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Review Article

Desertification, Land Grabbing and Food Sovereignty: The Unexplored Link

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Abstract

Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems and practices. Recent years, there has been an active interest in foreign investment in productive agricultural land in developing countries across the political, legal and geographical jurisdictions by governments as the result of a complex combination of a number of socio-economic and environmental factors. Among the factors, depletion of water resources and acceleration of desertification are the most significant drivers. For example, Saudi Arabia, which for many years encouraged wheat production, decided to phase it out by 2016 because of depletion of fresh water sources. Equally many firms in Gulf countries abandoned agriculture due to alkalinity. Now they invest in foreign agriculture land. This changing nature of foreign investment in agriculture land has far reaching consequences on food security. In many of the host States, there is an inadequate legal framework to protect rights of people. Based on the secondary sources, this paper analyses the link among desertification, land grabbing and food sovereignty. To comprehensively address the pressing issues of hunger and poverty, the food sovereignty principles empower local communities to have greater control over their productive resources, use & sustain ecological friendly means of production, and access local markets as well as nutritious and culturally accepted food.

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INTRODUCTION

Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems and practices. Also the concept of food sovereignty puts those who produce, distribute and consume food at the heart of a highly complicated network of food systems and policies rather than the demands of markets and corporations in a highly liberalized existing global trade regime (Patel, 2009). Land grabbing is defined as taking possession of or control over a large scale agricultural land for commercial/ industrial agricultural production that is disproportionate in size in comparison to the average land holding in the region (Behnassi and Yaya, 2011). There has been a recent surge of active interest in foreign investment in productive agricultural land across the developing world, from Pakistan to Indonesia, to Ukraine to Madagascar, to Sudan largely in Africa where land is comparatively cheap and in some places easily available (Friends of the Earth Europe, 2010). In contrast to past global trade and investment trends, almost half of the agricultural investment projects (48 %) covering two-thirds of the total area (39.7 million ha) involved are in Sub-Saharan Africa (Deininger, 2011) which is being considered as 'Agriculture's final frontier' (Woertz, 2012). The purchase or long-term lease of agricultural land for food production, predominantly by State-owned and private investors from Arab and wealthy Asian States into African and Southeast Asian countries, has received significant attention at different levels due to its long term irreversible impact on the socio, economic and environmental conditions of host countries and its communities (Smaller and Howard, 2009).

The land grab phenomenon is the result of a complex combination of number of socio-economic and environmental factors which triggered the recent surge of active interest for large scale

acquisition of agricultural land across the political, legal and geographical jurisdictions by the governments. Most importantly, interest in land acquisitions increased rapidly in the wake of the 2007–2008 commodity price boom and remained very high thereafter (Deininger, 2011). Also this food price crisis convinced these investors that global food markets would be less reliable and more volatile in the future, and that these markets could not be trusted to provide a stable supply of food commodities (Schutter, 2011b). Of the long-term factors, depletion of water resources and acceleration of desertification and land degradation process are some of the most significant drivers of this new rush of investment in agricultural land at overseas which has been termed as 'Food Colonialism' (EFRAC, 2009).

The changing nature of foreign investment in agricultural land in overseas by governments and major private companies is more strongly driven by food, water and energy security than a notion of comparative advantage (Schutter, 2011b) in the context of recent studies suggesting that the world will need 70 to 100% more food by 2050 (Godfray, *et al.,* 2010), to fulfill the needs and requirements of growing population especially in developing countries. This 'shift from domestic to foreign control over food resources and food production' means that large corporate deals will 'reduce the poor nations' likelihood of reaching food self sufficiency in the near future (Oakland Institute, 2009).

This emerging investment trend in agriculture across the boundaries has the potential to shift the process of realizing the rights of local communities with respect to food from national to foreign actors and from domestic to a complicated international political and legal jurisdiction. In many of the host States, there is inadequate administrative frameworks and legal safeguards to fully protect rights of local communities and indigenous people. To the vast majority of societies in Africa land is regarded not simply as an economic or environmental asset, but as a social, cultural and ontological resource (Friends of the Earth Europe, 2010). Many rural African dwellers consider land as one of their tangible assets that they could utilise in perpetuity, subject to traditional terms of use and culturally accepted norms and practices. Today the livelihoods of millions in Africa are already in vulnerable conditions due to erratic rainfall, arid climate and frequent droughts and famine. Equally the current level of large-scale investment trend may accelerate these insecure conditions because these small land holdings are quickly becoming attractive commodity for foreign agricultural investors to acquire pieces of land in Africa for fulfilling food security needs of their population and commercial interests of their private enterprises without adequately and appropriately considering the long term socio-economic consequences on these poor rural peasants. Therefore land grabbing seriously affects food sovereignty of indigenous people.

Desertification and Land Grabbing

The term 'Global land grab' refers to the explosion of national and transnational commercial and transactions and land speculation in recent years mainly, but not solely, around the large-scale production and export of food and bio-fuels (Saturnino M *et al.,* 2012). A convergence of global crises including financial, environmental, energy, food, etc, in recent years has contributed to a dramatic revaluation of, and tremendous rushes to control, land, especially the land located in the global South (Saturnino M *et al.,* 2012). Among different countries involved in land acquisition process at overseas, Gulf Cooperation Council (GCC) Countries have emerged as major players in recent years due to a number of socio-economic and environmental factors. This overseas investment in agriculture is not a new exercise for the GCC Countries. In retaliation to the Arab oil boycott, the United States of America (USA) threatened to cut off food supplies in the 1970s. As a policy response, the Gulf Countries explored and embarked on an ill-fated attempt to develop Sudan as a breadbasket. This strategy failed, yet in many ways it was a precursor to the current land investment drive in overseas by the GCC Countries (Woertz, 2012). Because of their geographical proximity and historical and cultural ties, the African countries ranked prominently at the agricultural investment radar of the GCC Countries.

In contrast to the global trends, the GCC Countries are not interested in bio-fuels which have accounted for a whopping 58% of large international land acquisition. However, they are more concerned about the stability of food supplies (Anseeuw, *et al.,* 2012). Rising food prices were not so much the issue for the GCC Countries when the global food crisis hit in 2008. They could easily afford them because of ample oil revenue. In fact their real concern was temporary export restrictions imposed by the food exporting countries. To make the matters worse, the limits of domestic agriculture became apparent at the same time (Woertz, 2012). Under these circumstances, in order to ensure continuity in food supply, the GCC Countries through overseas investment are planning to supplement to the market purchase, not to substitute at least for time being.

In the GCC Countries the decade-old practice of mining the fossil water aquifers has hit a wall of unsustainability. Fossil water has been exploited at an alarming rate. Renewable ground water is used

above the replenishment rates (Woertz, 2012). They use around 80 % of their total water supply for agriculture (Smaller and Howard, 2009) & still have low levels of self-sufficiency in food production. The geographical locations of these countries are not very well suited for agriculture given the arid climatic conditions and lack of availability of arable land. Nevertheless, Saudi Arabia and United Arab Emirates (UAE) have developed highly subsidized agricultural production schemes that are economically unviable & ecologically unsustainable because of an increasing water shortage and depletion of ground water resources. Together with a rapidly growing population, this lead to increased reliance on global food markets for fulfilling the growing domestic demands (Woertz *et al.,* 2008).

The large scale land acquisition is largely about shifting land and water uses from local to essentially long-distance farming to meet domestic food and energy needs (Schutter, 2011b). Saudi Arabia, which was till recently remained as world's sixth-largest wheat exporting country (Elhadj, 2008) & for many years actively encouraged wheat production domestically, has decided to phase it out by 2016 because it has significantly depleted the freshwater reserves in the country. This is in order to spare its remaining water resources for drinking and household purposes for future generations (Elhadj, 2008). Though it was late, finally the concepts of sustainable development and the principles of environmental governance struck the minds of Saudi policy-makers. In 2008, Saudi Arabia established a new agricultural fund which primarily focuses on preserving domestic water resources by investing in agricultural projects at overseas (Smaller and Howard, 2009). In the GCC Countries, the conventional water sources are predicted to last for 30 years at the most. These calculations are based on the ratio between the annual water withdrawal and groundwater recharging (Woertz, *et al.,* 2008). Except Oman, all the GCC Countries have renewable water resources of less than 1000^3 /y per capita, the benchmark established to identify chronic water scarcity (Alsharhan and Wood, 2003).

Also the Food and Agriculture Organization (FAO) studies in 1992 indicated that in Saudi Arabia alone, approximately 50 million hectare land was affected by wind erosion (Nasr, 1999). About 2 million hectare of irrigated land area in Saudi Arabia and 33.6% of the cultivated land of Bahrain are moderately salinised (GRC, 2007). Under this condition, land becomes unproductive for cultivation. Also in Qatar around 30 % of irrigated agriculture land is salinised (ACSAD, 2003). Similarly about 68 farms went out of production due to salinization in Qatar. The yield in State farms decreased by 30% or about 1500 hectere from irrigated soil degraded due to salinization (ACSAD, 2003). In Qatar, shallow profile soils (approximately 136,000 ha) are said to be susceptible to water erosion due to the occurrence of erratic rainstorms (UNCCD, 2000). Also the Water Stress Index (defined as % of renewable water resources versus actually used), is over 100 % in five of the six GCC countries (Alsharhan and Wood, 2003).

Desertification and land degradation played a significant role in guiding the GCC Countries to explore the option of acquiring productive agriculture land at overseas especially in Africa for fulfilling its domestic food requirements. However, concerns are expressed on land grabbing since along with other negative impacts it may lead to desertification and land degradation in the host countries. The ecological sustainability of land and water resources allocated for foreign investment is another important issue which needs focus considering nature of large scale foreign investments made in agriculture sector. Introduction of intensive agricultural production for export and commercial purpose can seriously threaten biodiversity, carbon stocks, and land and water resources. Equally converting forests or rangelands to mono cropping under the large scale land acquisition projects will in the long run reduce diversity in flora, fauna, and agro-biodiversity, as well as aboveground and subsurface carbon stocks. Many tropical soils are not suitable for intensive cultivation, or there is lack of sufficient water resources for undertaking intensive cultivation (Braun and Ruth, 2009).

According to some studies, in 1990, soil degradation was estimated to have affected 500 million ha or 17% of Africa's land. Susceptible dry lands (arid, semiarid, and subhumid aridity zones), covering 43% of Africa, are the worst-affected areas, affecting 485 million people. Approximately 65% of agricultural land, 31% of permanent pastures, and 19% of forest and woodland in Africa were estimated to be affected by some form of degradation in 1990 (Jama and Pizarro, 2008). Though the process of desertification may force the GCC Countries like others to undertake large scale land acquisition projects at overseas, the same trend accelerates the process of desertification and land degradation in the areas where the land is being acquired on a large scale for intensive cultivation.

Food Sovereignty and Land Grabbing

Food is a basic human right. For a healthy and productive life, everyone should have sufficient access to nutritious, safe, and affordable food. One of the humanity's significant achievements has been to produce adequate food for the largest growing population. Although, at the global level, there has been significant progress in increasing average food

consumption over the last few decades, today at least 2.5 billion people mostly from developing and under developed countries lack essential micronutrients that are needed to lead a healthy and active life (Schutter, 2011a). Almost 33% of Sub-Saharan Africans are malnourished, which is the highest prevalence in the world. In one-third of African countries the average daily calorie intake remains below the recommended level of 2100 kcal (Boussard, *et al.,* 2005). In 2007 and 2008, 20 countries faced severe food riots. In 2008, 33 countries were reported to be in a state of a severe food crisis (Vanhaute, 2011).

Food security is a multi-dimensional phenomenon, reflecting the overlapping, complex and highly interacting concerns of food access, availability, and utilization and the cross-cutting dynamic dimensions of ecological sustainability, equity, and health (Tyfield, 2011). 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' is considered to be a broader and inclusive concept associated with food politics. This is a term that was very specifically intended as a foil to the prevailing notions of food security. Food sovereignty is being considered as a precondition to genuine food security (Patel, 2009).

Food sovereignty is relatively an emerging concept associated with food politics, first brought to international attention at the United Nations' World Food Summit organised by the FAO in 1996. It was put forward by *La Vía Campesina*, an international movement which co-ordinates peasant organisations of small and medium-sized producers, agricultural workers, rural women, and indigenous communities from Asia, America, and Europe **(**Pimbert, 2009). Food sovereignty is the right of each individual, community and nation to maintain and develop its own capacity to produce its basic foods respecting cultural norms and traditions and productive diversity and harmony of its environment (Patel, 2009). Local knowledge of resource conservation and farming practices are aimed at producing and harvesting different crop varieties, livestock, and fish to meet the needs of the farmers and local community. The local markets are at the core of this traditional agricultural system. These practices are in equilibrium with the environment and biodiversity of the region.

Overall, 80% of the poor in developing countries live in rural areas and derive their livelihood directly from agriculture (Carvalho, 2006). Most of these rural poor are smallholder farmers, and agriculture is dominated by these smallholders in South and Southeast Asia and sub-Saharan Africa (Jama and Pizarro, 2008). They depend on small-scale farming activities mostly at the mercy of rain for their subsistence (Schutter, 2011a). Today most of the world's food is still grown, collected and harvested by over 2.5 billion small scale farmers, pastoralists, forest dwellers and artisanal fisherfolk. This food is primarily sold, processed, resold and consumed locally, with many people deriving their incomes and livelihoods through work and activities at different points of a long and complicated food chain, from seed to plate. Such localised food systems and networks provide the very foundations of people's nutrition, incomes, economies and culture throughout the world (Pimbert, 2009). A critical examination of core ideas of food sovereignty reveals the complex and heterogeneous composition of peasant, family, and small-scale agricultural communities. Understanding the heterogeneity, complexity, and subjectivity of these communities alongside the diversity of their cultural values, traditions, and customs shows the importance of protecting the food sovereignty of these people in the era of land grabbing and liberalized trade regime (Schanbacher, 2010).

To comprehensively address the pressing issues of hunger and poverty, the food sovereignty principles 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. Advocates of food sovereignty believe that food should be produced through diversified and community-based production systems in harmony with environment & biodiversity (Quaye, *et al.,* 2010). Food sovereignty recognizes the total benefits of small-scale agriculture by focusing not only on economic gains, but also on how this protects environment, promotes biodiversity, connects farmers and communities to the land and provides an intimate and culturally developed link between farming community and the crops and foods they produce and consume (Schanbacher, 2010).

Although poverty and under nourishment is increasing in large cities also, 80% of the undernourished and poor live in rural areas. They are not likely to be fed by enhanced industrialization and, as the World Food Summit (1996) recognized, small scale and sustainable agriculture, could provide the required food to reduce hunger in these areas. Promoting local agriculture is a goal of the Millennium Development Projects (Carvalho, 2006). Though the small scale farmers and local communities are at the heart and core of food sovereignty concept, the existing trend of land grab especially in Africa may seriously affect food sovereignty in an unprecedented level since this region is more vulnerable due to its climatic

conditions and low level of socio-economic development. Of the projects with commodity data, only 37 % focus on food crops (Deininger, 2011). Also this land grab will not only displace large number of these small land holding farmers but also disturb the environmental balance and ecological equilibrium between the long established production system and the sound cultivation methods. This land grab has the potential to radically change the ecological balance maintained by the farmers with respect to a long established production system and culturally accepted consumption pattern.

Desertification and Food Sovereignty

Food security refers not only to an adequate aggregate supply of food but also to a condition when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs for leading an active and healthy life (Sacks and Levi, 2010). Considering the current level of food inflation, countries that are net food exporters experience improved terms of trade, while net food importers face increased costs in meeting domestic demand. Almost all countries in Sub-Saharan Africa are net importers of cereals, and therefore likely to be affected negatively (Wodon and Zaman, 2010).

The ability of agriculture to support food requirements of increasing population has been a great concern for generations and continues to be high on the global policy agenda (Rosegrant and Cline, 2003). Food production depends on natural resources (water, land, biodiversity), farm inputs (capital, power, chemical inputs, & seeds), & human inputs (labor, management skills, institutions). The demand for food has long since outstripped the capacity of nature to provide it unaided & for several millennia humans have radically transformed natural system and ecological balance for the singular purpose of obtaining more accessible, reliable, and productive sources of food to meet growing demands of people. Adequate water supply and availability of arable land are vital resources for sustainable agriculture as a source of food for the global population. The main concern at the present time is whether the finite water and land resources are capable of producing adequate food to meet the projected nine billion people in 2050 (Sadik, 2010).

Currently Sub-Saharan Africa uses only two per cent of its freshwater resources for agricultural production. This region is therefore seen by foreign investors as potential destination for agricultural production due to its untapped water reserves. For example, Sudan, one of the countries interested to sell and lease land, greatly expanded irrigated agriculture in the 1970s with investment from Gulf States. Irrigated land now constitutes 10.2 per cent of total Sudanese cropland and provides more than half of total agricultural production (Smaller and Howard, 2009). In Africa as whole, less than 5% of farmland is irrigated and the average fertilizer application is less than 10 kg/ha (Jama and Pizarro, 2008).

On the other hand, throughout African history droughts and famines have occurred with varying degree of frequency & intensity affecting livelihoods of millions of people in many parts of this region. Most part of African continent lies in tropical and subtropical latitudes where temperatures are high throughout the year. However, extreme range of climatic variations can be experienced across the continent, the most significant climatic change being a long-term reduction in rainfall, particularly in the semi-arid areas of West Africa (Nicholson, 2001). In general, there has been a gradual and continuous decline in rainfall on the African continent since the 1960s (Barrios *et al*., 2006). Also there is evidence that Africa is warming faster than the global average and this is likely to continue (Collier *et al*., 2008). Continuous decline in rainfall along with a rising rate of evaporation due to higher temperatures will have serious consequences for development in Africa (Hope, 2011). This is because majority of people in Africa derive their livelihoods from agriculture, which represents the single largest economic activity on the continent. For example in sub- Saharan Africa, Agriculture contributes nearly 40% of exports, 34% of national income (>50% in some countries), up to 30% of foreign exchange earnings. In terms of employment it ranges 64-80% (Hope, 2008). By the 2080s, climate change is estimated to place an additional 80-120 million people at risk from hunger, and 70–80% of these will be in Africa (Parry *et al*., 2004). Overall in Africa, both arid and semi-arid areas are expected to expand by between 5% & 8% by 2080. This corresponds to a reduction of approximate 60-90 million hectares of agriculturally productive and fertile land (Boko *et al*., 2007).

Large-scale droughts that affect several countries simultaneously have wider implications on food security and food sovereignty. Most of the population in these countries identified as experiencing high-drought frequency are agro-pastoralists whose livelihoods are constantly threatened by erratic rainfall and arid environmental conditions. These countries are among the poorest in Africa and are extremely vulnerable to natural disasters and are struggling to cope with the impacts of droughts and famines (Haile, 2005). Due to lack of resources and poor access to environmental friendly technologies, farmers in Africa are unable to apply the appropriate adaptation and mitigation strategies.

About 55% of Africa's land area is unsuitable for agriculture. Only 11% of the continent, spread over

many countries, has high-quality soil that can be effectively managed to sustain more than double its current population. Most of the remaining arable land is of medium or low potential, with at least one major constraint for agriculture. This land is at high risk of degradation under low input systems (Jama & Pizarro, 2008). In fact, none of the Sub-Saharan African countries that attracted foreign investor interest recently achieved more than 25% of potential yields, and area cultivated per rural inhabitant remains below one hectare (Deininger, 2011). Though the African region is being considered as a destination of untapped potential and unexploited natural resources, it remains as vulnerable area for the changing weather and climatic conditions. Under these, the acquisition of large scale agricultural land and its cultivation techniques may accelerate the desertification and land degradation process in this region. The farmers and local communities will seriously be affected not only by the land acquiring process but also the resulting process of land degradation and desertification due to intensive cultivation.

While acquiring or leasing land, the governments may prioritise local and national economies and markets. Effective and practical measures need to be taken to empower peasants & local communities and to ensure food production, distribution & consumption based on environmental, social and economic sustainability. Governments need to initiate appropriate policy measures to protect the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. Also policy guidelines may be developed for governments and private companies for appropriate use of acquire the lands. In order to ensure food security of local communities, a particular percentage of agriculture production should be shared with local communities where the land is acquired. The *Principles for Responsible Agricultural Investment* may be translated in local languages and distributed to the local community. Local participation & employment opportunities for local communities in the land acquisition project should be incorporated. Local knowledge on water and land conservation should be utilized to ensure long term sustainability of the region and to protect the environment. Instead of displacing the local communities and the farmers, a kind of *Green Corridors* may be developed where the farmers can stay as it and produce. The governments or the private companies which acquire the land may help these farmers to produce more for both their consumption as well as export which may strike a balance between food sovereignty and land grab.

CONCLUSIONS

The link among desertification, land grabbing and food sovereignty is highly complicated. There are many factors involved in this complex process of interaction which include socio, economic, political, cultural and environmental. For GCC Countries, desertification and depletion of water resources played major role along with population growth and price rise in guiding the governments to explore the option of acquiring the lands in overseas. On the other hand, the way large scale land is being acquired and cultivated may lead to desertification. Food sovereignty is the right of individual, community and nation to maintain and develop its own capacity to produce its basic foods respecting cultural and productive diversity. The manner in which land deals are being signed between different governments and major companies affect the food sovereignty of people. Desertification and land degradation lead to migration of large number of people to other regions for livelihoods which affect their food sovereignty. A systematic multi-dimensional approach requires in addressing this complex link.

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