The changing landscape of the African agricultural value chain: Perspectives on Food sovereignty of smallholder subsistence farmers

Esther Leah Achandi[1] and Korkor Cudjoe[2]

1. University of Dar es Salaam; 2. The Graça Machel Trust

Abstract

Agricultural value chains in Africa have evolved in the face of liberalization and the subsequent globalization. Changes have been manifest in the emergence of new actors and new power relations along the value chain from seed production to marketing. These changes have had a myriad of effects on subsistence farmers specifically with regard to food security and their livelihoods. These changes have consequences for food sovereignty of smallholder farmers who are also the key producers of food in Sub Saharan Africa.

1. Introduction

A value chain refers to the set of actors (private, public, and including service providers) and the sequence of value-adding activities involved in bringing a product from production to the final consumer and in agriculture can be thought of as a 'farm to fork' set of processes and flows (Miller and da Silva, 2007). While traditional agricultural value chains are generally governed through spot market transactions involving a large number of small retailers and producers, Swinnen et al. (2013) note that high-value chains are characterized by products of high value, the use of stringent food quality and food safety standards, the importance of private standards in addition to public requirements, a high level of consolidation at some nodes in the chain (mostly at the levels of processing, distribution and/or retail) and high levels of vertical coordination at all nodes of the chain.

Rural development is largely driven by changes in farming systems and livelihoods embedded in agricultural value chains (Ruben) and Barrett et al. (2010) suggest that the modernization of agricultural value chains is both a cause and a consequence of development. Agricultural value chains have important implications for food security such as through introduction of new products; interventions that sensitize actors to address different issues (Brenneis et al., 2017) and improves food security and livelihood (Kissoly et al., 2017).

Nonetheless, emerging literature on food and livelihood calls for more than food security in its current form- there are increasing calls for food sovereignty (Weiler et al., 2014; Pachón-Ariza, 2013). Food security is defined as when all people, at all times have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (Pérez-Escamilla, 2017). Food Sovereignty conversely is defined as

> *"... the right of peoples to define their own food and agriculture policies; to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives; to determine the extent to which they want to be self reliant; to restrict the dumping of products in their markets, and; to provide local fisheries-based communities the priority in managing the use of and the rights to aquatic resources. Food sovereignty does not negate trade, but rather, it promotes the formulation of trade policies and practices that serve the rights of peoples to safe, healthy and ecologically sustainable production".*
> *(*Peoples Food Sovereignty Network (2002)

The food sovereignty ideology was born out of concerns about the effects of structural adjustment, trade liberalization, and a shift to an agricultural export orientation on local food economies, communities, and ecologies (Wittman, 2011). This paper seeks to review existing literature on the food value chains and implications on aspects of food sovereignty in Africa specifically with reference to smallholder farmers.

The rest of the paper is organized as follow; section two gives an overview of the agricultural value chains in Africa, section three highlights the food sovereignty concept, section four reviews food sovereignty aspects in the context of the African agricultural value chains while section 5 gives the conclusions, areas for further research in highlighting the food sovereignty issue.

2. Agricultural Value chains in Africa: Key Aspects

Colonial and post-colonial African economies were dominated by the agricultural sector (Delgado, 1998) within which cooperatives and government parastatals played a leading role in produce marketing (Dorward et al., 2004). Moreover, due to the prime role of agriculture in African economies (Delgado, 1998), cooperatives were often producers' organizations that relied heavily on a regulatory and governmental support framework (Develtere et al., 2008). Late colonial period for African agriculture was characterized by interventionist agricultural policies implemented via instruments such as marketing boards, marketing cooperatives, and laws governing state approved buying and selling agents (Dorward et al., 2004). Albeit the support that the agricultural sector received, Mkandawire (1999) notes that agriculture was the Achilles heel of postcolonial economic performance with Africa as the only major developing region showing declining per capita food production between 1961 and 1994. Moreover in order to support developing countries, the Structural Adjustment Programme conditionalities included within the agricultural sector, reducing or removing food and input subsidies, substituting market for official output prices, privatizing government crop marketing boards and liberalizing trade policy (Mehra, 1991).

Although SAPs resulted in liberalization and subsequent globalization, the gains did not necessarily fully filter through to smallholder farmers (Dixon et al. 2004). Moreover the entry of agriculture into the Uruguay Round Agreement on Agriculture (URAA) with its three "pillars" – market access, domestic support and export competition (Josling et al., 1994); the key question focused on the distributional impact of liberalization (Narayanan & Gulati, 2002) especially looking at who the losers are and who are gaining; what the opportunities and threats are and how smallholder farmers can be better placed to tackle each.

The interest in smallholder farmers is not abstract: food in Sub Saharan Africa is predominantly produced by smallholder farmers (Chauvin et al., 2012) and, Dioula et al. (2013) note that as food consumers, all rural and urban people in developing countries count heavily on the efficiency of their local smallholder farmers to satisfy their food needs. Moreover, smallholder farmers contribute considerably to the food system even as Fanzo (2017) notes that while most large farms worldwide supply cereals, livestock and fruits, the smallholder farms worldwide supply a variety of horticulture, roots, tubers, fish, and livestock and the mixed production systems generate more diversity of key nutrients (zinc, iron, vitamins A and B12, and folate) essential for human health. Smallholder farmers therefore have an important role in the food system with regard to dietary diversity (Ludwig, 2018; Burling and Dernini, 2010). Nonetheless, Sibhatu et al. (2015) cautions that markets still have an important role to play and argue that higher farm production diversity significantly contributes to dietary diversity in some situations, but not in all and recommend improving

small farmers' access to markets as a more effective strategy to improve nutrition than promoting production diversity on subsistence farms.

Smallholder farmers have thus attracted the attention of governments and development partners who have both come to accept value chain collaborations for agricultural sector actors in order to tackle the myriad of challenges that farmers face. This collaborative approach is heralded by views such as Neven (2014) who argues that food value chains are complex systems, the real causes of their observed underperformance may not always be obvious and typically, multiple challenges have to be tackled simultaneously in order to truly break poverty cycles. Value chain Collaborations have been promoted as a way to increase farmers' access to technology, inputs and markets, with the hope that this would increase their income and overall food security (Bitzer, 2011). Rankin et al (2016) argue that against a background of limited government resources and expertise, innovative partnerships comprising business, government and civil society actors are increasingly being promoted as a mechanism for improving productivity and driving growth in agriculture and food sectors around the world.

Moreover Narrod et al. (2007) notes that value chain collaborations through public-private partnerships can play a key role in creating farm-to-fork linkages that can satisfy the market demands for food safety while retaining smallholders in the supply chain. PPP are defined as a framework – that while engaging the private sector – acknowledge and structure the role for government in ensuring that social obligations are met and successful sector reforms and public sector investment achieved (ADB, 2008). Rankin et al (2016) note that for smallholder farmers, many of the partnerships show evidence of positive impacts on net income through improved market access, increased productivity, improved product quality or reduced costs through the adoption of new technologies, increased capacity of farmer organizations (FOs), and generation of on- and off-farm employment. Poulton and Macartney (2012) however caution that these arrangements have had some positive impacts on investment, although state failures can undermine their effectiveness and they add that the evidence base is still limited; they conclude by calling on organizations promoting innovative PPPs to disclose available information for critical examination.

The agribusiness environment is becoming increasingly volatile due to climate change, political actions (such as the push towards biofuels, influencing trade etc) [Swinnen, 2010] and social changes (Tubiello et al, 2008). The agribusiness chain is becoming more complex; there are many crops and food types each with its own distinct supply chain, new objectives added to the agricultural sector such as supply of bio-fuels and the new emphasis on health and nutritional outcomes, new opportunities for the sector such as improved technologies which also require necessary monitoring and regulation and lastly, new markets- new consumer segments with the growing globalization (Nier et al., 2019). Furthermore, agribusiness is surrounded by increasing scrutiny; increased call for traceability of and information on the food we eat; Swinnen et al. (2013) notes that smallholder farmers lack access to information on the rapidly-changing food regulations and quality standards in global markets, lack technical knowledge to comply with complex food safety and hygiene requirements, and lack financial means to make the necessary investment.

Additionally, there are concerns over food safety (Sheahan and Barrett, 2017), rapid rise of genetically modified crops (Buiatti et al., 2013) and the rise of labeling requirements (Louw, and Jordaan, 2016). Furthermore, agricultural value chains are becoming more urbanized and consumer driven, with a premium on quality and food safety besides, imports of many raw

and processed foods that could be produced at home are also growing rapidly. Driving these changes are rapid urbanization, rising incomes, globalization, population growth, and a growing share of young people (AGRA, 2017). Additionally there is increasing value chain coordination so that value chains are more inclusive and pro-poor (Haggblade et al., 2012). The agricultural value chain has also seen changes such as increase in multinational investments in smallholder grain market (Sitko et al,. 2018); supply of local and imported goods through the super markets (Muchopa et al., 2013) which meet consumer demands in terms of quality, convenience and volumes; increased financial sector penetration into the sector all along the value chain (Anseeuw & Ducastel, 2012). There has also been notable increase in multinational capital into food production through acquisition of farmland following concerns about food security and low investment in African agriculture (Deininger and Byerlee, 2011).

Furthermore, there has been rearrangement of the seed sub-sector with requirements about use of only certified seed in most African countries for specific crops: Herpers et al. (2017) note that across Africa, there are only a handful of countries that accept exchange and sale of seed within farmer led systems. Pray et al., (2011) submit that seed and processing are the two industries that have attracted the most R&D investment in Africa and seed breeding has been a key component with higher yields and incomes quoted as the result of use of improved seed (Toenniessen et al., 2008). Additionally, R&D has been one key area for knowledge transfer into the developing country agricultural sector particularly through private sector sponsored R&D adapting these technologies to the traditional context (Naseem et al., 2006). Moreover private sector R& D supporting agricultural initiatives in the developing world with multinational corporations form a big portion in agbiotech (Pray et al., 2003); and, Gui-Diby & Renard (2015) note that multinationals have been increasingly investing in food processing and distribution. Also, government policy has been concentrated towards attracting investments with the argument that foreign companies bring new technology, better organization, and financial assets (Tefera et al., 2019) all of which have been lacking for the African agricultural sector.

Evenso, the policy environment and institutions in most African countries have not been adequately prepared for globalization and liberalization effects on the agricultural sector and have thus embraced both without the sufficient institutional development to ensure equity and sustainability yet, Binswanger-Mkhize (2009) cautions that institutional environment determines who can contribute to development and how successful it will be, and is also the most important determinant of the distribution of the benefits. The issue of institutions remains key for the success of the agricultural sector. With increasing donor and government support in agriculture, the sector has received several interventions at different nodes of the value chain. Nonetheless, the effects of such efforts have sometimes been dampened by institutional failures. Studies such as Chinsinga (2011) in a political economy enquiry of agro-dealers, subsidies and rural market development in Malawi argues that Fertilizer Input Subsidies Program (FISP) degenerated into an instrument of patronage; that FISP was captured by a network of elites who appropriated it as a cash cow for rapid wealth accumulation. The FISP had been introduced to be a medium for broadening farmers' access to productivity enhancing inputs and technologies as a lever for sustainable rural transformation and prosperity. Furthermore, attempts at empowering input dealers when done without the necessary regulatory standards have led to thriving of counterfeit agro-products even as Rodenburg et al. (2019) in a study of 20 countries in Sub Saharan Africa note that sixty-two percent of the herbicides sold at rural agro-chemical supply markets are

unauthorized. Additionally, apart from the prevalence of the unauthorized agro inputs, the market is littered with adulterated products (Ashour et al., 2016) which contribute to low adoption of the productivity enhancing products when farmers become aware of the counterfeiting.

Overall, the agricultural value chain in Africa is characterized by opening up of new opportunities for both smallholder and big businesses. However the ability of key actors along the agricultural value chains to benefit from the rapid changes, there is need for a sound institutional reform that will ensure that benefits arising in the sector are equitably distributed. Moreover, key governance issues need to be addressed to ensure that aspects of property rights are well defined and sustainability of productive resources is ensured in the process of making gains from different value chain activities. Governments can no longer take a peripheral position but rather need to be directly engaged in setting policies in place that encourage innovation but at the same time accommodate equity and sustainability. Market forces alone cannot be left unbridled if the welfare and rights of less powerful players along the value chain are to be taken into consideration. Indeed, this is what development is about- it is not a blind focus on generating output and incomes but rather includes deliberate processes to raise the welfare of majority players along this value chain.

3. The Food Sovereignty Argument

Agricultural value chains play a key role in ensuring supply of food from the farm to the consumer and thus are non-negligible in the discussion on food security. Nonetheless, food security argument is not sufficient and there has been a rising body of literature advocating for more than food security (Weiler et al., 2014; Pachón-Ariza., 2013) and calling for food sovereignty. Food sovereignty is defined as 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 (Patel, 2009). Moreover, only recently (28th September 2018), the Human Rights Council of the UN approved the "Declaration of the rights of peasants and other people working in rural areas". The recognition of such rights indicates a global consensus on the role that farmers/ peasants play in the global food system.

La Vía Campesina (1996) first discussed food sovereignty at its Second International Conference, held on April 18–21, 1996, in Tlaxcala, Mexico. Peasant and farm leaders who gathered sought to articulate a common response to the free-market onslaught that had devastated their lives (Claeys, 2013). Wittman et al. (2010) asserts that the current definition of food security invites an interpretation towards food related policies that emphasizes maximizing food production and enhancing food access opportunities, without particular attention to how, where and by whom food is produced. They further add that such a definition is uncritical of current patterns of food consumption and distribution.

Moreover food sovereignty is not just a movement but when examined carefully it is a concept that McMichael (2016) highlights as addressing the undemocratic and unsustainable impact of the contemporary trade and investment regime. McMichal (2016) adds that it is about reorganizing inter-national political economy, modeling social struggle around democratic principles, gender equity, producer rights, ecological practices, and rebalancing the urban/rural divide. Moreover Patel (2009) cautions about the development agenda that the terms on which food is, or is not, made available by the international community has been

taken away from institutions that might be oriented by concerns of 'food security', and given to the market, which is guided by an altogether different calculus. An example of market forces guide food distribution is highlighted in Halewood (2011) using US corn exports to Mexico under NAFTA in the mid-2000s; U.S. subsidizing of its own corn industry resulted in cheap corn flooding the Mexican market, partly in a misguided attempt by the Mexican government to cater to short term consumer preference. Halewood (2011) adds that US corn was imported so cheaply and at such a high volume that it largely destroyed domestic Mexican corn production, driving out small and even corporate corn farmers throughout Mexico.

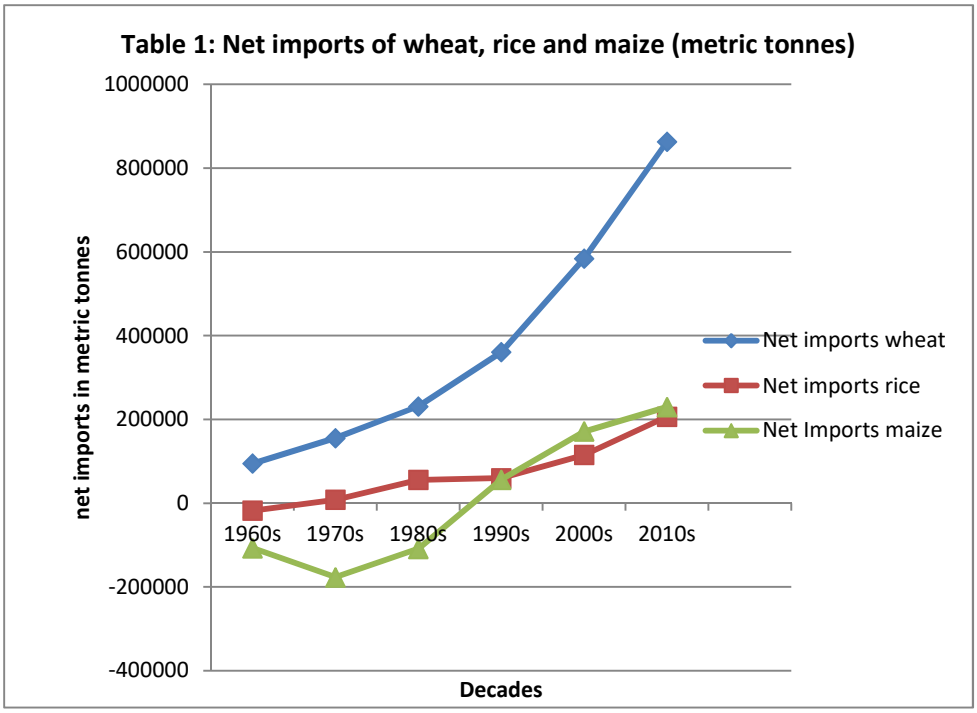
The importance of food sovereignty in this respect is that once domestic producers are driven out of the market, will the US continue to supply corn to Mexico: Additionally, if there was a shortage of produce of corn in the US, how will Mexico secure corn supplies given that domestic corn producers were driven out of the market? Such are questions that food sovereignty seeks to raise concerns about in light of food security concerns. This example indicates that market forces should not be left unbridled with regard to food trade. Indeed Patel (2009) summarized the center stage of food sovereignty in development analysis and states that food sovereignty is a precondition to genuine food security.

Through the lens of Via Campesina on food sovereignty, we explore consequences of the agricultural value chains on food sovereignty. Via Campesina's key priority areas of food sovereignty are highlighted as i) right to food ii) access to productive resources iii) mainstream agroecological production and iv) trade and local markets (Windfuhr & Jonsén, 2005). The key issues raised by food sovereignty are not stand-alones concepts but rather interconnected and we thus explore them in light of changes in the agricultural value chains.

4. Evolution of the agricultural value chains in Africa: A Review of Food Sovereignty Aspects

The right to food argues for adoption of a rights-based approach to food and agricultural policies that will lead to an end in violations of the right to adequate food and will reduce, and progressively eliminate, hunger and malnutrition. With regard to this pillar on culturally appropriate food, there has been an increase in importation of food. With increasing globalization, African economies have experienced increasing integration into the global market which has not been matched by sufficient changes in Africa's food production capacity and neither does the policy and market environment look opportune for Africa; Chauvin et al (2012) note that total food production (primary crops and meat) in SSA has been growing at a very slow rate of less than one per cent per year and that food production growth rate is not statistically different from population growth rate raising concerns about SSA ability to self-insure against food insecurity. They additionally note that without both food imports and serious effort to boost food production, SSA would not be able to ensure adequate food supply for the population.

Moreover Africa is becoming increasingly dependent on food imports with shifting consumer preferences for foods such as rice that are easy to store, cook and expend less food residue. Imports of key crops such as rice from low cost producers are more competitive than domestically produced products due to their low price on the market. **Table 1** below shows the trend in import of key cereals- rice, maize and wheat through the decades from the 1960s.



This increased reliance on imports as a source of staple foods has been noted by Porkka et al. (2013) in studying the shift from food insufficiency to trade dependency; they conclude that Sub-Saharan Africa has experienced a remarkable change with most countries, moving from low/moderate exporters to low/moderate importers. Moreover Staatz & Hollinger (2016) note that West Africa's food trade balances with the rest of the world have been negative since the beginning of this millennium; increased imports of sugars and processed foods with implications for Non Communicable Diseases (NCD) [Thow et al. (2015)]. Del Villar and Lançon (2015) note that West African sub-region is the biggest rice market in SSA, accounting for two-thirds of the region's rice demand with 50% imports, which represents about 20% of the total volume of rice traded globally.

Additionally, low cost food imports into the continent are very competitive on the domestic market making domestic production unattractive. In Western Africa, for Nigeria that is the largest producer of the region, Daramola(2005) notes that the decision to import foreign rice into Nigeria, depresses domestic price and some farmers are switching to alternative crops with similar ecological requirements; for Tanzania (the second largest producer of rice in Eastern Africa), Brüntrup et al. (2018) note that in 2016 illegal rice imports via Zanzibar flooded the Tanzanian market and depressed rice prices and export opportunities to neighbouring countries, which imposed import tariffs as a reaction. They further note that repeatedly high volumes of licensed sugar imports for the beverage industry dampened sugar prices and sales options and challenge the business models of sugar estates. Although some form of trade restrictions have been instituted: low cost imports of rice have been reported in Eastern Africa with the regional bloc imposing a 75% Common External Tariff (a few concessions have been made for Kenya due to its tea export to Pakistan, Zanzibar because it heavily depends on rice imports and to Rwanda in 2017 to address domestic shortages in rice).

Additionally for food such as rice, there is increasing food fraud through mixing mixed with domestically produced rice and selling on the market as domestically produced rice but at a

moderate price. This mixing distorts the market since the mixed rice is usually sold as domestically produced rice but at a price lower than that of the truly domestically produced rice but higher than that of imported rice. Moreover Sasson (2012) notes that in a world dominated by large agrifood companies and subsidized agriculture of the more developed countries, agriculture and food prices have been on a downward trend since 1990 implying harsh competition for small producers from developing countries; it is thus becoming increasingly difficult for these small producers to live from their farming activities. Food sovereignty seeks to draw attention to the plight of such producers when the food system locks them out of their basic livelihood and also threatens their food supplies.

Additionally, the dependency on food imports leads to the question of food safety; while most Sub-Saharan countries have formal institutions and structures in place to test imports, the actual implementation of such checks may not be fully effective. Much of the food trade in African markets is done in the informal sector making it extremely difficult to monitor quality of food continuously and meticulously. Moreover, with liberalization, there are several private players in the food subsector guided mainly by the profit incentive. Unscrupulous traders in the informal market are also known to mix imported and domestically produced foods so as to sell it as domestically produced food especially where consumer preference is known to be of domestically produced food (such is the example of rice in Tanzania). The issue of food safety becomes very difficult to monitor under such arrangements. Additionally, imports are known to be re-exported sometimes from coastal regions to landlocked regions thus further distorting traceability which is key in monitoring safety of food and knowing the clear source to be held accountable in case of any health concerns. Indeed in reviewing literature, for a continent that is increasingly reliant on food imports it is surprising to note the scant of literature examining safety standards of food imports in spite of increasing reliance on food imports.

Concerning the priority areas of access to productive resources and, mainstream agroecological production, we explore the seed subsector in agricultural production as follows: Bonny (2017) notes differences in the types of seeds with conventional seeds supplied by different companies around the world; genetically modified seeds created by big seed companies with specific genetic traits and traded through license agreements, farmers' seed from breeding efforts of farmers suitable for their soil, practices and needs; farm saved seed sown and harvested from conventional seeds of previous years and, seeds from public research as a result of formal public research. In traditional Africa, women were responsible for most harvesting and post-harvesting activities and therefore selected and saved breeder seed (Pschorn-Strauss).

With increase in agricultural research Piesse and Thirtle (2010) note that although earlier research and development initiatives were done around open access to intellectual property, with the agreement on trade related aspects of intellectual property rights (TRIPS), a number of massive multinationals are taking the lead in terms of investment in research and development. Moreover, they add that since genetic improvement is a derivative process, each incremental improvement adds a further layer of IP constraints. For a key agricultural input such as seed, Halpert & Chappell (2017) highlight the emergence of mergers and continued consolidation in the seed subsector with the existing intellectual property rights regime yet, Piesse and Thirtle (2010) caution that mergers increase a company's intellectual Property (IP) portfolio, giving it more freedom to operate and hence an advantage over smaller rivals. Additionally, the tangle of IPRs is likely to worsen concentration in terms of technology

ownership over time. Shand (2002) draws attention to the issue and notes that plant breeding and agricultural biotechnology has experienced rapid growth and consolidation in the hands of a few global firms. Remarkably, although the CGIARs hold the mandate of helping millions of people in Africa to achieve food security (Barrett, 2003), the leading multinationals investing in agricultural R&D are private (privates are usually driven by the profit motive)- thus two conflicting objectives for the two key investors in agricultural R&D in Africa (Piesse and Thirtle, 2010).

The evolution of the seed subsector is not without consequences. Pionetti (2006) notes consequences of such a private sector on women as autonomous seed producers as i) degrades their knowledge systems and innovation capacity ii) destroys an activity that provides a livelihood for marginal and landless rural farmers iii) undermines solidarity networks upon which the poor rely iv) women's bargaining power is eroded by market forces v) destruction of a localized seed economy through seed regulation. Additionally Shiva (2012) highlights the threat to indigenous seed and cautions that if farmers do not have their own seeds nor access to open pollinated varieties that they can save, improve and exchange, they have no seed sovereignty - and consequently no food sovereignty. Shiva defines seed sovereignty as including the farmer's rights to save, breed and exchange seeds, to have access to diverse open source seeds which can be saved –and which are not patented, genetically modified, owned or controlled by emerging seed giants. It is based on reclaiming seeds and biodiversity as "commons" and a public good.

Even though improved seed technologies generally alleviate the problem of low yield (with the assumption of availability and affordability of complementary inputs), indigenous seed systems (well engrained in the cultural practices of communities) help retain seed biodiversity and provide a socially sustainable system of access to seed. Kloppenburg (2008) highlights La Vía Campesina's caution that seed sovereignty has been gradually transferred from farmers and their communities to the boardrooms of the transnational firms who dominate the global market for seeds. Additionally it has been noted that with the presence of improved varieties in the seed sector, there is need for retention of knowledge for landrace crops. This knowledge has been driven to the peripheries of priority with increasing emphasis on adoption of improved varieties which are high yielding and able to address the food security challenge. Moreover, ignoring the landraces and other wildly growing varieties compromises food sovereignty in the sense that there is a loss in the crops for which most traditional consumers express preference. Traditional varieties of rice such as *supa* in Tanzania are preferred for their taste and aromatic qualities; similarly maize in Zambia (good example of a maize landrace is ghankata). *Ghankata* is regarded by farmers as less yielding than certified OPVs, but has a good taste and a hard seed covering that protects from weevils during storage. Another example of such consumer preferences is highlighted for potatoes in Kenya (Kaguongo et al). In spite of their qualities and domestic consumer preferences, the traditional landraces are rarely registered as a formal seed type and are thus seeds normally traded outside the legal system. Moreover, farmers prefer to grow the traditional landraces for own consumption while growing certified legally available seed for the market.

Indeed, the fact that the landraces are preferred by consumers is no secret in the market- it has been noted that traditional landraces when sold for consumption have a higher price than imports and other improved varieties. For this reason, unscrupulous traders usually mix imported and other improved varieties with traditional land races and market their output as traditional landraces so as to attract consumers and earn more on the market. An example is

the aromatic *supa* rice in Tanzania that is mixed with imports and improved varieties and sold on the market for a premium.

Additionally, in seeking to address the food security concern in Africa, there have been calls for a form of a "Green Revolution" initiative. The idealized green revolution however, has also been criticized; Sachs (2018) observes that the green revolution once hailed for ensuring global food security, has massively contributed to the decline in biodiversity through the introduction of uniform monocultures. Focus of the green revolution initiative in Africa has seen priority given to specific cereals such as rice while a genuinely nutritious diet is not comprised of one crop but rather a variety of crops. Governments and development partners' focus on key cereals has been seen through priority setting such as drawing the national sector strategies for a few cereals number of countries supported under the CARD initiative. Such initiatives need to take into consideration agroecology arguments raised by studies such as Suppan (2008) who highlight how crop diversity itself brought down blast severity in monoculture plots from 20 percent to 1 percent and the resulting yield increase was 18 percent. Advancing of key crops may herald a drive towards monocultural production systems which systems violate smallholder food sovereignty in production and are not necessarily viable if long term food sovereignty is to be achieved.

With regard to mainstream agroecological production argument of food sovereignty, there has been an increase in agricultural land as a way of expanding production in Africa. African agriculture is largely natural resource intensive and relies heavily on natural conditions to thrive Pereira (2017). Although land is a key resource in agricultural production, Bremner (2012) argues that with increasing urbanization and population growth, farms are likely to become smaller as farmers divide their land among their children. Moreover, Fuglie and Rada (2013) and, Chauvin et al. (2012) caution that without both food imports and serious effort to boost food production, SSA would not adequately supply food for its population.

African agricultural sector has also seen an increase in land acquisitions by foreign investors. Land transfers have been reported in Ethiopia with the existence of cheap land leasing (Ingebretsen, 2015) in Mozambique, Uganda (Twomey, 2014), in Sudan (Zambakari, 2012) amongst many more. The land grabs have resulted in displacement of traditional communities (Cotula, 2009; Graham et al., 2009) and loss of livelihood for them (Abbink et al., 2014). Liu (2014) reviews a number of case studies looking at large scale acquisitions of land and argue that foreign investment projects usually target export markets or the production of biofuels, and may pose a threat to food security in low-income food-deficit countries, especially if they replace food crops that were destined for the local market. The study also notes that the net effect on food security will also depend on the additional income generated by the project, its sustainability and how it is distributed in the local economy.

While agricultural production has traditionally largely grown through area (land) expansion, such expansions have come at a cost to the indigenous communities around land as a resource. Phalan et al. (2013) caution that expansion of cropland in tropical countries is one of the principal causes of biodiversity loss. Generally, natural resources will have a use and non-use value (Brown, 2000), use of land for agricultural production is thus mutually exclusive with all non-use benefits it accords to indigenous communities. This aspect of land, calls for redefinition of agricultural commodities (goods and services) coupled with development of appropriate markets mechanisms and regulations (for such markets) to facilitate exchange. While marginal lands can be viewed as communal or government land which can be assigned to large scale agricultural production, proper valuation of such land would involve the total use and non-use valuation (source of naturally occurring plants and animals which sustain

nutritional and medicinal needs of surrounding communities) that it contributes to the surrounding communities. In this case value of the land is not necessarily the volume of marketable crop that it can be used to produce but rather a bundle of commodities that it avails to the community, most of which are non-tradable due to missing markets for such services. Ensuring that all segments of the population, particularly marginalized groups participate and directly benefit from the growth and transformation opportunities will entail a review of policies to encompass all the dimensions under agricultural resources.

The gravity of biodiversity loss is not often covered under basic evaluation techniques in the face of increasing food production to avert food insecurity albeit existing arguments such as from Bharucha & Pretty (2010) who summarize best available evidence for the importance and values of wild foods in agricultural systems; and Belluco et al. (2013) who highlight that insects are a key source of protein (and the irony that while insects may contain upto 75 percent millions of funds are spent seeking ways to destroy insects in order to save crops that contain no more than 14 percent). In the process of seeking solutions by way of pesticides, traditional communities lose such a key source of proteins and adopt a lifestyle dependent purely on crops (destroying dietary diversity) which in their traditional context cannot be said to be culturally appropriate nor ecologically sound and neither sustainable thus defying the food sovereignty concept altogether.

Additionally, poverty is highly prevalent amongst smallholder farmers and they are mainly rural based in Africa (Livingston et al., 2011) and rural poverty coupled with increasing population has been attributed to degradation of the environment (Pinstrup-Andersen, et al., 1994). Since farmers are rational agents, they may abandon traditional crop varieties due to the yield benefits of modern varieties as well as other opportunities that manifest with development in spite of biological diversity providing humans with various and nutritious foods, and other products and services (Bellon et al. (2015).

Most important though in this debate, is not how to lock multinational players from access to the domestic African economies but rather, how to prepare indigenous communities better for the inflow of foreign actors into their food systems. This calls for sobriety and strategic policies which strike a balance between the rights of indigenous communities and the commitment to globalization and its implications. Additionally, emphasis of simple liberalized market solutions could result in the desired outcome of increased yields and incomes for farmers but on the detrimental side could crowd out the social equity virtue of sustainability. Therefore negotiation and regulation mechanisms can simultaneously be undertaken through engaging all stakeholders. Additionally, the proper functioning of the both factor and product markets is of great concern for agricultural sector especially given indigenous communities plagued by poverty and several competing needs. Consider a paraphrase of an example raised by Barrett (2007); when poor people's demand is not met through direct services, whether provided through formal institutions or by family, friends or neighbors, they resourcefully find other means to resolve their latent demand for services. These displaced distortions of markets can, however, have a high cost to their or their community's future welfare. For individuals without savings, their choices are often limited to distress sale of the limited assets they possess or seemingly irrational market participation and investment decisions that effectively allow consumption today that has a significant opportunity cost in the future, or 'de facto insurance' by cushioning consumption today by drawing down some (often natural) asset stock.

5. Conclusions

This paper sought to highlight the flow in debates about food sovereignty of subsistence farmers in light of the changes in the agricultural value chain in Africa. The agricultural value chain in Africa has changed considerably and opened up new areas for engagement of both domestic and foreign actors. Nonetheless, subsistence farmers still face hurdles in participating gainfully in the value chain. Moreover, they are increasingly losing control over key resources within which their comparative advantages in production lie. Against this backdrop, there is need for an active public sector because left to market forces, food trade may not deliver on welfare of the majority of the rural subsistence African farmers. In many aspects of production and distribution, these farmers lack food sovereignty.

Nonetheless, with the dynamic and wide nature of food sovereignty, there is the lack of clear indicators that can facilitate in-depth analysis. Attempts have been made to describe possible indicators for aspects of food sovereignty but for Africa, such data still remains largely unavailable. With increasing scientific interest in the food sovereignty and scholar interest, a quantitative analysis of the issue will be valuable and more informative. This is the line of investigation that subsequent studies will address to build on the arguments raised here-in.

References

Abbink, G. J., Askew, K., Dori, D. F., Fratkin, E., Gabbert, E. C., Galaty, J., LaTosky, S., Lydall, J., Mahmoud H. A., Markakis, J., Strecker, I., Turton, D. & Schlee, G. (2014). Lands of the future: transforming pastoral lands and livelihoods in eastern Africa. *Max Planck Institute for Social Anthropology working papers*.

AGRA. (2017). *Africa Agriculture Status Report: The Business of Smallholder Agriculture in Sub-Saharan Africa* (Issue 5). Nairobi, Kenya: Alliance for a Green Revolution in Africa (AGRA). Issue No. 5

Anseeuw, W., & Ducastel, A. (2012). New agricultural investment models and agrarian change in South Africa.

Ashour, M., Billings, L., Gilligan, D., Hoel, J. B., & Karachiwalla, N. (2016). *Do beliefs about agricultural inputs counterfeiting correspond with actual rates of counterfeiting?: Evidence from Uganda* (Vol. 1552). Intl Food Policy Res Inst.

Barrett, C. B., Bachke, M. E., Bellemare, M. F., Michelson, H. C., Narayanan, S., & Walker, T. F. (2010). Smallholder participation in agricultural value chains: Comparative evidence from three continents. *Available at SSRN 1733942*.

Barrett, C. B. (2007). Displaced distortions: Financial market failures and seemingly inefficient resource allocation in low-income rural communities. *Development economics between markets and institutions: Incentives for growth, food security and sustainable use of the environment*, 73-86.

Barrett, C. B. (2003). *The CGIAR at 31: An Independent Meta-Evaluation of the Consultative Group on International Agricultural Research*. Operations Evaluation Department Working Paper. World Bank, Washington, DC.

Bellon, M. R., Gotor, E., & Caracciolo, F. (2015). Conserving landraces and improving livelihoods: how to assess the success of on-farm conservation projects?. *International Journal of Agricultural Sustainability*, *13*(2), 167-182.

Belluco, S., Losasso, C., Maggioletti, M., Alonzi, C. C., Paoletti, M. G., & Ricci, A. (2013). Edible insects in a food safety and nutritional perspective: a critical review. *Comprehensive reviews in food science and food safety*, *12*(3), 296-313.

Bharucha, Z., & Pretty, J. (2010). The roles and values of wild foods in agricultural systems. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *365*(1554), 2913-2926.

Bremner, J. (2012). Population and food security: Africa's challenge. *Population Reference Bureau Policy Brief*.

Bonny, S. (2017). Corporate concentration and technological change in the global seed industry. *Sustainability*, *9*(9), 1632.

Binswanger-Mkhize, H. P. (2009, June). Challenges and opportunities for african agriculture and food security. In *Expert Meeting on How to feed the World in* (Vol. 2050).

Brenneis, K., Reinbott, A., & Rosa, A. (2017). The Potential of Agricultural Value Chains to Improve Nutrition Through Integrated Nutrition Activities.

Brown, G. M. (2000). Renewable natural resource management and use without markets. *Journal of Economic Literature*, *38*(4), 875-914.

Brüntrup, M., Schwarz, F., Absmayr, T., Dylla, J., Eckhard, F., Remke, K., & Sternisko, K. (2018). Nucleus-outgrower schemes as an alternative to traditional smallholder agriculture in Tanzania–strengths, weaknesses and policy requirements. *Food Security*, *10*(4), 807-826.

Buiatti, M., Christou, P., & Pastore, G. (2013). The application of GMOs in agriculture and in food production for a better nutrition: two different scientific points of view. *Genes & nutrition*, *8*(3), 255.

Burlingame B, Dernini S, eds (2012) Sustainable Diets and Biodiversity: Directions and Solutions for Policy, Research and Action (Food and Agriculture Organization and Bioversity International, Rome

Claeys, P. (2013). an Overview of Via Campesina's Struggle for New Human Rights. *La via Campesina's open book: Celebrating 20 years of struggle and hope*.

Chauvin, N. D., Mulangu, F., & Porto, G. (2012). Food production and consumption trends in sub-Saharan Africa: Prospects for the transformation of the agricultural sector. *UNDP Regional Bureau for Africa: New York, NY, USA*.

Chinsinga, B. (2011). Agro-dealers, subsidies and rural market development in Malawi: A political economy enquiry.

Cotula, L. (2009). *Land grab or development opportunity?: agricultural investment and international land deals in Africa*. Iied.

Daramola, B. (2005). Government policies and competitiveness of Nigerian rice economy. *A Paper presented at theWorkshop on Rice Policy & Food Security in Sub-Saharan Africa'organized by WARDA, Cotonou, Republic of Benin, November*, 07-09.

Deininger, K., & Byerlee, D. (2011). *Rising global interest in farmland: can it yield sustainable and equitable benefits?*. The World Bank.

Delgado, C. L. (1998). Africa's changing agricultural development strategies: past and present paradigms as a guide to the future. *Brown J. World Aff.*, *5*, 175.

del Villar, P. M., & Lançon, F. (2015). West African rice development: Beyond protectionism versus liberalization?. *Global Food Security*, *5*, 56-61.

Develtere, P., Pollet, I., & Wanyama, F. (2008). Cooperating out of poverty. *The renaissance of the African cooperative movement. Geneva: ILO*.

Dioula, B. M., Deret, H., Morel, J., Vachat, E., & Kiaya, V. (2013). Enhancing the role of smallholder farmers in achieving sustainable food and nutrition security. In *International Conference on Nutrition-better nutrition better lives, Paris*.

Dixon, J., Tanyeri-Abur, A., & Wattenbach, H. (2004). Framework for analysing impacts of globalization on smallholders. *Smallholders, globalization and policy analysis*.

Dorward, A., Kydd, J., Poulton, C., Stockbridge, M., Al Hassan, R., & Zulu, B. (2004). Agricultural liberalisation in sub Saharan Africa. *Final Report prepared by EC-PREP, November*.

Fanzo, J. (2017). From big to small: the significance of smallholder farms in the global food system. *The Lancet Planetary Health*, *1*(1), e15-e16.

Fuglie, K., & Rada, N. (2013). Resources, policies, and agricultural productivity in sub-Saharan Africa.

Graham, A., Aubry, S., Künnemann, R., & Suárez, S. M. (2009). Land grab study. *CSO Monitoring*, *2010*.

Halewood, P. (2011). Trade Liberalization and Obstacles to Food Security: Toward a Sustainable Food Sovereignty. *The University of Miami Inter-American Law Review*, *43*(1), 115-136.

Haggblade, S., Theriault, V., Staatz, J., Dembele, N., & Diallo, B. (2012). A conceptual framework for promoting inclusive agricultural value chains. *International Fund for Agricultural Development (IFAD), mimeo (online document)*.

Halpert, M. T., & Chappell, M. J. (2017). Prima facie reasons to question enclosed intellectual property regimes and favor open-source regimes for germplasm. *F1000Research*, *6*.

Herpers, S., Vodouhe, R., Halewood, M., & Jonge, B. D. (2017). The support for farmer-led seed systems in African seed laws.

Ingebretsen, E. (2015). A Thirsty Third World: How Land Grabs Are Leaving Ethiopia in the Dust. *wH2O: The Journal of Gender and Water*, *4*(1), 11.

Josling, T. E., Honma, M., Lee, J., MacLaren, D., Miner, W. M., Sumner, D. A., ... & Valdes, A. (1994). *The Uruguay Round Agreement on agriculture: an evaluation* (No. 938-2016-74523).

Kaguongo, W., Gildemacher, P., Demo, P., Wagoire, W., Kinyae, P., Andrade, J., Forbes, G., Fuglie, K. & Thiele, G. (2008) Farmer practices and adoption. *Working paper* No. 2008-5

Kissoly, L., Faße, A., & Grote, U. (2017). The integration of smallholders in agricultural value chain activities and food security: Evidence from rural Tanzania. *Food security*, *9*(6), 1219-1235.

Kloppenburg, J. (2008, November). Seeds, sovereignty, and the Vía Campesina: plants, property, and the promise of Open Source Biology. In *Workshop on Food Sovereignty* (pp. 17-18).

KPMG (2013). The agricultural and food value chain: Entering a new era of cooperation

Kumar, A., Singh, H., Kumar, S., & Mittal, S. (2011). Value chains of agricultural commodities and their role in food security and poverty alleviation-A synthesis. *Agricultural Economics Research Review*, *24*(347-2016-16892), 169.

Vía Campesina. 1996. "Tlaxcala Declaration of the Vía Campesina (Declaration of the Second International Conference of Vía Campesina, Tlaxcala, Mexico

Liu Pascal (2014). Impact of Foreign Agricultural Investment on Developing Countries: Evidence from Case Studies. Food and Agricultural Organization of the United Nations. FAO Commodity and Trade Policy Research Working Paper No. 47

Livingston, G., Schonberger, S., & Delaney, S. (2011, January). Sub-Saharan Africa: The state of smallholders in agriculture. In *Paper presented at the IFAD Conference on New Directions for Smallholder Agriculture* (Vol. 24, p. 25).

Louw, A., & Jordaan, D. (2016). Supply chain risks and smallholder fresh produce farmers in the Gauteng province of South Africa. *Southern African Business Review*, *20*(1), 286-312.

Ludwig, T. (2018). An egg for an egg and a bean for a bean? How production diversity determines dietary diversity of smallholder farmers in rural India. How Production Diversity Determines Dietary Diversity of Smallholder Farmers in Rural India *ZEF-Discussion Papers on Development Policy*, (247).

McMichael, P. (2016). Commentary: Food regime for thought. *The Journal of Peasant Studies*, *43*(3), 648-670.

Mehra, R. (1991). Can structural adjustment work for women farmers. *American journal of agricultural economics*, *73*(5), 1440-1447.

Miller, C., & Da Silva, C. (2007). Value chain financing in agriculture. *Enterprise development and microfinance*, *18*(2-3), 95-108.

Mkandawire, P. T., & Soludo, C. C. (1999). *Our continent, our future: African perspectives on structural adjustment*. Idrc.

Muchopa, C. L. (2013). Agricultural value chains and smallholder producer relations in the context of supermarket chain proliferation in southern Africa. *International Journal of Managing Value and Supply Chains*, *4*(3), 33.

Narayanan, S., & Gulati, A. (2002). Globalization and the Smallholders: A Review of Issues, Approaches, and Tentative Conclusions. *Unpublished, International Food Policy Research Institute, Washington DC*.

Narrod, C. A., Roy, D., Okello, J. J., Avendaño, B., & Rich, K. M. (2007). *The role of public-private partnerships and collective action in ensuring smallholder participation in high value fruit and vegetable supply chains* (No. 577-2016-39178).

Naseem, A., Omamo, S. W., & Spielman, D. J. (2006). *The Private Sector in Agricultural RD: Policies and Institutions to Foster its Growth in Developing Countries* (No. 591-2016-39907).

Nier, S., Klein, O., & Tamásy, C. (2019). Global Crop Value Chains: Shifts and Challenges in South-North Relations. *Social Sciences*, *8*(3), 85.

Neven, D. (2014). *Developing sustainable food value chains*. FAO.

Pachón-Ariza[1], F. A. (2013). Food sovereignty and rural development: beyond food security. *Agronomía Colombiana*, *31*(3), 362-377.

Patel, R. (2009). Food sovereignty. *The journal of peasant studies*, *36*(3), 663-706.

Peoples Food Sovereignty Network (2002). Statement on peoples' food sovereignty. Available at: https://nyeleni.org/IMG/pdf/Peoples_Food_Sovereignty_Statement.pdf Accessed 7th November 2018

Pérez-Escamilla, R. (2017). Food security and the 2015–2030 sustainable development goals: From human to planetary health: Perspectives and opinions. *Current developments in nutrition*, *1*(7), e000513.

Pereira, L. (2017). Climate Change Impacts on Agriculture across Africa Oxford Research Encyclopedia of Environmental Science.

Phalan, B., Bertzky, M., Butchart, S. H., Donald, P. F., Scharlemann, J. P., Stattersfield, A. J., & Balmford, A. (2013). Crop expansion and conservation priorities in tropical countries. *PloS one*, *8*(1), e51759.

Piesse, J., & Thirtle, C. (2010). Agricultural R&D, technology and productivity. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *365*(1554), 3035-3047.

Pinstrup-Andersen, P., Pandya-Lorch, R., & Elsenhans, H. (1994). Poverty, Agricultural Intensification, and the Environment [with Comments]. *The Pakistan Development Review*, *33*(4), 463-496.

Pionetti, C. (2006). *Seed diversity in the drylands: Women and farming in south India*. International Institute for Environment and Development.

Porkka, M., Kummu, M., Siebert, S., & Varis, O. (2013). From food insufficiency towards trade dependency: a historical analysis of global food availability. *PloS one*, *8*(12), e82714.

Poulton, C., & Macartney, J. (2012). Can public–private partnerships leverage private investment in agricultural value chains in Africa? A preliminary review. *World Development*, *40*(1), 96-109.

Pray, C., Gisselquist, D., & Nagarajan, L. (2011, December). Private investment in agricultural research and technology transfer in Africa. In *Agricultural Science & Technology Indicators (ASTI)/International Food Policy Research Institute (IFPRI)-FARA conference working paper* (Vol. 13).

Pray, C. E., Courtmanche, A., & Govindasamy, R. (2002, July). The importance of intellectual property rights in the international spread of private sector agricultural biotechnology. In *International Conference on Agricultural Biotechnology Research, Ravello, Italy* (pp. 11-14).

Rankin, M., Nogales, E. G., Santacoloma, P., Mhlanga, N., & Rizzo, C. (2016). Public–private partnerships for agribusiness development.

Rodenburg, J., Johnson, J. M., Dieng, I., Senthilkumar, K., Vandamme, E., Akakpo, C.,Akakpo, C., Allarangaye, M.D., Baggie, I., Bakare, S. O., Bam, R.W., Bassoro, I., Abera, B.B., Cisse, M., Dogbe, W., Gbakatchétché, H., Jaiteh, F., Kajiru, G. J., Kalisa, A., Kamissoko, N., Sékou, K., Kokou, A., Mapiemfu-Lamare, D., Lunze, F.M., Mghase, J., Maïga, I.M., Nanfumba, D., Niang, A., Rabeson, R., Segda, Z., Sillo, F.S., Tanaka, A., Saito, K. (2019). Status quo of chemical weed control in rice in sub-Saharan Africa. *Food Security*, *11*(1), 69-92.

Ruben, R., & Beekman, G. (2019) Agrarian Change and Inclusive Rural Development: Gaps & Challenges1. Keynote presentation UN-DESA Expert Group Meeting on Eradicating Rural Poverty to Implement the 2030 Agenda for Sustainable Development''. UN ECA, Addis Ababa, 27 February – 1 March 2019.

Sachs, C. (2018) Women Farmers and Food Justice: Preserving Biodiversity through farmer control of Seed. *Lead-up study to the 62nd session of the UN Commission on the Status of Women (CSW62)*, Rosa Luxemburg Stiftung, New York Office, February 2018

Shand, H. (2002). Private Sector Agricultural Research: Research Priorities of Agribusiness and How They Are Changing Farmers' Lives. *Schweizerisches Jahrbuch für Entwicklungspolitik*, (21), 65-76.

Sheahan, M., & Barrett, C. B. (2017). Food loss and waste in Sub-Saharan Africa. *Food Policy*, *70*, 1-12.

Shilomboleni, H. (2017). The African Green Revolution and the Food Sovereignty Movement: Contributions to Food Security and Sustainability A Case-study of Mozambique. Available at https://uwspace.uwaterloo.ca/bitstream/handle/10012/11323/Shilomboleni_Helena.pdf?sequence=1 Accessed 19th February 2019

Shiva, Vandana (2012): The seed emergency. The threat to food and democracy", 6 February, Al Jazeera, Available at: https://www.aljazeera.com/indepth/opinion/2012/02/201224152439941847.html [Accessed: 9th November 2018]

Sibhatu, K. T., Krishna, V. V., & Qaim, M. (2015). Production diversity and dietary diversity in smallholder farm households. *Proceedings of the National Academy of Sciences*, *112*(34), 10657-10662.

Sitko, N. J., Chisanga, B., Tschirley, D., & Jayne, T. S. (2018). An evolution in the middle: examining the rise of multinational investment in smallholder grain trading in Zambia. *Food security*, *10*(2), 473-488.

Staatz, J., & Hollinger, F. (2016). West African food systems and changing consumer demands.

Suppan, S. (2008). Challenges for food sovereignty. *Fletcher F. World Aff.*, *32*, 111.

Swinnen, J., Colen, L., & Maertens, M. (2013). Constraints to smallholder participation in high-value agriculture in West Africa. *Rebuilding West Africa's food potential: policies and market incentives for smallholder-Inclusive Food Value Chains*, 287-313.

Swinnen, J. F. (2010). The political economy of agricultural and food policies: recent contributions, new insights, and areas for further research. *Applied Economic Perspectives and Policy*, *32*(1), 33-58.

Tefera, D. A., Bijman, J., & Slingerland, M. A. (2019). Multinationals and Modernisation of Domestic Value Chains in Africa: Case Studies from Ethiopia. *The Journal of Development Studies*, 1-17.

Thow, A. M., Sanders, D., Drury, E., Puoane, T., Chowdhury, S. N., Tsolekile, L., & Negin, J. (2015). Regional trade and the nutrition transition: opportunities to strengthen NCD prevention policy in the Southern African Development Community. *Global health action*, *8*(1), 28338.

Toenniessen, G., Adesina, A., & DeVries, J. (2008). Building an alliance for a green revolution in Africa. *Annals of the New York academy of sciences*, *1136*(1), 233-242.

Tubiello, F., Schmidhuber, J., Howden, M., Neofotis, P. G., Park, S., Fernandes, E., & Thapa, D. (2008). Climate change response strategies for agriculture: challenges and opportunities for the 21st century. *Agriculture and Rural Development Discussion Paper*, *42*.

Twomey, H. (2014). Displacement and dispossession through land grabbing in Mozambique.

Weiler, A. M., Hergesheimer, C., Brisbois, B., Wittman, H., Yassi, A., & Spiegel, J. M. (2014). Food sovereignty, food security and health equity: a meta-narrative mapping exercise. *Health policy and planning*, *30*(8), 1078-1092.

Windfuhr, M., & Jonsén, J. (2005). Food sovereignty. *Towards democracy in localized food systems. Chippenham: ITDG Publishing*.

Wittman, H., Desmarais, A., & Wiebe, N. (2010). The origins and potential of food sovereignty. *Food sovereignty: Reconnecting food, nature and community*, 1-14.

Wittman, H. (2011). Food sovereignty: a new rights framework for food and nature?. *Environment and Society*, *2*(1), 87-105.

Zambakari, C. (2017). Land Grab and Institutional Legacy of Colonialism: The Case of Sudan. *Consilience*, (18), 193-204.