri & Rosen, 2009). Remarkably, the agricultural production system has been able to produce enough food to provide every one with an adequate diet. Yet one-fifth of the people in developing countries do not have enough to eat to ensure dignified livelihood and are experiencing hunger, malnutrition and starvation (Shaw, 2001). The doctrine of right to adequate food is indivisibly linked to and closely connected with the inherent dignity of people. Its realization remains indispensable and becomes the foundation for the fulfillment of other human rights provided in different legal frameworks (CESCR, 1999). However, the co-existence of chronic hunger and malnutrition especially in the global-South with presence of adequate capacities and appropriate mechanisms to address it is one of the gravest paradoxes of our developmental discourse. This serious trend is not only morally repugnant and unacceptable but politically, economically and socially indefensible under any justifiable grounds (Shaw, 2001). Also the global community stands indicted for knowing different mechanisms and instruments about how to reduce the number of food insecure people, but not doing so (Shaw, 2007).

An adequate food supply is an essential condition for addressing hunger and malnutrition. However, the enhanced food supply alone does not ensure an increased food security for all (Pretty et al., 2003). In developing countries, access to food is closely linked with other socio-economic developmental challenges. Fundamentally, the roots of contemporary food crises including the problem of hunger and malnutrition are not due to lack of food availability but due to lack of access *inter alia* because of poverty, by large section of people mostly the marginalized communities in the developing world (CESCR, 1999). Absolute poverty and income inequality creates the paradox of the unprecedented increase in global food production and persistent existence of hunger

(Shapouri & Rosen, 2009). Today, about one-sixth of global population is extremely poor living in the developing and under developed countries and survive on less than \$1 per day. Also as a result of widespread poverty, nearly 800 million people don't have any means to afford an adequate diet (Ahmed et al., 2007). In developing countries especially in Africa, the issue of access to food has become more complicated and highly determined by the nature of socio-economic growth, the sustainability of environment and the development of infrastructure facilities including road, transport and market access.

Food sovereignty has emerged as an alternative paradigm and driver of change challenging the current food regime, in its efforts to comprehensively address economic, environmental, and right-based concerns in agricultural production methods, consumption patterns, and global trade regime. The nature of agriculture production system and associated problems make Africa unique in the food security governance framework. In today's complex socio-economic and environmental conditions, food security in Africa is possible only through the adoption of food sovereignty principles. However, the land grabbing process, acquisition of large scale productive agricultural land hinders the efforts to achieve food sovereignty. The existing trend of land grabbing, while ensuring food security of someone in somewhere else affects the food sovereignty in Africa which in turn accelerate food insecurity in the region. There is a need to balance the local circumstance while favouring large scale agricultural projects. This paper attempts to analyse different dimensions on how the ongoing process of land grabbing in Africa affects food sovereignty which in turn leads to food insecurity of millions of this food aid dependent continent.

## **2. Food Sovereignty: An Emerging Paradigm in Food Politics**

Food sovereignty is an emerging concept associated with global food politics. This is being considered to be broader and inclusive of all the previously used terms of food security governance framework including food security and right to food (Kannan, 2013). The principles of food sovereignty used for addressing the problems of hunger and malnutrition, as well as promoting rural development, environmental sustainability and ecological balance. Globally, the number of undernourished people has increased by 9% despite a 12% rise in food production since 1990 on a per capita basis. They lack balanced nutrition that is very essential for a healthy and active life (Schutter, 2011). For example, nearly one-third of global population suffers iron deficiency; more than 1.5 billion people are at high risk of iodine deficiency; and 250 million people lack vitamin A (Andersen & Rajul, 1998).

Globally, 33 countries still have an average per capita food consumption of less than the recommended level of 2100 kcal per day (Pretty et al., 2003). Also in one-third of African countries the average daily calorie intake is below 2100 kcal (Boussard et al., 2005). This situation increased the number of 'food insecure' people in Africa-those consuming less than 2,100 calories per day from 300 million in 1992 to nearly 450 million in 2006 (Paarlberg, 2010). In sub-Saharan Africa, the number of people suffering from hunger and malnutrition significantly increased by 20% from 1992 to 2002 (FAO, 2006). As per the estimates, almost 33% of sub-Saharan Africans are malnourished, which is the highest prevalence in the world (Boussard et al., 2005). These conditions create a kind of complicated cyclic trap. For example, lack of balanced nutrition and high prevalence of hunger and malnutrition affects the productivity of people. As a result, they are not able to contribute for the socio-economic development at their optimal level. Lack of socio-economic development in turn hinders easy access to food.

The human right to adequate food is recognized in several legal instruments under national and international law including the International Covenant on Economic, Social and Cultural Rights which deals right to food more comprehensively than any other frameworks (CESCR, 1999). However, food deficiencies in the form of high prevalence of hunger, malnutrition and starvation in poor countries in an era of world of global surpluses underline that the contemporary food security challenges (Barrett & Maxwell, 2005) need a paradigm shift in food security governance with more flexible and pragmatic approach. Also the high prevalence of human hunger starkly illustrates the comprehensive failure of the existing complex global food regime especially the distribution dimension as a result of lack of transportation, storage facilities and market access. Existence of such challenges is high in developing countries especially in Africa considering its nature of development in infrastructure, investment in storage facilities and measures taken to improve market access. The failure of current neoliberal food system called for a more contingent, historically contextual understanding of global agriculture production and distribution system (Eric, 2011).

Food sovereignty emerged as a new, alternative paradigm and driver of change challenging the current food regime, in its efforts to comprehensively address economic, environmental, and equity-related concerns around agricultural production methods, consumption patterns, and trade regime (Wittman, 2011). According to this

paradigm, the existing liberalized international food trade regime and the practice of intensive agricultural production pattern globalize hunger and poverty since in many ways it gradually destroys local agriculture production system and impoverishing a large number of people in rural areas particularly the small scale farming community (Menezes, 2001).

Launched at the World Food Summit (WFS) in 1996 by the peasants' movement *Via Campesina*, the concept of food sovereignty has emphasized the need for prioritizing local agricultural production system based on traditional methods, protecting different rights of farmers related to water and land to produce foods using indigenous knowledge and ensuring people's right to decide policy choices on agriculture and food (Baumüller & Tansey, 2008). Food sovereignty basically a kind of synthesis systematically links the rights of people to consume food with the rights of people to produce food using their own methods (Perfecto et al., 2009). Similarly, food sovereignty principles emphasize diversified and community-based food production systems in harmony with environment and biodiversity without disturbing the ecological balance (Kannan, 2013). Under this framework, the local communities particularly the small scale farmers emerged as the focal point in addressing the contemporary global food crises and ensuring sustainable development.

### 3. Small Farmers: Core of Food Sovereignty

Though ensuring food security requires concerted efforts at different levels, the contemporary food regime undermines the capacity of local communities and their potential for innovation and action at local level (Tansey, 2008) to address hunger, malnutrition and poverty in a sustainable manner. For the international community, addressing global hunger and poverty will remain an impossible mission without focussing small farmers and changing their conditions. Because, today the majority of food insecure people are the small farmers living in third world countries who fulfil at least 70% of the world's food requirements (Gonzalez, 2011). Globally, 80% of the hungry live in rural societies. Among them, half of them are smallholder; 22% are landless laborers; and 8% are pastoralists who live by using natural resources (Tobin, 2009).

Though the large scale investment in agricultural sector may bring more capital, new technology & best agricultural practices, the applicability and utilization of these will not be feasible in the African context as expected than elsewhere. The efficient infusion of new technology needs preparedness and easy access to remote areas. However, the transportation and other infrastructural requirements are some of the critical challenges facing African countries in their efforts to achieve accelerated agricultural growth and sustained food security. Adoption of best practices in agriculture needs efficient urban-rural linkages and constant collaboration of different stakeholder at various levels. Also majority of farmers in Africa, most of them are women have small farms. For example, approximately 33 million are small farms in Africa, representing 80% of all farms in the region. Significantly, two-thirds of all farms in the region have below 2 ha and 90% of farms below 10 ha (Altieri, 2009). The large scale investment in agriculture in the form of land grabbing requires vast track of land to enhance production and productivity through applying chemical fertilizers, high yielding seeds etc. This will seriously affect the small farms in Africa.

For centuries the agricultural base of developing countries were built upon the locally available natural resources, indigenous knowledge and traditional methods of food production. These have nurtured biologically and genetically diverse smallholder farms. This has the potential to adjust the rapidly changing climates, pests, and diseases (Denevan, 1995). The traditional agro-ecosystems engaged by the small farms have the potential to address hunger and poverty (Altieri, 2004). According to WFS (1996), small scale and sustainable agriculture is capable to continuously provide the required food to reduce hunger rather than the industrialized intensive agriculture (Kannan, 2013) since it leads to low ecological diversity and narrow genetic base (Altieri & Victor, 2011). In developing countries, due to lack of diversity in food production, the diets consist mainly of starchy staples, with less access to nutrient-rich sources of food (World Bank, 2007).

A number of studies show that small farms are more capable and productive than large scale production units if total output is taken into account rather than the yields from a single crop produced as a result of intensive agriculture (Altieri, 2009). Also small farmers are able to make more profit per unit of output through effectively managing limited natural resources (Rosset, 1999). Similarly, small farmers grow most of the basic food crops with virtually no or little application of chemical fertilizers and improved seed (Francis, 1986). These are the critical factors in determining environmental quality and ecological sustainability of land and water.

Despite significant increases in food imports and flow of Food Aid into the continent, smallholders in Africa still produce most of food requirements with simple traditional techniques (Altieri, 2009). The International Assessment on Agricultural Knowledge, Science and Technology (IAASTD), a United Nations and World Bank-sponsored comprehensive assessment on the role of agriculture in reducing poverty and hunger called for a

paradigm shift from conventional large-scale intensive agriculture and emphasized the need for active roles of small-scale farmers and local communities in addressing global food crises with extensive use of indigenous knowledge and traditional methods of food production (Perfecto et al., 2009). This can have significant effects on poverty reduction and rural development (Jama & Gonzalo, 2008). This will not only ensure the sustenance of these farmers but also help in generating incomes through proper linkage with local markets. This income will be an important instrument to address the multi-dimensional problem of poverty.

As an alternative paradigm to the industrialized agriculture, the food sovereignty practices encourage agro-ecological principles in order to ensure sustainability of food production system including land and water. Food production practices based on agro-ecology and sustainable agriculture will be more effective in not only feeding people but also ensuring their balanced nutrition (Saragih & Malig, 2012). The ecological farming systems are more productive and highly resistant to drought and other manifestations of climate change (Rosset, 2008). Due to various reasons, the African countries are highly vulnerable to a number of natural disasters and calamities. Further, the limited availability of resources and lack of access to environment-friendly technologies affect the mitigation & adaptation strategies of government in the region which has serious impact in achieving the objectives of sustainable development & green economy.

The ecological agricultural production methods can produce adequate food to meet current requirements without expansion of the agricultural land (Wittman, 2011). This is in contrast to the intensive agriculture which leads to hidden hunger. A study of 45 projects based on agro-ecological approaches in 17 African countries shows the increase in cereal yield of 50 to 100% (Rosegrant & Sarah, 2003). The agro-ecology practices go beyond alternative farming practices and develop agro-ecosystems with minimal dependence on chemical fertilizers and energy inputs (Altieri & Victor, 2011). Hence the agro-ecology focuses producing quality food products without negatively affecting the environmental sustainability of the land water resources. It also enhances soil fertility on the basis of appropriate use of natural resources and traditional conservation methods (Saragih & Malig, 2012). This is a critical aspect for ensuring sustainable food production. Because any environmental or other form degradation or other of food production system will have far-reaching consequences for the farmers in Africa since they have limited resources to address these problems.

In terms of productivity, the diverse ecosystems often have higher than simpler systems practices with single cropping (Frison et al., 2011). Accordingly, within a decade, as predicated, the small-scale farmers can double food production in food insecure regions including Africa through adoption of agro-ecological production methods. Also preservation and utilization of agro-biodiversity based on indigenous knowledge largely contributes to food security since it ensures sustainability of food production system and its ecological balance (Wittman, 2011).

The current food crises including high the prevalence of under-nourishment especially in developing countries are the outcome of the comprehensive failure of global community to understand & appreciate the small farmers' most intimate knowledge of the environment, their ability to manage and maintain agricultural biodiversity and their unreserved right to protect ecological balance. Considering the importance of biodiversity, Food Agriculture Organization (FAO) through its *Voluntary Guidelines on Right to Food* emphasised the need for ensuring ecological sustainability and protecting the carrying capacity of ecosystems for sustainable food production and food security (FAO, 2005). However, the ongoing process of land grabbing seriously affects food sovereignty since it always involve in large scale acquisition of land. A large number of small farms will be submerged in this new investment trend. Also culturally, the intimate link of farmers with food production system will be disturbed. Displacement will in fact accelerate the number of food insecure people in Africa.

#### **4. Land Grabbing: A Move Against Food Sovereignty**

In recent years, a number of inter-dependent and inter-linked crises in the field finance, global environment, energy security, food imports and production, etc, have significantly contributed to the tremendous rushes to control agriculture land across the political boundaries (Saturnino et al., 2012). Increasing concerns over food security and the sustainability of food production system in those countries that are highly dependent upon food imports, or that have deteriorating environmental conditions and declining natural resources have accelerated the process of large scale acquisition productive agricultural land which has been termed as 'land grabbing' (Havnevik, 2011).

Behnassi and Yaya (2011) defines land grabbing as taking possession of or control over a large scale agricultural land for the purpose of commercial or industrial agricultural production. In terms of size, this land is highly disproportionate to the average land holding of that particular region. The process of land acquisition may be short or long term. It includes not only the purchase of ownership rights, but also the acquisition of use rights,

such as leases or concessions (Matondi, 2011). Large-scale is defined as the acquisition of land over 1,000 ha (Cotula et al., 2009).

Foreign investment in agricultural land goes across the developing world largely in Africa where productive land is comparatively cheap and easily available (Friends of the Earth Europe, 2010). For example, almost half of the foreign investment in agriculture projects (48%) involved are in sub-Saharan Africa covering two-thirds of the total area (39.7 million ha) (Deininger, 2011). A key assumption behind the rising interest in African countries is that there are large reservoirs of unused or underutilized land. Africa is being considered as 'Agriculture's final frontier' (Woertz, 2012). Even some scholars dubbed this land grabbing process as the "second scramble for Africa" (Byamugisha, 2013).

According to *Global Agro-Ecological Assessment*, the most comprehensive survey of global agricultural potential, 80% of the world reserve of agricultural land exists in Africa and South America (Fischer et al., 2002). For example, it has been estimated that Africa has 733 million ha of arable land (27.4% of world total) compared with 570 million ha for Latin America and 628 million ha for Asia. In terms of water resources, only 3.8% of Africa's surface and groundwater is harnessed which is an essential input for undertaking large scale agricultural production (Roxburgh et al., 2010).

This emerging trend of investment in agriculture land across the political boundaries will shift the process of realizing the rights of communities especially farmers with respect to food and natural resources from domestic to external actors and from national to an international legal jurisdiction. Land in Africa is regarded not simply as an economic or environmental asset, but as a social, cultural and ontological resource (Friends of the Earth Europe, 2010). In many of the African countries, there are inadequate administrative frameworks and legal safeguards to fully protect land rights and entitlements of local communities and indigenous people. Also the official documentation of land records and property rights and ownerships in these countries are limited. For example, only about 10% of rural land in sub-Saharan Africa is officially registered. And the rest is informally administered through traditional institutional mechanisms. These conditions make African land as most vulnerable to land grabbing (Byamugisha, 2013) and also place the farmers in a weak position in their legal claim of ownership and for adequate compensation in case of land acquisition by investors.

Also the introduction of intensive agricultural production for export and commercial purpose is often based on transformation of complex and diversified smallholder farming systems which seriously threatens biodiversity and land and water resources (Braun & Ruth, 2009). In Africa, the tropical soils are not suitable for intensive cultivation. Although irrigation and chemical fertilizers can compensate these limitations, they often lead to environmental sustainability problems linked to water-logging, salinity and soil erosion (Havnevik, 2011) which leads to desertification and land degradation. The industrial mode of agriculture production exerts enormous pressures on increasingly degraded ecosystems. This further undermines nature's capacity to ensure continuous supply food, fiber and energy (Altieri & Victor, 2011). The industrial agriculture affects the ecological services provided by nature and pushes these services beyond the tipping point (Perfecto et al., 2009).

Similarly, the shift from domestic to foreign control over food production system and resources will affect African countries' ability to achieve food self sufficiency in the near future (Oakland Institute, 2009). With respect to Food Aid, the UN agencies even suggest that it should be provided in a way that it does not adversely affect the local producers and markets. It should be organized to facilitate the return to food self-reliance of the beneficiaries (CESCR, 1999). The annual food aid to Africa is 3.23 million tons. Though it helps to prevent starvation, it may create dependency (Conway & Gary, 2003).

In Africa, adoption of the food sovereignty principles are essential to address hunger since they empower local communities to have greater control over their productive resources, use and sustain ecologically friendly means of production, and access local markets. It encourages producing nutritious and culturally accepted food. However, the existing trend of land grabbing especially in Africa seriously affects food sovereignty in an unprecedented level. This region has large number of small farmers and the people who depend on agriculture for their livelihoods. Large scale land acquisition due to land grabbing displaces these farmers. Also this region has high prevalence of hunger and malnutrition. This region is more vulnerable to climatic conditions and other natural disasters. It has achieved very low level of socio-economic development (Kannan, 2013). Also intensive agriculture affects the environmental sustainability of the agricultural production system. Considering the nature of agricultural system and environmental conditions in this region, food security is possible only through adoption of food sovereignty principles. However, the ongoing land grabbing process in Africa hinders the efforts to achieve food security through food sovereignty.

## 5. Food Security Through Food Sovereignty

Food apart from providing sustenance is used in many ways in various human expressions of culture, social systems and religious beliefs. Food security is an unobservable variable with complex, multi-factorial causality. As such, it is effectively impossible to accurately measure food security (Barrett, 2002). It is a complex phenomenon requiring concerted action from local to global levels in the process of its realization (Tansey, 2008). The term food security can mean all things to all people. Even it has been used in nearly 200 different ways across the world in numerous academic and policy discourses (Lang, 2010) and it has 450 indicators (Mechlem, 2004). The conceptual understanding of food insecurity has gradually evolved over the years to include not only transitory problems of inadequate food supply at the national level but also chronic problems of insufficient access and unequal distribution at the household and individual level (Staatz et al., 1990). The definition of food security now most commonly used is that of the WFS (1996): 'Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life'(Rae et al., 2007). However, this concept of food security doesn't clearly spell out where the food comes from, who produced it, or the socio-economic and environmental conditions under which it was grown (Pimbert, 2009).

Food sovereignty as a concept and framework challenges not only the very foundations of the current globalized food regime and intensive agricultural production methods and but also strongly proposes a set of tangible and concrete policy alternatives to address global food crises (Wittman, 2011). Food Sovereignty is a term that was very specifically intended as a foil to the prevailing notions of food security which are based on availability of food and intensive agricultural production. Food Sovereignty is being considered as a precondition to genuine food security (Patel, 2009) since it focuses not only food security as such but also emphasizes the need to protect food production system.

Basically, food sovereignty is defined as the right of peoples to healthy and culturally appropriate food produced through ecologically sound methods and sustainable production techniques. It also includes people's right to define their own food and agriculture systems and practices (Kannan, 2013). Also the concept of food sovereignty places those who produce, distribute and consume food at the heart of a highly complicated network of food systems and policies. This is in contrast to the existing global trade regime which always favourably responds to the unjust demands of international markets and multinational corporations (Patel, 2009). Under the framework of food sovereignty, every country and people has the right to formulate their own policies related to food and agriculture system rather than the 'one size fits all' principle of World Trade Organization (Rosset, 2008).

As discussed, the meaning and core concept of food security has significantly changed from focusing the availability and stability of basic food supply at the international and national level to accessibility at the household and individual level (Rae et al., 2007). At the household level, Food security incorporates a wide-range of factors in relation to global hunger and malnutrition. These include demographics, land availability and its productivity, production methods, consumption patterns, land entitlements and ownership, kinship and social values and customs. The household as unit of analysis connects food security to a complex network of social activity (Lee, 2007). This entire spectrum of analysis at the grassroots level goes in line with the conceptual framework of food sovereignty.

Food sovereignty places small farmers and food production at the centre of this emerging framework. It advocates that small farmers themselves have full control over their assets and the process of production by exercising their right in an undisputed manner over natural resources. They are encouraged to use their indigenous knowledge and traditional methods of food production. For the same reason, the term 'sovereignty' has been used to imply the nature and level of control over food production resources by the farmers and local communities (Sharma, 2011). Also enhanced community, family and individual control over productive assets are a crucial factor to reducing vulnerability to food insecurity and facilitating to break poverty traps (Barrett, 2010).

In order to ensure long term food security, the sustainability of food production system is critical. It is the food sovereignty framework which ensures long term food security through sustainability of food production system. Accordingly, the need for greater food sovereignty has emerged out of broader concerns over the negative impact of liberalized global food regime on the food security of poor countries and the environment including land and water resources (Baumülle & Tansey, 2008). The very notion of sustainability in food production system is intrinsically linked to the idea of adequate food accessible for both present and future generations. It also incorporates the concept of long-term availability and accessibility to all (CESCR, 1999). In order to meet

the growing food need, global food production should be doubled by 2050. Much of this needed increase should come from developing countries where the majority of the world's rural poor live. Also 95% of the population increase is expected from these countries (Saturnino & Borrás, 2009). For example, in Africa, according to FAO by 2030 an additional 57 million ha will be brought into cultivation which is an increase of 25%. This expansion raises a number of critical environmental concerns. These will seriously affect food security of Africa.

Globally, the Green Revolution, while increasing productivity at an unprecedented level, proved to be ecologically unsustainable since it disturbed the environmental sustainability and ecological balance. It has also led to loss of biodiversity and associated traditional knowledge (Rosset, 2006). A number of essential nutrients of the land have been depleted due to introduction of single crop under mechanized large scale agriculture practice (Munang & Johnson, 2011). As a result of shifting the agriculture practices from genetically diverse traditional food crops to high-yielding monocultures, in the 20th century, the planet as estimated lost nearly three-fourth of its food crop diversity (Gonzalez, 2011). Green revolution forces the farmers to concentrate on a few staple crops which lead to the simplified diets. This is the main cause of under-nutrition and widespread hidden hunger (Burchi et al., 2011).

During the last few decades, the liberalization of food markets and the expansion of the corporate in the food regime have thoroughly affected the nature of food chains and the peasantry's position in the complicated networks of global food system (Eric, 2011). On the other hand, the food sovereignty approach calls for a paradigm shift from an economic to an ecological calculus in the food security governance framework in order to ensure long term food security and environmental sustainability (McMichael, 2009). Therefore, sustained food security is possible only through adoption of the core principles of food sovereignty by encouraging the small farmers and protecting environmental sustainability of food production system. Application of this framework will be more appropriate in African countries since the region has large number of food insecure people, significant number of small farms, accelerating environmental degradation, unprecedented level of foreign investment in agricultural land etc.

## **6. Food Sovereignty: An African Perspective**

African economic system is largely an agricultural based with the majority of its population deriving their income and livelihoods from farming. Agricultural growth is closely connected with overall socio-economic development. Agriculture development is a critical mechanism to address not only the contemporary food crises but also over all poverty, since most of the people in Africa spend 50-70% of their household income on food (Diao et al., 2008). Even the rate of urban poverty will decrease if there is accelerated agriculture development since rural to urban migration by semi and unskilled labours will reduce. Due to various reasons, the share of urban poor is increasing significantly in African countries. Growth in agriculture is considered to be at least two to four times more effective in reducing poverty (Juma, 2011). This brings a balanced and equitable development across the region.

However, seasonality has always been an important contributor to hunger and poverty in rural Africa. Rural farmers and landless labours who derive their livelihoods predominantly from farming are the most vulnerable communities to weather shocks (Devereux, 2010). In sub-Saharan African, 96% is rain-fed agriculture and highly vulnerable to climate change. Development of irrigation networks and utilization of ground water is very minimal in this region. And diverse agro-ecological conditions in the region produce a wide range of farming systems based on many food staples, livestock, and fisheries (Juma, 2011). Though the occurrence of drought and famine experienced in all climate zones across the world, the impacts are seriously felt in the drylands of Africa (Kassas, 1995). Also Africa has vast track of susceptible dry lands covering 43% of continent which are highly vulnerable to natural disasters and affects livelihood of 485 million people (Reich et al., 2001). During recent famines in Africa, the aggregate livestock losses are more than 80%. Under these critical situations it may take more than to restore pre-famine levels (Borton & Nigel, 1989). A gradual and continuous decline of rainfall in the continent since the 1960s can be noticed (Barrios et al., 2006). This is clear manifestation of changing climatic conditions in this region. Africa as estimated is warming faster than the global average and this is likely to continue (Collier et al., 2008). Due to higher temperature and reduced rainfall, crop yields in Africa may fall by 10–20% by 2050 (Jones & Thornton, 2003) and this will significantly increase the number of people at higher risk of hunger and malnutrition (Tobin, 2009). The African countries are not well-equipped to adapt and mitigate the impact of climate change due to various reasons.

From the early 1970s through the 1990s, sub-Saharan Africa's food sector has been characterized by a decline in per capita food production. In a paradox, in the last ten years sub-Saharan Africa experienced largest population growth among Third World countries and the slowest growth of food production (Shillington, 2005). Food

insecurity, a fundamental measure of poverty, is one of the most pressing problems facing the continent (Jama & Gonzalo, 2008). Africa is the only region in the world where per capita agricultural productivity has remained stagnant over the last few decades (Sanchez et al., 2005). This has resulted in food insecurity, growing dependence on food aid and food imports, and increasing poverty and hunger. This region has the highest prevalence of food insecurity, one-third of people in sub-Saharan Africa considered chronically hungry-many of whom are smallholders (Juma, 2011). One in every four food insecure people in the developing countries lives in sub-Saharan Africa. According to FAO, in 2008, 21 countries in sub-Saharan Africa, out of 37 countries worldwide, were critically food-insecure (Tobin, 2009). It clearly reflects the seriousness of the food security problems in the region. Any kinds of intervention mechanism should take into account the local conditions and availability of resources.

Also in Africa most of the countries affected by desertification on a large scale have substantially increased their dependence on imported food during the 70's and 80's (Mortimore, 1989) and the same trend continues. For example, in domestic markets, 60% of rice and 90% of poultry meat consumed by the people in Ghana were imported (Diao et al., 2008). Desertification is a detrimental process which leads to the formation of a complete wasteland incapable of producing anything useful (Kannan, 2012). As a result, the productive capacity of land is reduced 'to the point of zero economic productivity', which means that a farmer can obtain no net profit from its utilization (Mortimore, 1989). Currently, Africa accounts for 27% of the world's land degradation and has 500 million ha degraded land. Also degradation in Africa seriously affects 65% of cropland and 30% of pastureland (Juma, 2011). Soil erosion under the action of wind is the one of the major forms of land degradation (Kannan, 2010). As a result of wind erosion, Africa is suffering from heavy losses of topsoil (Brown, 2005). Every year, approximately 2-3 billion tons of fine soil particles leave Africa in dust storms. This process is slowly draining the continent of its soil fertility and its biological productivity (Brown, 2005). In Africa, soil moisture stress inherently constrains agricultural productivity on 86% of soils (Eswaran et al., 1997). For example, every year Nigeria is losing 351,000 ha of rangeland and cropland to desertification (Brown, 2005).

Low agricultural productivity is one of the most important factors that contribute to food insecurity in sub-Saharan Africa. Also this region has lagged behind other developing countries in improving agricultural productivity (Tobin, 2009). Currently sub-Saharan Africa ranks the lowest in terms of yield-enhancing practices and techniques that include mechanization, use of agro-chemicals and increased use of irrigated land. In comparison with other developing regions, the use of these practices and technologies is low in Africa (Juma, 2011). On a per capita basis since 1980, the production of maize, a staple food to 300 million people in Africa has fallen by 14% (Paarlberg, 2010). Overall, the gap between the average grain yields in sub-Saharan Africa and other developing countries has widened over the years. The average grain yield of sub-Saharan African countries in 2006 was only about 40% of the rest of the developing countries (Tobin, 2009). Extension of supportive mechanism in the form developing micro-irrigation facilities, providing technical and consultancy services, linking with local markets and providing information on price will help these small farms to face the challenges.

In Africa, due to various reasons, the government support to agriculture sector is very limited. This has far reaching consequences on food security and poverty alleviation. Over the span of last twenty years, in sub-Saharan Africa, the allocation of government expenditure on agriculture as a share of Gross Domestic Products (GDP) declined by half from 2.8% to 1.3%. Lack of adequate government support may be the pivotal reason for the decline of food production in some African countries. By nature, farming faces many risks and uncertainties especially in Africa, and government assistance plays an important role in ensuring the viability of the agricultural production. However, in 2008, only 19% of African countries spent more than 10% of their GDP for agricultural development. Many countries in the region hardly reached 4% of GDP and heavily depended on Official Development Assistance (ODA) and other resources for funding agriculture related projects (Juma, 2011). As estimated, if present trends of agriculture production and distribution continue, sub-Saharan Africa soon will have not just the highest incidence of hunger and poverty, as before, but also more food-insecure people than any other part of the world, including the developing countries of South Asia (Southgate et al., 2011). Under these circumstances, adoption of food sovereignty will be a viable option to ensure long-term food security and integrated rural development in the region. Different principles and core values of food sovereignty needs to be integrated in the national planning.

## 7. Conclusions

Geographical locations, environmental conditions, pattern of agricultural production and nature of socio-economic development make Africa highly vulnerable to food insecurity. Under these conditions, adoption of food sovereignty principles is the best and viable option to address hunger, malnutrition and poverty. The



existing trend of land grabbing, while ensuring food security of someone in somewhere else affects the food sovereignty in Africa which in turn accelerate food insecurity in the region. It always involve in large scale acquisition of land. A large number of small farms will be submerged in this new investment trend. Therefore, there is an urgent need to balance the local circumstance while favouring large scale agricultural projects in the form of land grabbing in Africa. Since food sovereignty remains as a viable option to ensure long-term food security and integrated rural development in the region, its different principles and core values needs to be integrated in the national planning.

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### Conflicts of Interest

The author declares no conflicts of interest.

### Reference

- Ahmed, A. U., Ruth, V. H., Lisa, C. S., Doris, M. W., & Tim, F. (2007). *The World's Most Deprived: Characteristics and Causes of Extreme Poverty and Hunger*. Discussion Paper, Washington, DC: International Food Policy Research Institute.
- Altieri, M. A. (2004). Linking Ecologists and Traditional Farmers in the Search for Sustainable Agriculture. *Frontiers in Ecology and the Environment*, 2, 35-42. <http://dx.doi.org/10.2307/3868293>
- Altieri, M. A. (2009). Agroecology, Small Farms, and Food Sovereignty. *Monthly Review*, July-August, 102-113. [http://dx.doi.org/10.14452/MR-061-03-2009-07\\_8](http://dx.doi.org/10.14452/MR-061-03-2009-07_8)
- Altieri, M. A., & Victor, M. T. (2011). The Agroecological Revolution in Latin America: Rescuing Nature, Ensuring Food Sovereignty and Empowering Peasants. *Journal of Peasant Studies*, 38(3), 587-612. <http://dx.doi.org/10.1080/03066150.2011.582947>
- Andersen, P. P., & Rajul, P. L. (1998). Food Security and Sustainable Use of Natural Resources: A 2020 Vision. *Ecological Economics*, 26, 1-10. [http://dx.doi.org/10.1016/S0921-8009\(97\)00067-0](http://dx.doi.org/10.1016/S0921-8009(97)00067-0)
- Baumülle, H., & Geoff, T. (2008). Responding to Change. In G. Tansey, & R. Tasmin (Eds.), *The Future Control of Food: A Guide to International Negotiations and Rules on Intellectual Property, Biodiversity and Food Security* (pp.171-196). Ottawa: International Development Research Centre.
- Barrett, C. B. (2002). Food Security and Food Assistance Programs. In B. L. Gardner, & G. C. Rausser (Eds.), *Handbook of Agricultural Economics*, Vol. 2. Amsterdam: Elsevier.
- Barrett, C. B. (2010). Measuring Food Insecurity. *Science*, 327(5967), 825-828. <http://dx.doi.org/10.1126/science.1182768>
- Barrett, C. B., & Daniel, G. M. (2005). *Food Aid after Fifty Years: Recasting Its Role*. London: Routledge.
- Barrios, S., Luisito, B., & Eric, S. (2006). Climatic Change and Rural-Urban Migration: the case of Sub-Saharan Africa. *Journal of Urban Economics*, 60(3), 357-71. <http://dx.doi.org/10.1016/j.jue.2006.04.005>
- Behnassi, M., & Yaya, S. (2011). Land Resource Governance from a Sustainability and Rural Development Perspective. In M. Behnassi (Eds.), *Sustainable Agricultural Development: Recent Approaches in Resources Management and Environmentally-Balanced Production Enhancement* (pp. 2-23). New York: Springer. [http://dx.doi.org/10.1007/978-94-007-0519-7\\_1](http://dx.doi.org/10.1007/978-94-007-0519-7_1)
- Borton, J., & Nigel, N. (1989). *Drought and Famine*. London: Oversees Development Institute.
- Boussard, J. M., Benoît, D., Françoise, G., & Tancrede, V. (2005). Food Security and Agricultural Development in Sub-Saharan Africa: Building a Case for More Support, Background Document, CIRAD for FAO.
- Braun, J. von., & Meinzen, D. R. (2009). "Land Grabbing" by Foreign Investors in Developing Countries: Risks and Opportunities. *IFPRI Policy Brief*, 13, 1-4.
- Brown, L. R. (2005). *Outgrowing the Earth: The Food Security Challenge in an Age of Falling Water Tables and Rising Temperatures*. London: Earthscan.
- Burchi, F., Jessica, F., & Emile, F. (2011). The Role of Food and Nutrition System Approaches in Tackling Hidden Hunger. *International Journal of Environmental Research and Public Health*, 8, 358-373. <http://dx.doi.org/10.3390/ijerph8020358>

- Byamugisha, F. F. K. (2013). *Securing Africa's Land for Shared Prosperity: A Program to Scale Up Reforms and Investments*. Washington DC: World Bank. <http://dx.doi.org/10.1596/978-0-8213-9810-4>
- Collier, P., Gordon, C., & Tony, V. (2008). Climate Change and Africa. *Oxford Review of Economic Policy*, 24(2), 337-53. <http://dx.doi.org/10.1093/oxrep/grn019>
- Conway, G., & Gary, T. (2003). Science for African Food Security. *Science*, 299, 1187-1188. <http://dx.doi.org/10.1126/science.1081978>
- Cotula, L., Vermeulen, S., Leonard, R., & Keeley, J. (2009). *Land Grab or Development Opportunity? Agricultural Investment and International Land Deals in Africa*. London/Rome: IIED/FAO/IFAD.
- Denevan, W. M. (1995). Prehistoric Agricultural Methods as Models for Sustainability. *Advanced Plant Pathology*, 11, 21-43. [http://dx.doi.org/10.1016/S0736-4539\(06\)80004-8](http://dx.doi.org/10.1016/S0736-4539(06)80004-8)
- Devereux, S. (2010). Seasonal Food Crises and Social Protection in Africa. In H. W. Barbara & J. Heyer (Eds.), *The Comparative Political Economy of Development: Africa and South Asia* (pp. 111-135). New York: Routledge.
- Diao, X., Derek, H., & Michael, J. (2008). Toward a Green Revolution in Africa: what would it achieve, and what would it require? *Agricultural Economics*, 39, 539-550. <http://dx.doi.org/10.1111/j.1574-0862.2008.00358.x>
- Eric, V. (2011). From Famine to Food Crisis: What History Can Teach Us about Local and Global Subsistence Crises. *Journal of Peasant Studies*, 38(1), 47-65. <http://dx.doi.org/10.1080/03066150.2010.538580>
- Eswaran, H., Almaraz, R., Berg, E. V. D., & Reich, P. (1997). An Assessment of the Soil Resources of Africa in Relation to Productivity. *Geoderma*, 77, 1-18. [http://dx.doi.org/10.1016/S0016-7061\(97\)00007-4](http://dx.doi.org/10.1016/S0016-7061(97)00007-4)
- FAO. (2005). *Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security*. Rome: FAO.
- FAO. (2006). *Compendium on Food and Agricultural Indicators 2006*. Rome: FAO.
- Fischer, G., Velthuisen, H. van, & Nachtergaele, F. (2002). *Global Agro-Ecological Assessment for Agriculture in the 21st Century*. Rome: FAO.
- Francis, C. A. (1986). *Multiple Cropping Systems*. New York: MacMillan.
- Friends of the Earth Europe. (2010). *Africa: Up for Grabs*. Report, Brussels: Friends of the Earth Europe.
- Frison, E. A., Jeremy, C., & Toby, H. (2011). Agricultural Biodiversity Is Essential for a Sustainable Improvement in Food and Nutrition Security. *Sustainability*, 3, 238-253. <http://dx.doi.org/10.3390/su3010238>
- Gonzalez, C. G. (2011). The Global Politics of Food: Introduction to the Theoretical Perspectives Cluster. *University of Miami Inter-American Law Review*, 43, 77-87.
- Havnevik, K. (2011). Grabbing of African Lands for Energy and Food: Implications for Land Rights, Food Security and Smallholders. In P. B. Matondi, H. Kjell, & B. Atakilte (Eds.), *Biofuels, Land Grabbing and Food Security in Africa* (pp. 20-43). London: Zed Books Ltd.
- Jama, B., & Gonzalo, P. (2008). Agriculture in Africa: Strategies to Improve and Sustain Smallholder Production Systems. *Annals of New York Academy of Science*, 1136, 218-232. <http://dx.doi.org/10.1196/annals.1425.034>
- Juma, C. (2011). *The New Harvest: Agricultural Innovation in Africa*. Oxford: Oxford University Press.
- Kannan, A. (2010). The GCC Countries Response to Desertification. In A. Anwar (Ed.). *Contemporary West Asia: Politics and Development* (pp. 27-65). New Delhi: New Century Publication.
- Kannan, A. (2012). *Global Environmental Governance and Desertification: A Study of Gulf Cooperation Council Countries*. New Delhi: The Concept Publishers.
- Kannan, A. (2013). Desertification, Land Grabbing and Food Sovereignty: the Unexplored Link. *Science, Technology and Arts Research Journal*, 2(2), 153-159. <http://dx.doi.org/10.4314/star.v2i2.98902>
- Kassas, M. (1995). Desertification: A General Review. *Journal of Arid Environments*, 30, 115-128. [http://dx.doi.org/10.1016/S0140-1963\(05\)80063-1](http://dx.doi.org/10.1016/S0140-1963(05)80063-1)
- Lang, T. (2010). Big Choices about the Food System. In G. Lawrence, L. Kristen, & W. Tabatha (Eds.), *Food Security, Nutrition and Sustainability* (pp. 271-287). London: Earthscan.
- Lee, R. (2007). *Food Security and Food Sovereignty, Discussion Paper Series No. 11*. University of New Castle: Centre for Rural Economy.

- Matondi, P. B. (2011). Agro-investments in Zimbabwe at a time of Redistributive Land Reforms. In P. B. Matondi, H. Kjell, & B. Atakilte (Eds.), *Biofuels, Land Grabbing and Food Security in Africa* (pp.134-158), London: Zed Books Ltd.
- Matondi, P. B., & Patience, M. (2011). Attracting Foreign Direct Investment in Africa in the context of Land Grabbing For Biofuels and Food Security. In P. B. Matondi, H. Kjell, & B. Atakilte (Eds.), *Biofuels, Land Grabbing and Food Security in Africa* (pp. 68-89). London: Zed Books Ltd.
- McMichael, P. (2009). A Food Regime Genealogy. *Journal of Peasant Studies*, 36(1), 139-169. <http://dx.doi.org/10.1080/03066150902820354>
- Mechlem, K. (2004). Food Security and the Right to Food in the Discourse of the United Nations. *European Law Journal*, 10(5), 631-648. <http://dx.doi.org/10.1111/j.1468-0386.2004.00235.x>
- Menezes, F. (2001). Food Sovereignty: A Vital requirement for Food Security in the Context of Globalization. *Development*, 44(4), 29-33. <http://dx.doi.org/10.1057/palgrave.development.1110288>
- Mortimore, M. (1989). *Adapting to Drought: Farmers, Famines and Desertification in West Africa*. Cambridge: Cambridge University Press. <http://dx.doi.org/10.1017/CBO9780511720772>
- Munang, R., & Johnson, N. N. (2011). Using Small-Scale Adaptation Actions to Address the Food Crisis in the Horn of Africa: Going beyond Food Aid and Cash Transfers. *Sustainability*, 3, 1510-1516. <http://dx.doi.org/10.3390/su3091510>
- Murphy, S. (2010). Biofuels: Finding a Sustainable Balance for Food and Energy. In G. Lawrence, L. Kristen, & W. Tabatha (Eds.), *Food Security, Nutrition and Sustainability* (pp. 223-237). London: Earthscan.
- Oakland Institute. (2009). *The Great Land Grab*. Oakland: Oakland Institute.
- Paarlberg, R. (2010). *Food Politics: What Everyone Needs To Know*. New York: Oxford University Press.
- Patel, R. (2009). Food Sovereignty. *Journal of Peasant Studies*, 36(3), 663-70. <http://dx.doi.org/10.1080/03066150903143079>
- Perfecto, I. J. V., & Angus, W. (2009). *Nature's Matrix: Linking Agriculture, Conservation and Food Sovereignty*, London: Earthscan.
- Pimbert, M. (2009). *Towards Food Sovereignty*. London: International Institute for Environment and Development.
- Pretty, J. N., Morison, J. I. L., & Hine, R. E. (2003). Reducing Food Poverty by Increasing Agricultural Sustainability in Developing Countries. *Agriculture, Ecosystems and Environment*, 95, 217-234. [http://dx.doi.org/10.1016/S0167-8809\(02\)00087-7](http://dx.doi.org/10.1016/S0167-8809(02)00087-7)
- Rae, I., Julian, T., & Margret, V. (2007). The Right to Food as a Fundamental Human Right: FAO's Experience, In G. K. Basudeb, S. A. Shabd, & D. Benjamin (Eds.), *Food Insecurity, Vulnerability and Human Rights Failure* (pp. 266-285). New York: Palgrave Macmillan.
- Reich, P. F., Numbem, S. T., Almaraz, R. A., & Eswaran, H. (2001). Land resource stresses and desertification in Africa. In E. M. Bridges, I. D. Hannam, & L. R. Oldeman, W. T. Pening de Vries, S. J. Scherr, & S. Sompatpanit (Eds.), *Responses to Land Degradation, Proceedings of the 2nd International Conference on Land Degradation and Desertification, Kon Kaen, Thailand*. New Delhi: Oxford Press.
- Rosegrant, M. W., & Sarah A. C. (2003). Global Food Security: Challenges and Policies. *Science*, 302, 1917-1919. <http://dx.doi.org/10.1126/science.1092958>
- Rosset, P. (1999). Small is Bountiful. *The Ecologist*, 29(8), 2-7.
- Rosset, P. (2006). *Food Is Different: Why We Must Get the WTO Out of Agriculture*. New York: Zed Books.
- Rosset, P. (2008). Food Sovereignty and the Contemporary Food Crisis. *Development*, 51(4), 460-463. <http://dx.doi.org/10.1057/dev.2008.48>
- Roxburgh, C., Dorr, N., Leke, A., Amine, T. R., Arend, v. W., Susan, L., Mutsa, C., ... Till, Z. M. (2010). *Lions on the Move: The Progress and Potential of African Economies*. Washington, DC: McKinsey Global Institute.
- Sanchez, P. A., & Swaminathan, M. S. (2005). Cutting World Hunger in Half. *Science*, 307, 357-359. <http://dx.doi.org/10.1126/science.1109057>

- Saturnino, M., & Borras, Jr. (2009). Agrarian Change and Peasant Studies: Changes, Continuities and Challenges – An Introduction. *Journal of Peasant Studies*, 36(1), 5-31. <http://dx.doi.org/10.1080/03066150902820297>
- Saturnino, M., & Jennifer, C. F. (2012). Global Land Grabbing and Trajectories of Agrarian Change: A Preliminary Analysis. *Journal of Agrarian Change*, 12(1), 34-59. <http://dx.doi.org/10.1111/j.1471-0366.2011.00339.x>
- Saragih, H., & Mary, L. M. (2012). *Agriculture, Trade, Food Sovereignty and Agroecology: Proposals on Alternatives to current EU Trade Policies*. Berlin: Comhlámh, AITEC and WEED.
- Schutter, O. D. (2011). The Right of Everyone to Enjoy the Benefits of Scientific Progress and the Right to Food: From Conflict to Complementarity. *Human Rights Quarterly*, 33(2), 304-350.
- Shapouri, S., & Rosen, S. (2009). World Population and Food Availability. In W. G. Pond, L. N. Buford, & L. B. Dan (eds), *Adequate Food for All: Culture, Science, and Technology of Food in the 21st Century*. London: CRC Press.
- Sharma, R. (2011). Food Sovereignty, Hunger and Global Trade Rules. *ATDF Journal*, 8(1/2), 10-17. <http://dx.doi.org/10.1353/hrq.2011.0020>
- Shaw, J. (2001). *The UN World Food Programme and the Development of Food Aid*. New York: Palgrave Macmillan. <http://dx.doi.org/10.1057/9781403905437>
- Shaw, J. (2007). *World Food Security: A History since 1945*. New York: Palgrave Macmillan. <http://dx.doi.org/10.1057/9780230589780>
- Shawki, N., & Renting, H. (2011). The 2008 Food Crisis as a Critical Event for the Food Sovereignty and Food Justice Movements in *APSA 2011 Annual Meeting Paper*.
- Shillington, K. (2005). *Encyclopaedia of African History*. New York: Fitzroy Dearborn Taylor & Francis Group.
- Southgate, D., Douglas, H. G., & Luther, T. (2011). *The World Food Economy*. John Wiley & Sons, Inc.
- Staatz, J. M., Victoire, C. D'A., & Shelly, S. (1990). Measuring Food Security in Africa: Conceptual, Empirical, and Policy Issues. *American Journal of Agriculture Economics*, 72(5), 1311-1317. <http://dx.doi.org/10.2307/1242553>
- Tansey, G. (2008). Global Rules, Local Needs. In G. Tansey, & R. Tasmin (Eds.), *The Future Control of Food: A Guide to International Negotiations and Rules on Intellectual Property, Biodiversity and Food Security* (pp. 212-220). Ottawa: International Development Research Centre.
- Tobin, J. C. (2009). *Hunger Efforts and Food Security*. New York: Nova Science Publishers, Inc. UN Committee on Economic, Social and Cultural Rights (CESCR), General Comment No. 12: The Right to Adequate Food (Art. 11 of the Covenant), 12 May 1999. Retrieved August 2, 2013, from <http://www.refworld.org/docid/4538838c11.html>
- Wittman, H. (2011). Food Sovereignty: A New Rights Framework for Food and Nature? *Environment and Society: Advances in Research*, 2, 87-105. <http://dx.doi.org/10.3167/ares.2011.020106>
- World Bank. (2007). *From Agriculture to Nutrition: Pathways, Synergies and Outcomes*, Washington, DC: World Bank Agriculture and Rural Development Department.

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