



Hacettepe University Graduate School Of Social Sciences
Department of International Relations

**POLITICS OF FOOD SECURITY: FOREIGN AGRO
INVESTMENTS**

Onur ÇELİK

Master's Thesis

Ankara, 2019

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ACCEPTANCE AND APPROVAL

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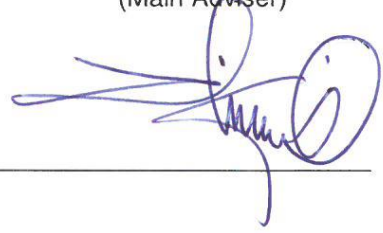
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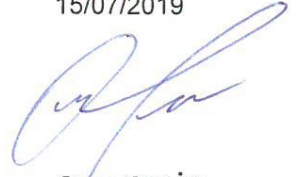
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ABSTRACT

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Food is one of the primary needs of human beings, if not the most important one. History witnessed numerous conflicts, wars, catastrophes derived from food. Therefore, food is power and the natural subject of politics and international relations. In mid-20th century, over-population and problem of feeding this increasing population became obvious. In order to increase the food production and solve hunger problem, a major leap called Green Revolution has started. In a result agricultural production significantly increased world-wide in a few decades. Even though, increasing food production provides hope to feed ever-increasing world population, major food crises display that supply is not adequate for hunger problem. Major food crises and hunger problems present a new concept to politics and international relations; food security which is a complex phenomenon that has many dimensions. Especially after the 2008 food crisis, foreign agro investments gained more importance and interest in foreign agricultural land boomed. It is estimated that almost eighty million hectares of land is subjected to foreign agro investments. However, when the recent trends, situation and implications of projects are analysed it appears that foreign agro investments turn into a powerful tool for neo-colonial land grabbing.

Key Words

Food security, foreign agro investments, food and politics, the Green Revolution, food crisis, post-development theory

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ABBREVIATIONS

AGRA:	The Alliance for a Green Revolution in Africa
BRIC:	Brazil, Russia, India and China
CDE:	Centre for Development and Environment at the University of Bern
CIMMYT:	International Maize and Wheat Improvement Centre
CIRAD:	The Centre de coopération Internationale en Recherche Agronomique pour le Développement
EU:	European Union
FAO:	The Food and Agriculture Organization
FDI:	Foreign Direct Investment
FIES:	The Food Insecurity Experience Scale
FFP:	Food for Peace
GDP:	Gross Domestic Product
GIGA:	The German Institute of Global and Area Studies
ILC:	The International Land Coalition
IPC:	The Integrated Food Security Phase Classification
IRRI:	International Rice Research Institute
MAP:	Mexican Agricultural Program
MDG:	United Nations Millennium Development Goals
OECD:	The Organisation for Economic Co-operation and Development
OIP:	Oil-for-Food Programme
QUNO:	Quaker United Nations Office
PoU:	Prevalence of Undernourishment
SA:	Saudi Arabia
SDG:	Sustainable Development Goals

UAE:	United Arab Emirates
UK:	United Kingdom
UN:	United Nations
UNDP:	United Nations Development Programme
UNICEF:	The United Nations Children's Fund
USA:	United States of America
USAID:	United States Agency for International Development
USSR:	Union of Soviet Socialist Republics

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INTRODUCTION

Food is one of the primary needs of human beings. As other humanitarian needs, like water and land, food has always been a subject of conflict between individuals, communities and states. Therefore, food is a natural issue of politics. Authorities who possess more food, are able to feed more people. When food is no issue within the community the discontent rate is low and governing getting easier for rulers. On the other hand, when there is a reverse situation, where hunger and famine appear in the community, there is unrest and political instability. History has witnessed numerous famines for tens of thousands of years. Even modern times humanity has been suffering from food shortages immensely. Between 1876 and 1879 global drought and famines that are mainly happened in Brazil, India, China and Northern Africa, caused 19 million deaths. Moreover, according to some estimations because of Great Chinese Famine in between 1959 and 1961, 41 million people died.

Industrial Revolution has changed the world entirely. Development in production and transportation caused accelerating increase in world population. At the beginning of 19th century world population reached 1 billion for the first time in history. Just in 150 years world population is more than doubled and exceed 2,5 billion and tripled in next 70 years. Today it is estimated that 7,7 billion people lives in the world and it is projected it will be 9,7 billion in 2050 and 11,2 billion in 2100. 80 per cent of the world will be living in Asia and Africa (Khokhar & Kashiwase, 2015). Although Industrial Revolution has shifted almost all ways of production, agriculture could not reach the pace of population increase. The main reason is it is strongly dependent on nature, as the land and climate are primary determinants. In mid 1900s the urge for increasing food production became obvious and a major leap called Green Revolution has started. The term used for major agricultural development including, new high-yield seed, massive infrastructure investments and introducing high-tech machinery to agricultural sector. The impact of the Green Revolution had seen in a few decades and agricultural production significantly increased that gives a hope to feed the world. Even though it seems the impacts are all positive, some argue that the increase in agricultural production is one of the major contributing

factors to the increase in population as well. Moreover, the Green Revolution is blamed for impairing the agrarian system and turned agriculture into capital-oriented industry which resulted in more hunger and poverty. Soon enough world faced a major food crisis in the beginning of 1970s that merely proved that increasing agricultural production is not adequate to feed world and impede hunger. The crisis created a broad impact and not only states, but also international organization decided to take significant precautions to prevent future crisis. But the steps taken were not sufficient and eventually, almost 40 years later, a second major global food crisis broke out in 2008.

These major food crises present a new concept to politics and international relations; food security. The concept first found its place in international relations agenda in mid-1970s. The first definition basically states that food security exists when there is enough food for everyone without production and price fluctuations. This supply-oriented approach has evolved throughout the decades. In 1980s food security was defined as access of people to food to sustain a healthy life. In 1990s, UN incorporates food security as one of the seven features of human security. At the beginning of 2000s, the definition gets its final shape that it is still used today, which simply says all people must have safe, economic and sustainable access to sufficient food that meets dietary needs. Food security is a complex concept that has four different dimensions which are; (i) availability; that covers the supply side, (ii) access; to guarantee that people can reach the available food, (iii) utilization; which means that accessed food has adequate nutritional aspects according to dietary needs of consumers and (iv) stability; which adds a time aspect to ensure food security is sustainable and continuous (FAO, 2008a).

Food security is simply measured by the number of undernourished people. In 1990, there were 1 billion undernourished people in the world (18,6 per cent of world population). In 2000, the number decreased to 900 million (15 per cent of world population) and reached lowest measured in 2015 with 784 million (10,6 per cent of world population). After 2015, decline trend stopped and there was 821 million undernourished people in the world in 2017 (10,9 per cent of world

population) (FAO, 2018a). Although there is substantial improvement in reducing hunger since 1990, still more than 10 per cent of world population cannot access enough food to sustain their lives, which makes food security is critical issue for national and international political agenda.

Improving food security is not only one of the main goals of states but also international and non-governmental organizations. There are numerous factors that determine food security. Poverty, population, agricultural production, armed conflicts and trade are the most prominent ones among many others. Liberalization policies of international trade also have great influence on food security. Global agricultural trade volume increased 5 times since 1970s and reached \$1.1 trillion in 2015 (FAO, 2018a), while agricultural employment decreased to half from 1990 to 2015 (World Bank, 2019). Based upon the same data, there are both supporters and critics of trade liberalization in agricultural products. Supporters argue that more liberal trade enables to free movement of goods which makes access easier, stabilizes the prices and encourages production. On the other hand, however critics argue that liberalization policies harm the small farmers and consumers in developing world which suffers more from food insecurity and it only provides benefits for capital-based companies of the developed world (QUNO, 2014).

Since food plays a vital role for humanity and politics, search for more food and control more agricultural land is continuous motive for states. From the beginning of European colonization of South America, exploitation of natural resources has been always a key matter for international relations. Despite the primary subject of exploitation is more valuable resources including precious metals and spices, with the rise of industrial production, from late 19th century, food also became a commodity that has been exploited. As food becomes more and more important with high population growth in 20th century, states started to look for new ways to produce more food. The Green Revolution in 1960s is a very solid step of this quest. At the beginning of 21st century, food necessity is still a major issue for national and global politics. It is estimated that \$83 billion is needed annually to make necessary investments in agriculture in order to

provide enough food to feed the increasing world population (Schmidhuber et. al., 2009). As most of these investments are needed to be realized in underdeveloped or developing countries and their financial capacity is not sufficient, foreign agro investments turn out to be a new way to produce more food and feed the world.

Although foreign investments are widely seen as a global financial tool, the investments which focus on agricultural production has always been a small share in total. However, since the beginning of 2000s and especially after the 2008 food crisis, foreign agro investment is no more an overlooked issue for international relations. Investments usually occurs in land purchase or long-term lease of the host land. There are numerous media news that covers the issue and reports tens of millions of hectares land deals all around the world. However due to the lack of transparency, only some of them can be verified. According to reliable data, there are approximately 80 million hectares of land deals are subjected to foreign agro investments between 2004 and 2012 (Anseeuw et al., 2012).

Investments come from all around the world but, China, Saudi Arabia, UAE, South Korea and Brazil lead the way. The investors main motive is not limited to ensure food security to homeland and but also using the surplus as a powerful economic and political tool. Basic food crops like wheat and rice are the primary targeted products to serve the purpose but non-food crops like rubber and fibre and flex crops like soybean and sugar cane are also cultivated under the roof of foreign agro investment projects.

The host states would like to attract foreign agro investments in order to get various benefits. The essential motive is to increase agricultural production and contribute to the national food security. In addition to this they expect from investors to bring expensive infrastructure which most of them cannot afford, to create new job opportunities and to introduce new agricultural techniques, technology and machinery. The major host continent is Africa by far which is followed by Asia. Sudan, Mozambique and the Philippines are the top three host states.

The concept is still relatively a new and multi-dimensional phenomenon which has many debated aspects. The main debate gathers around the impacts of foreign agro investments to host states. As the government itself is the primary actor for most of the host states governance quality and the structure of government institutions play a vital role in determining the impacts. Local conditions including the socio-economical structure of the targeted region, natural factors, negotiation, planning and execution details of the project are also among the critical determinants.

The favouring arguments of foreign agro investments basically states that it is a win-win situation which has not only provide benefits for investors and host states but also contribute to global food security and decrease hunger and poverty. On the other hand, the concept also receives strong criticism. The main argument of critics is that foreign agro investments only serve for the interest of investors and exploits the natural and human resources of the host states and harms the regional and global food security and welfare.

The research question of the thesis is; what is the relationship between food security and the use of agriculture by developed states to have control over underdeveloped states? On the basis of this historical and political background and recent perspectives and trends in international political economy and global politics, the thesis aims (i) to explain the significance of food in international policy making process, (ii) to analyse and discuss the concepts of food security and foreign agro investments in a multi-dimensional way and (iii) to find out whether the concept provides a win-win situation, or it is a tool for neo-colonial land grabbing.

The post-development theory constitutes the conceptual framework of the thesis. The theory is relatively new in development studies and first emerged in 1980s as a criticism to development theory. According to the post-development theory, the concept of development has been entirely shaped in western world according to their thoughts and standards and eventually the west has gained the label of developed but the rest of the world is labelled as underdeveloped or the third world (Ziai 2007). In development theory the west has the ideal norms

and the rest of the world should embrace and reach that norms. The post-development theory objects and argues that the measures of development or progress differs and there is no universal values of development. Another criticism of the post development theory is western concept of development is imperious. The governing authority who holds the power decides the boundaries of development and the ways to achieve it (Kippler 2010).

According to post-development theorists, the development projects which are shaped according to western ideals and norms do not only fail but also create more problems (Rahnema & Bawtree, 1997). Therefore, western solutions to critical issues such as poverty and hunger will eventually fail and rise the severity of the problem. Foreign agro investments are massive development projects which aims to contribute national and global food security. However, according to post-development theory, they will not solve the problem and but deepen it.

The thesis analyses the concept of foreign agro investments from the perspective of post-development theory by using statistical data in regard with agricultural production and hunger. The favouring and against arguments along with the major documents and reports that are related to concept are also reviewed to present an objective analysis.

The thesis assumes that food security is a prominent policy concern that shape domestic and international policies and it is an ascending critical issue in international political economy. States uses various political and economic tools in order to ensure food security and foreign agro investment is a powerful method to achieve this goal. However, the way it is applied, especially when host state is underdeveloped, it turns into a tool for neo-colonial land grabbing.

The discussion that the thesis focused gathered under three main chapters. The first chapter starts with an overview of the relationship between food politics and international relations. Following that the Green Revolution which is a major shift in agricultural production and the main food crises that affected millions of people all around the world has explained, in order to underline the role of food

in politics and provide a historical background for the existing conditions. To form a theoretical framework for the argument, the second chapter covers the concept of food security. The basic definitions, dimensions and contributing factors food security are followed by the relationship between trade liberalization and food security where the foreign agro investments perfectly fit in. The final chapter covers the detailed analysis of foreign agro investments including, the present situation, motives and profiles of investors and host states, factors determine the impacts on host states and finally states the favouring and against arguments to foreign agro investments.

CHAPTER 1

FOOD AND INTERNATIONAL RELATIONS

Foreign agro investments is a complex concept that involves different parties including states, communities, individuals, private companies and international organizations. This chapter aims to underline the relationship between food, politics and international relations. The major shifts and issues must also be well understood in order to see the development and current state of world agriculture where foreign agro investments emerge. To serve this purpose the Green Revolution which changed the methods of agricultural production fundamentally, and its impacts is discussed. In addition, the major crisis related to the food and political actions to recover are also explained.

1.1. FOOD AND POLITICS

Food is power. This simple yet meaningful phrase clearly explains that food has been one of the most important parameters which shaped individual and communal relations since the beginning of human history. Every single human being needs food which provides energy to do physical tasks, so in real terms food is also power. On the other hand, food delivers another sort of power to the ones who own and control it. Food can create great influence areas. That is where politics and food merge. Since the rise of the archaic state, political legitimacy has largely depended on the ability of the state to feed their people (Ochoa, 2012). The transition from a hunter-gatherer society to a structured agriculture and cultivation of crops had massive political implications. Although the scale and impact has changed over time, from local divisions of the village grain pile to an imagined Millennium Development Goals of the United Nations, food and politics have been inseparable since then (Herring, 2015). Food security, which is a relatively new concept in political science and international relations and will be discussed in detail in the following chapter, is one of the main issues of any political authority whether tribes, states or international organizations. Redistribution of land products or compensation of deficit have significant implications and consequences. Land and food are strongly attached to the nature of states and politics (Death, 2011). Almost all political

philosophers including Hobbes, Locke, Nietzsche and Foucault, underline the relationship between the people and land and tried to analyse the methods how can societies organize the distribution of agricultural products and agricultural workforce (Kuehls, 1996).

Naturally, food is not only a source of energy for living, but also one of the main concepts of economy. Major goal is clear; to control the surplus from the land. Landless poor section of the society fought for land and rich landlords resisted. Hungry demanded for food as a right or just for need. Producers or farmers wanted better prices from traders. And at the end all wanted state to intervene for their favour (Goodwyn, 1991). If there is a commodity that is involved in economy, there appears three main questions. First, what is to be produced? Second, how is it to be produced? Third, how is it to be distributed? It is inevitable that politics and state are involved while answering these questions (Herring, 2015). Although the shape of the fight for controlling the food has changed throughout the history, the picture is more or less same today. The role of food is complex and multidimensional; it “touches everything...is the foundation of every economy...and is a central pawn in political strategies of states and households” (Counihan & Van Esterik, 1997). Therefore, it is obvious that foreign agro investments has not only a economic aspect but a significant political one as well, which turns around the agricultural policies of states and sometimes international organizations.

1.2. INTERNATIONAL ASPECTS OF AGRICULTURAL POLICIES

At first appearance, agricultural policy may seem a domestic policy tool, since its main goals are securing adequate food for the citizens of the state and improving production through different measures like, investing in infrastructure and providing better conditions for producers and consumers. This single policy perspective only serves to nutritional aspects of food. However, as it is mentioned above, food is far more political than just being a resource for living. When it comes to economic aspects of food, it becomes a critical issue for political economy and eventually agricultural policies gain a strong international aspect.

Agricultural policy actions by national governments drive the international system together with private companies, inter-governmental and non-governmental organizations. Understanding the economic and institutional base under these actions is key to effective policymaking. Food markets can be global, but agricultural conditions are highly localized and can differ dramatically between developed rich and developing or underdeveloped poor countries.

Developing and undeveloped countries, who are generally the net importers of food, have been the ones who suffer a lot during food crisis. Some even face severe famine and massive deaths. Therefore, change in political attitudes toward agriculture is significantly important for them. In order to increase the food production, they must pay extra attention to their agricultural policies. Increasing the production contributes to rural development, more stable economy, and from an international point of view, reduces interdependence.

On the other hand, developed countries are the biggest exporters of food. Their agricultural policies do not only aim to secure food for citizens and to improve the nutritional diet but also to secure an incredibly significant trade weapon. Eventually any major shift in agricultural policy of a nation would affect other nations in terms of export or import capacity.

Food is not only an important trade commodity that provides economic advantage but also it creates significant political power. Colonial states have used different policy and social movement tactics to influence what colonies can grow (Paarlberg, 2008). For instance, Kenya and Tanzania (Tanganyika in colonial era) became prominent coffee exporters, which is a significant cash crop, under British mandate. Initially coffee had been cultivated both by indigenous people and European settlers. However in 1930s Native Reserves was established in Kenya to limit the natives to access land and in Tanzania only small portion of population was allowed to produce coffee but there was no such limit for the white settlers. The main idea behind was to concentrate the production in order to increase efficiency and maximise the profits (Frankema, Green & Hillbom, 2014).

Similarly, food aids are also another form of using power via food. Exporter states launch aid programs in order to attain power over poor states. At the opposite side they cut aid to impose sanctions. Food embargos and export restrictions are used as means of warfare and as a tool for foreign policy. For instance, United States (US) has the oldest governmental food aid programme that is still active when this thesis was written. In 1954, President Eisenhower signed the law for establishing the food aid programme that known as the Food for Peace Act. In following decades, the programme turns into Food for Peace (FFP) Office within United States Agency for International Development (USAID) which claims that has done more than any other national assistance programme to help the hungry around the world (Schaefer, 2018). As another instance, UN launch Oil-for-Food Programme (OIF) in 1995, in order to provide food, medicine and other humanitarian goods exchange for oil, for Iraqi people which was under international sanctions then. The programme turned into a global scandal when widespread abuse and corruption were revealed. OIF dissolved in 2003 after the US invasion of Iraq (McMahon, 2006).

All these conditions depend on the agricultural capacities and agricultural policy actions of states. Since food, especially grains, has become more strategic in terms of feeding people and agricultural economy, if there is a surplus, the state gains an incredible leverage in foreign affairs. If there is scarcity, interdependence rapidly and sometimes perpetually rises and the state falls behind in other matters of international relations.

1.3. THE GREEN REVOLUTION

The Green Revolution is referred an agricultural development which started regionally but spread worldwide and has globally changed the aspects of agricultural production. The term of Green Revolution is first pronounced by William Gaud, head of USAID in 1968:

These and other developments in the field of agriculture contain the makings of a new revolution. It is not a violet Red Revolution like that

of the Soviets, nor is it a White Revolution like that of the Shah of Iran. I call it the Green Revolution (Gaud, 1968).

The Green Revolution has introduced the massive agricultural production with high efficiency. The way that the Green Revolution changed the global agricultural production is also paved the way for foreign agro investments.

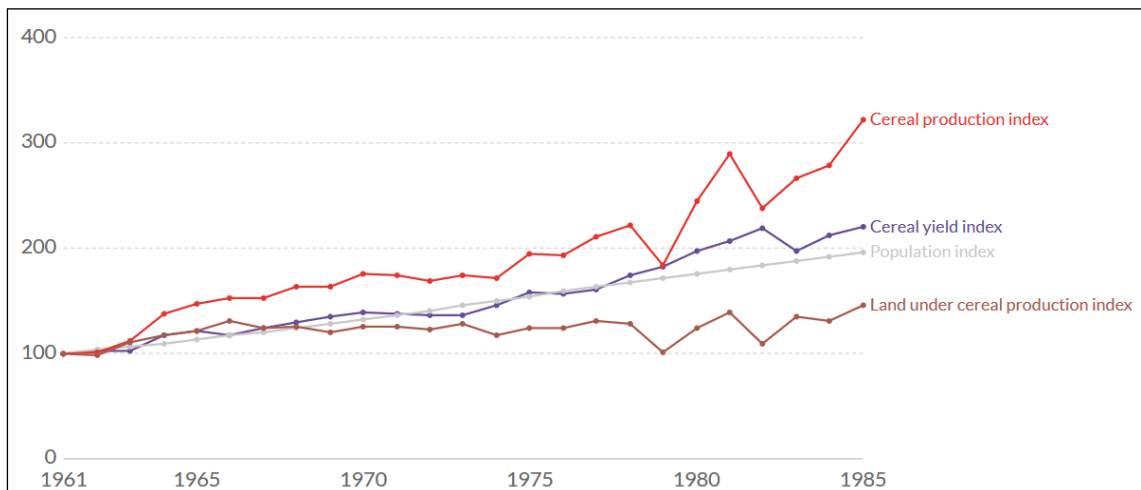
1.3.1. History and Development

Although the Green Revolution generally referred as massive increase in agricultural productivity in Asia, it started in Mexico in 1940s. Mexico has a long and rich history of agricultural development, however, it has been shaped heavily by non-national players for centuries, including Spanish colonialism (1521-1821), US invasion (1846-1848), French colonialism (1861-1867) and massive investment by US (1877-1910) (Gridle, 1986). Destruction of local economies of agriculture has begun with the Spanish colonialism but did not come to end by the declaration of independence and continued in twentieth century (Wolf, 1969). By 1910, 90 per cent of rural population was landless and only 15 per cent of indigenous communities had retrieved their communal land (Gridle, 1986). With the impact of Mexican Revolution land reforms took place till mid-1930s and land distribution started to get better. However, the major improvement has occurred between 1935 and 1940 when Lázaro Cárdenas was the president. During this period distributed land was quadrupled (180,000 km²) in comparison to past 25 years (Yates, 1981).

Following this major leap in agricultural development, the fundamental change, which will also have global impacts, has started in 1940s. Mexican agricultural policy shifted from the agrarian focus to one that backs large-scale commercial landholders (Alcántara, 1976). Mexican government launched Mexican Agricultural Program (MAP) which constitutes massive investments in irrigation infrastructure, agricultural mechanization and research. In 1943, with a huge support from United States government and Rockefeller Foundation, International Maize and Wheat Improvement Centre (CIMMYT) was founded. Under this roof, biologist Norman Borlaug, who won the Nobel Peace Prize in

1970, developed so-called ‘miracle wheat’ in 1954 and the CIMMYT has continued to work on other crops, especially rice (Patel, 2013). As result of MAP, Mexican production on essential corps, namely wheat, rice, bean, corn and sorghum increased by 10 and 15 times from 1940 to 1985 (Sonnenfeld, 1992). Figure 1 displays the total cereal production measured in metric tonnes, cereal yield measured in kilograms per hectare, land used for cereal production measured in hectares. The index shows the relative increase by comparison with 1960 data (Ritchie, 2017). From 1960 to 1965, cereal production has increased in the same line with land used for production, which makes almost no change in yield rate. However, following 20 years, yield rate has taken effect that resulted 3 times increase in cereal production.

Figure 1: Cereal production, cereal yield, land under cereal production and population index data of Mexico

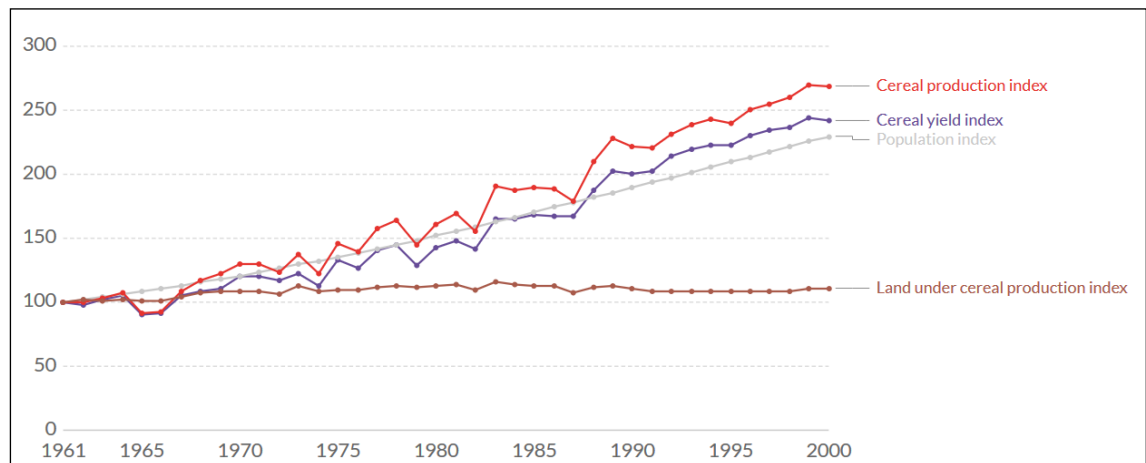


Source: Ritchie, 2017

In 1960s, the Green Revolution spread to Asia. Philippines, together with the Ford Foundation and the Rockefeller Foundation established International Rice Research Institute (IRRI). The research created a far more productive rice breed (IR8) and consequently Philippines’ rice production almost tripled in 20 years (Estudillo & Otsuka, 2006). In same years Indian government invited Norman Borlaug to apply his practices in India. Borlaug imported seeds from CIMMYT and IRRI and similar results in productivity were reached in selected pilot regions (Sebby, 2010). Figure 2 displays the cereal production, cereal

yield, land under cereal production and population index data of India between 1960 and 2000 (Ritchie, 2017). As it can be seen in the Figure 2 although there is almost no change in land under cereal production almost tripled in 40 years.

Figure 2: Cereal production, cereal yield, land under cereal production and population index data of India



Source: Ritchie, 2017

1.3.2. Consequences and Impacts

In Mexico, Philippines and India, the Green Revolution has delivered impressive results by means of crop productivity. Both three states were net importers of essential crops and some faced serious famine. After the success of the Green Revolution both became exporters. Practices of the Green Revolution has not only been applied in above mentioned countries but also in China, South and Southeast Asia and Latin America, in the same line but in various scopes. On the other hand, in Africa the impacts of the Green Revolution are very limited in comparison with the other regions.

The fundamental impact of the Green Revolution, however, is not regional but global. It totally changed the methods of agricultural production. The use of mineral fertilizers, pesticides and irrigation was boomed. Between 1970 and 1990, in developing countries fertilizer applications increased by 360 per cent, pesticide use increased by 7 to 8 per cent per year and irrigated lands increased by 30 per cent. As a result, world cereal yields increased from 1.4

tonnes per hectare to 2.7 tonnes between 1960s and 1990s. Over the past 30 years, world agricultural production has doubled, and world agricultural trade has tripled (FAO, n.d.).

1.3.3. Favours Arguments

The Green Revolution gathered considerable amounts of supporters from all around the world, especially from liberals. The main argument of supporters is that the Green Revolution has solved the hunger problem of the world and averted many possible famines by increasing the agricultural production yield. Thanks to Green Revolution, many developing states which suffers from hunger and famine, reach well and safe level in food security. In connection with this, poverty is also reduced. According to supporters, another significant effect of the Green Revolution is to decrease the food prices by the remarkable increase in supply, which makes people reach the food more easily. In addition, expansion in global agricultural economy lead to increase in job opportunities, especially for rural population, which contributes to welfare of communities (IFPRI, 2002).

1.3.4. Criticism

Statistical data proves the arguments of the supporters that the Green Revolution boosted agricultural productivity, but it also receives strong criticism that it did not contribute to sustainability, nor to food security in developing countries. Critics reminds socio-economic and ecological effects of the Green Revolution.

The first criticism to the Green Revolution is that it fuelled overpopulation. Between 1950 and 1990 global cereal production increased 174 per cent while the global population increased by 110 per cent (Otero & Pechlaner, 2008). Although some state that the Green Revolution prevented the hunger and famine globally, others claim that it is the main reason for overpopulation and its' consequences.

The second major criticism is that the Green Revolution did not help small farmers, but harmed and undermined agrarian system while favouring large

commercial landholders. In India, for instance, the lack of a stable agrarian system has made it difficult for Green Revolution technology to impact everybody positively. Small farmers were just not equipped to keep up with the pace of the Green Revolution (Sebby, 2010). In Mexico, during the period of development land was transferred from smaller to larger farmers. Green Revolution swept the effects of land reform of 1935-40 (Alcántara, 1976).

Third, the critics underline the ecological effects of the Green Revolution. The new methods that was introduced by the Green Revolution like synthetic fertilizer and pesticides, caused environmental degradation in a serious way.

Last but not least, the Green Revolution is criticised that Africa have not significantly benefited from (Briney, 2018). Due the lack of adequate infrastructure like irrigation systems and transportation together with pricing policies that harms the small farmers, the technologies of the Green Revolution became too expensive for African states can afford (IFPRI, 2002). In other words, the Green Revolution turned the global agricultural system into intensive and capital dependent model where developing states cannot fit in and fall behind in food security.

Arguments that criticize the Green Revolution has common points with critics to foreign agro investments which will be discussed in detail in Chapter 3. But basically, it can be said that both gathered around the argument that massive agricultural production impairs the small farmers, has adverse effects on ecology and not the solution for hunger but fuel it.

1.3.5. Today's Perspective

Although history tells that the Green Revolution has started by the Rockefeller Foundation and Mexican government in full cooperation, the Foundation was the driving force (Patel, 2013). Today, similar in 1940s, some philanthropic organizations have urged that food production needs to be rapidly increased through a “new” or “second” Green Revolution and the way to achieve this is massive agricultural investments by means of production and research (Morvaridi, 2012). On the top of the list of organizations, there is AGRA (The

Alliance for a Green Revolution in Africa), which is funded by the Bill and Melinda Gates Foundation and the Rockefeller Foundation. The stated aim of AGRA is to increase agricultural productivity by implying more resilient seeds, developing soil health and productivity, promoting agricultural market and policies (The Rockefeller Foundation, n.d.). Another leading organization supports a new green revolution is Food and Agriculture Organization of the United Nations (FAO). It states that food production must increase more than 75 per cent in the next 30 years and the way to achieve this by obtaining higher yields (FAO, n.d.). The new Green Revolution is seemed to be the only remedy for overpopulation and increase in malnutrition. Besides biotechnology and agro genetics, technology will help to increase productivity. However, the new Green Revolution is also criticized that it will not cure the major problems but create more serious ones in the following decades as it has happened with the first one.

Africa is on the target of supporters of the new Green Revolution. The main argument is the continent miss the first one and consequently has a great potential in agricultural productivity as still has large uncultivated land. Moreover, the desired efficiency can only be achieved through technical advancement and capital investment. At this point the arguments coincides with supporting views of foreign agro investments. So, it can be said that the foreign agro investments is a perfect tool for new Green Revolution.

1.4. GLOBAL FOOD CRISES OF 1972-75 AND 2008

Since the industrial revolution and consequentially with the massive improvements in transportation and communication, world gets more and more connected and interdependent. Accordingly, issues and crisis are no longer national nor regional but global, especially if it derives from basic resources. Food crisis is one of the prominent ones. Despite the impacts of the Green Revolution over agricultural productivity, during past 50 years there was two major global food crisis that has affected masses and had impacts on national and international policy making processes. First had happened in 1970s, namely between 1972 and 1975 and the second in 2008. In some respect these

two major crises showed the world that increasing agricultural production is an adequate to solve hunger problem. The problem is much bigger, and it is multi-dimensional. Below, there is an overview of causes, consequences and impacts of these major food crises.

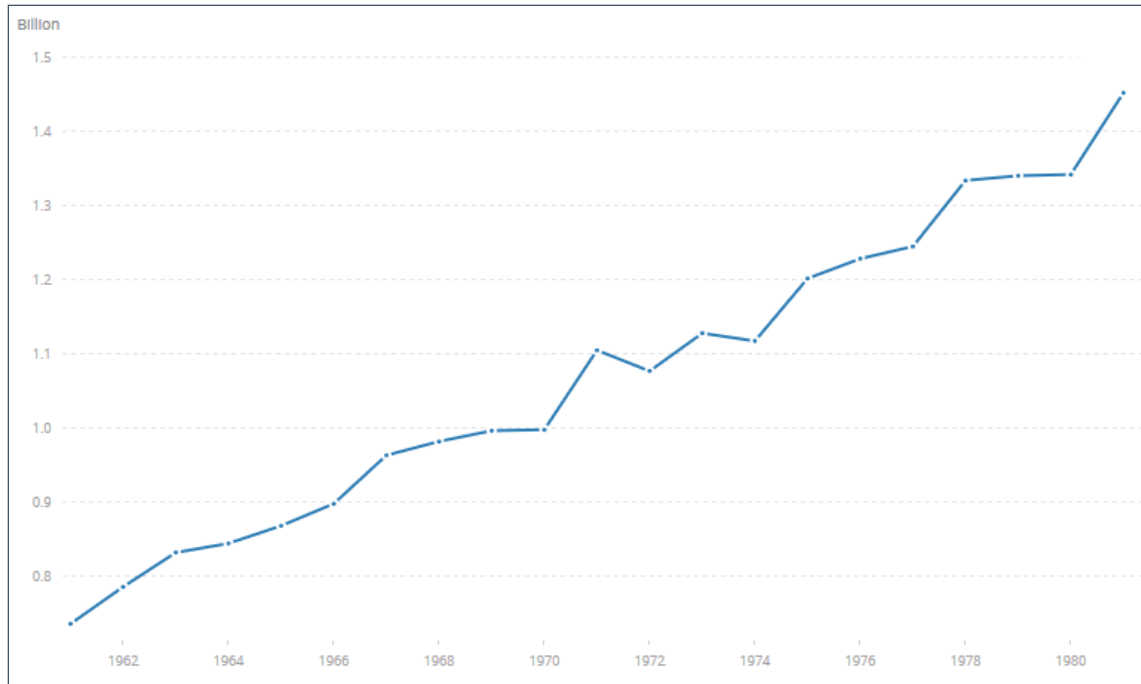
1.4.1. 1972-75 Crisis

Grains are the most significant product by several lengths, accordingly any change in supply and price have critical outcomes. In poor countries, the grains are consumed directly. It is the base of the diet that is supplemented by some meat, poultry, and fish. In richer countries, the portion of the grains that are consumed directly is very low, but most of them are used for feeding meat and dairy animals and poultry, which are the major elements of the diet (Hathaway, 1975). In the early 1970s world has confronted with scarcity in the global grain market, towering prices and famines in different countries of Asia and Africa.

As it is explained above, the Green Revolution led to large gains in agricultural productivity and cultivated land expanded significantly. In the developed countries there was surplus capacity of high technology agriculture and global grain production was rising nearly every year between 1960 and 1972 (28 million tonnes average annual increase) (Figure 3). However, in 1972, the bad weather struck Soviet Union, Asia and Africa, including a strong El Nino event and world grain production dropped almost 40 million tons, for the first time in 20 years (there was 85 million tons increase in 1971) (Figure 3). As the result of this decline and due to lack of adequate export monitoring, USSR imported large sums of grain from United States and depleted most of its stock which led to a sharp increase in prices (Hathaway, 1975). In 1973 world grain production slightly recovered but this time increase in oil prices hit the global agricultural economy, as since the Green Revolution mass agricultural production heavily depended on oil products such as pesticides, herbicides and nitrogen-based fertilizers (FAO, 2009). 1974 was again a very bad year for grain production, this time not only for USSR and Asia but also for North America. Hence many countries faced with severe grain deficits and some like India and Bangladesh

with famine. The grain prices increased record high and the crisis led to global conference.

Figure 3: World grain production between 1961 and 1981



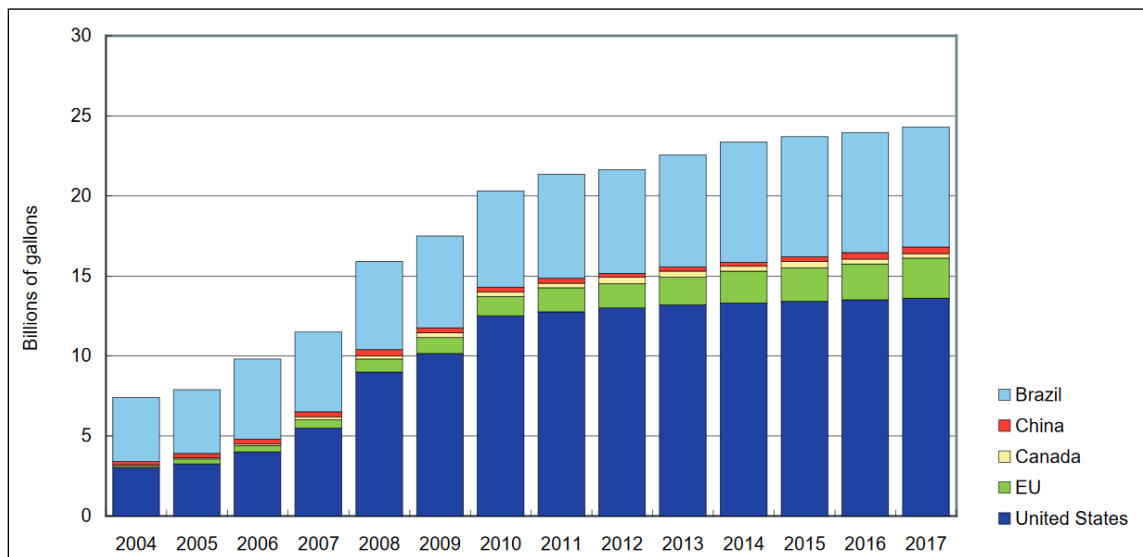
Source: World Bank

The 12-day-long UN World Food Conference was held in Rome during the peak of the crisis in November 1974. The call for the conference accepted worldwide and 133 high-ranking country delegations, 18 UN organisations, 28 inter-governmental organisations, 161 NGOs, 69 multinational corporations and 400 journalists attended (Gerlach, 2015). There were three major areas that the Conference focused on; the first is increasing food production by empowering small farmers with high-yield seeds, fertilizers and irrigation infrastructure. The second is constructing a better and sustainable system of stocks and increasing food aid and the third is regulating international food trade to prevent future trade crisis. Despite of these ambitious issues, there was almost no improvement in trade regulations and comprehensive food security system. The countries were only agreed on to increase the food production through agricultural development (Horton, 2009).

1.4.2. 2008 Crisis

The 2008 food crisis is very similar in character to the 1972-75 crisis, similar set of events provided a cause for crisis. Between 2000 and 2006 international agricultural trade increased by 50 per cent, because of an increase in agricultural production in developed countries and consequently their exports to developing ones (Trostle, 2008). Changing diets in developing countries, which includes more meat, contributed to a fast increase in grain demand (Peters, Langley & Westcott, 2009). Increase in biofuel, namely ethanol, production is another factor which pumped the grain demand. Biofuel production in US and EU started to rise rapidly in 2005 and most of the feedstock used in biofuels comes from crop production (Trostle, 2008). Figure 4 shows the world ethanol production

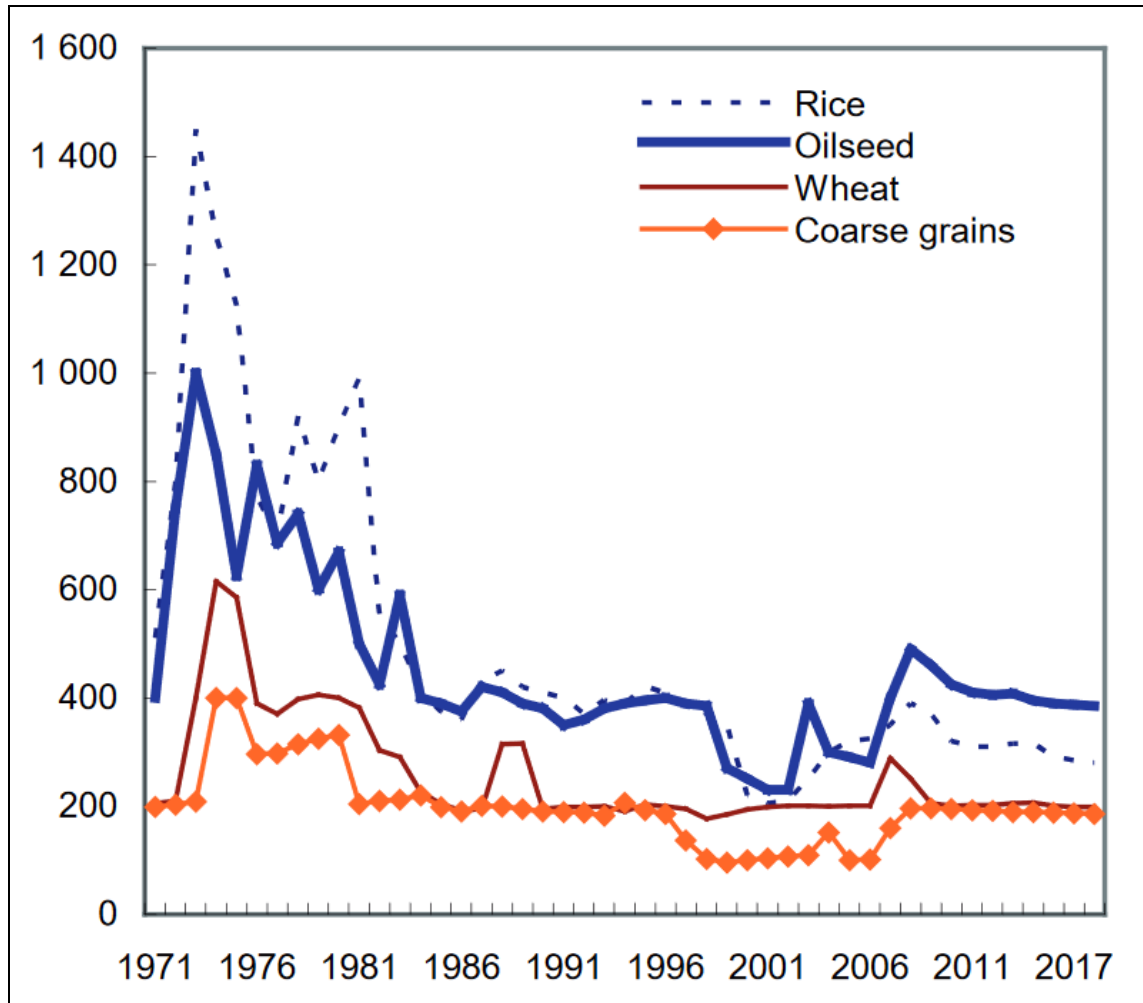
Figure 4: World ethanol production between 2004 and 2017



Source: Trostle, 2008

However, on the supply side, production has increased at a slower rate than population growth for almost two decades. The grain stocks have declined since 2000, from 30 per cent of annual consumption to 15 per cent in 2007. Thereby there was little resilience in grain stocks and the market. Significant harvest failures of global wheat exporters like Australia, Russia and Ukraine contributed to the vulnerability and at the end of 2007 food prices spiked (Figure 5).

Figure 5: Basic food prices between 1971 and 2017



Source: OECD & FAO

Like 1974, states came together in Rome to take actions against the crisis. The place is not the only similarity of global response efforts but also the agenda is quite similar to the UN World Food Conference of 1974. The participant states called for, supporting small farmers to provide stable production, managing food stocks more effectively, regulating international grain trade for fair distribution, sustainable use of biofuels and taking emergency measures against famine. This time the main or may be the only, success of the global response was the international food aid. International organizations raised respectable amount of funds (Jaspars & Wiggins, 2009).

The 2008 food crisis was the result of combination of short-term factors which are; (i) increased global demand, escalated by high production of biofuels, (ii)

reduced grain stocks, (iii) poor grain production of main wheat exporters, (iv) increasing oil prices which caused increase in the fertiliser prices and overall production costs and (v) increase in biofuel production in the US. In following years, the prices reduced rapidly from the peak point, however it has been stayed approximately 30 per cent higher from the pre-crisis period. The crisis has once again proved that, the global grain production which is the backbone of food supply of the world, is very vulnerable and not resilient even to small changes. It seems that that the prices will be more volatile and the market will be more sensitive unless the long-term measures are taken.

The 2008 food crisis was perceived as a warning signal for the states of which food security is at the top of their political agenda. The crisis urged these states for take immediate actions in order to be well-prepared for the next food crisis. Accordingly, they seek tools to achieve this aim and foreign agro investment is an important one.

CHAPTER 2

FOOD SECURITY

The relationship between food and politics and the major global shifts and crises in last 60 years have been discussed in the first chapter. The concept food security is at the top of the national and global agenda when food is a matter of politics. Since the concept is starting point of the arguments that are favour foreign agro investments and underline the benefits of it, this chapter aims to analyse food security in various aspects.

The chapter begins with the definition of food security that has been evolved since its pronounciation. After that, the concepts of hunger, undernutrition, malnutrition and poverty which are the key determinants of food security are defined. Since the food security is a complex phenomenon its dimensions and related aspects are also discussed alongside with the measurement methods and current global state of food security. After the definitive part, the chapter continues with detailed analysis of contributing factors to food security. Finally, the relationship between trade liberalization and food security is discussed as the arguments form a basis for foreign agro investments.

2.1. THE CONCEPT AND BASIC DEFINITIONS

Food security is a relatively new concept for international relations. Although it has been pronounced since 1970s, especially after the 1972-5 food crisis, it has evolved throughout the decades. It is not only the concept of food security but also the parameters that conceptualize the term have also evolved according to the ever-changing perception and agenda of states and international organizations. In order to asses this evolution and where the concept stands today, the aspects of food security and the basic definitions related to it are explained below.

2.1.1. The Definition

Both policy makers and scholars have been attempted to define food security in various occasions. In 1990s there were approximately 200 different definitions of the concept (Maxwell & Smith, 1992). As the food becomes more and more

significant and as it has been one of the most important issues on political agenda of states for the last 50 years, the concept of food security also evolved accordingly.

After the most significant food crisis of 20th century, in 1974 World Food Conference, the participant states had proclaimed that “every man, woman and child has the inalienable right to be free from hunger and malnutrition in order to develop their physical and mental faculties”. The Conference had also designated some targets to avoid any future crises and to feed the world in an effective way. The main target is eradication of hunger, food insecurity and malnutrition in the following decade. Because of several political and economic reasons, the ambitious target had not been reached (FAO, nd). In addition to global targets the term of food security had been discussed and pronounced loudly for the first time at in a high-level meeting. Focus of the first highly acknowledged definition of food security is supply. The aim was to produce adequate food for the world population. In the Conference, food security had been defined as; “Availability at all times of adequate world food supplies of basic food stuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices” (UN, 1975).

Almost after a decade, FAO realized that demand side was missing in 1974 definition and expanded in 1983 as follows; “ensuring that all people at all times have both physical and economic access to the basic food that they need” (FAO, 1983).

After a couple of years, another leading international organization, World Bank published a highly influential report of Poverty and Hunger in 1986. The report introduced distinction between chronic food insecurity which rises from structural problems and transitory food insecurity which generally happens because of temporary effects such as force of nature or economic and political crisis (FAO, 2003). Poverty and Hunger Report of World Bank had also contributed the definition of food security by adding; “access of all people at all times to enough food for an active, healthy life” (World Bank, 1986).

In 1994, UNDP defined human security and its aspects in Human Development Report. Food security was one of the seven pillars human security of which others are; economic security, health security, environmental security, personal security, community security and political security (UNDP, 1994).

In 1996, The World Food Summit took place in Rome with focus on food security. The participant states signed the Rome Declaration on World Food Security and the World Food Summit Plan of Action, which at the first-place states that;

We pledge our political will and our common and national commitment to achieving food security for all and to an ongoing effort to eradicate hunger in all countries, with an immediate view to reducing the number of undernourished people to half their present level no later than 2015 (FAO, nd).

In the summit, definition of food security has gained a more complex body; “Food security exists when all people, at all times, have physical and economic access to sufficient safe nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO, 2002).

The adopted definition of 1996 had a final shape in The State of Food Insecurity 2001 report of FAO; “Food security is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO, 2002). This definition is widely accepted that balances supply and demand side with different aspects of securing food for people.

2.1.2. Hunger, Undernutrition, Malnutrition and Poverty

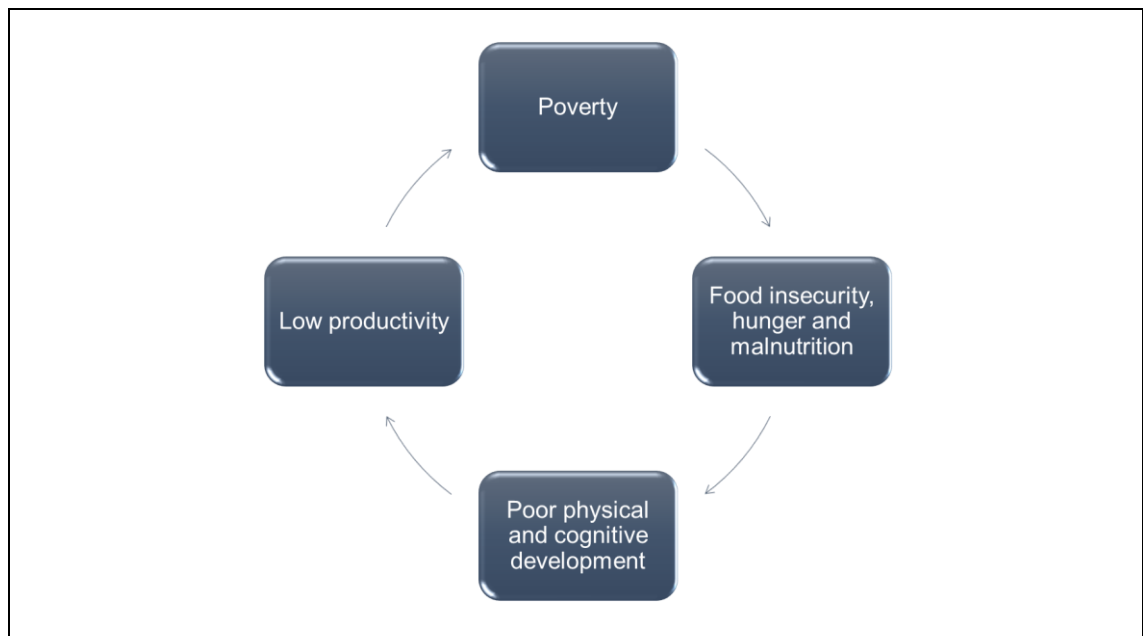
In scientific way hunger simply refers as food deprivation. In more broad way, FAO defines hunger as “uncomfortable or painful sensation caused by insufficient food energy consumption” (FAO, 2008). FAO often uses chronic undernourishment instead of hunger, which is defined; “a person’s inability to acquire enough food to meet daily minimum dietary energy requirements during 1 year” (Webb et al., 2018).

Undernutrition simply indicates insufficient food or energy intake. It includes being underweight, too short (stunted), dangerously thin (wasted) and deficient in vitamins and minerals (UNICEF, 2006).

Malnutrition is more extensive term that describes any deficiency, excess or imbalance in diet. It covers both undernutrition overweight and obesity (overnutrition) (Webb et al., 2018). Moreover, it may relate other factors than food such as; poor care for children, inadequate health care services and unhealthy environment (FAO, 2008).

Although poverty is more general term and effects many other aspects of personal and social life, it is the main reason of hunger and undernutrition and it is strongly related with food security (Figure 6). According to OECD; “poverty encompasses different dimensions of deprivation that relate to human capabilities including consumption and food security, health, education, rights, voice, security, dignity and decent work” (OECD, 2011).

Figure 6: Poverty and hunger cycle



Source: FAO, 2018

2.1.3. Dimensions of Food Security

Food security is a multi-dimensional concept. From the well accepted definition, four main dimensions were identified and each of them covers a different side of the concept. These four dimensions are; availability, access, utilization and stability. In order to say that there is food security, all conditions of both four dimensions must be met.

Availability is related to the supply side of food security which the first definition of 1974 focused on. It is identified by production, stock levels and net trade (FAO, 2008). Although the adequate supply of food is not necessary to provide food security, states which have high availability of food have lower levels of undernourishment and food insecurity (FAO, 2018). This dimension focuses on agricultural development while dependent on weather conditions and also food trade.

The second dimension is access. As the food supply does not guarantee food security for household level, access to available food is also crucial. It is strongly related with wealth distribution, condition of agricultural market and prices (FAO, 2008).

Utilization is the third dimension, which covers the nutritional aspects of food security. It is commonly referred to as the way in which the body makes the most of nutrients from food (FAO, 2008). It includes varieties in diet, healthy environment for food intake, adequate healthcare, and intra-household distribution of food (FAO, 2018).

Stability adds a time dimension to food security. Even if the conditions of the above three dimensions are met today, it does not guarantee it will last as it is. Food security is very vulnerable to climate events as well as economic and political crises (FAO, 2018). It is more likely to see food insecurity where there is political turmoil.

2.1.4. Time Aspects of Food Security

Food insecurity is classified in three in terms of its time aspect as chronic, transitory and seasonal. This classification is crucial for policy making process as reasons and outcomes are diversified.

Chronic food insecurity exists when people are not able to gain the minimum level of nutrients for a sustained period. It is long-term and persistent. The main reasons behind the chronic food insecurity is poverty and insufficient access to economic resources and public services. Since it can only be overcome by long-term and structural developments in every dimension (FAO, 2008).

Transitory food insecurity is short-term and temporary. It happens when there is instantaneous fall either in supply or access to that supply. Unexpected climate changes that effects agricultural production, natural disasters, sudden rise in prices and dramatic changes in household income are some of the main reasons of transitory insecurity. Because it occurs acutely, planning and policy making is difficult. Early warning system and emergency action plans are amongst many other solutions (FAO, 2008).

Although these are the main time classification of food security, FAO states that there is also seasonal food insecurity which is between chronic and transitory and also resembles both of them in some way. It occurs when predictable series of event has happened in cyclical period and this causes food insecurity for a limited period of time (FAO, 2008).

2.1.5. Measurement of Food Security, Global Goals and Current Status

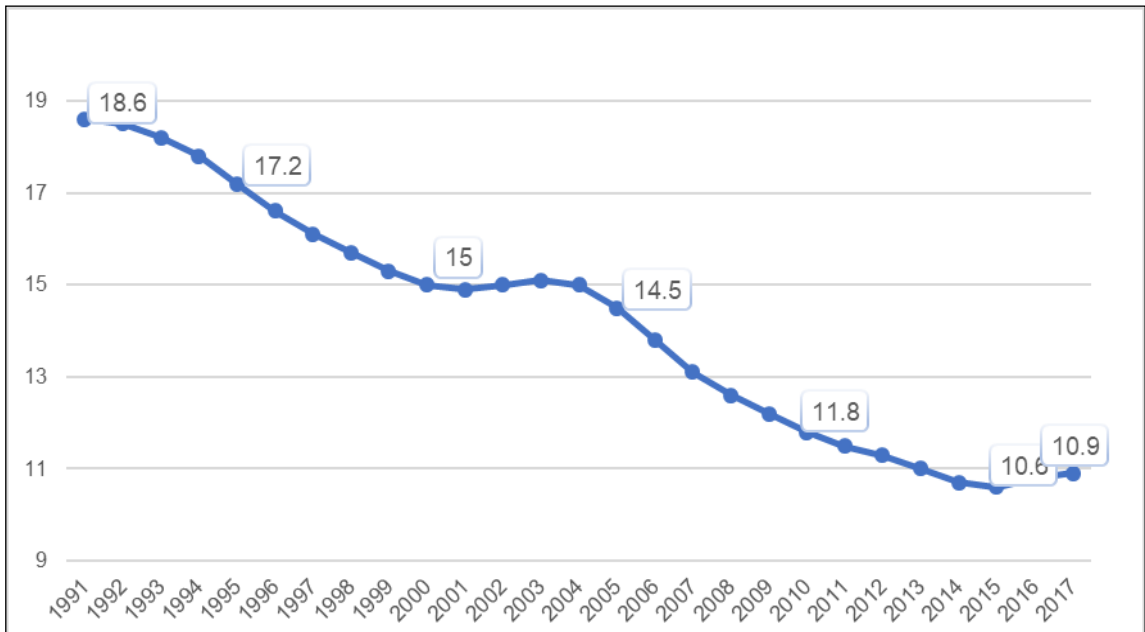
Food insecurity is simply measured by the number of undernourished people. The prevalence of undernourishment (PoU) is the indicator used by FAO to monitor food security globally and regionally. FAO collects country level food consumption data and makes estimations based on the proportions of population who have limited access for adequate nutrients. In order to complete the PoU data, The Food Insecurity Experience Scale (FIES) which is a well acclaimed eight question survey to assess household level access to food has

been used. Thanks to the developments in household surveys and national and regional macro statistics, quality of data and estimations has been improved.

In addition to number of undernourished people and PoU, there is also another indicator for measurement of food security. The Integrated Food Security Phase Classification (IPC) measures severity food insecurity. IPC aims to assist policy makers both for crisis management and long-term structural decision. Critical data including food consumption, nutritional status, dietary diversity, mortality and livelihood assets, have been analysed for the measurement. IPC makes distinction between chronic and transitory food insecurity. There are five different levels of chronic food insecurity; minimal, mild, moderate and severe. For transitory of acute food insecurity there are five phases which are minimal, stressed, crisis, emergency and famine. IPC also measures acute malnutrition levels as acceptable, alert, serious, critical and extreme critical (IPC, 2018).

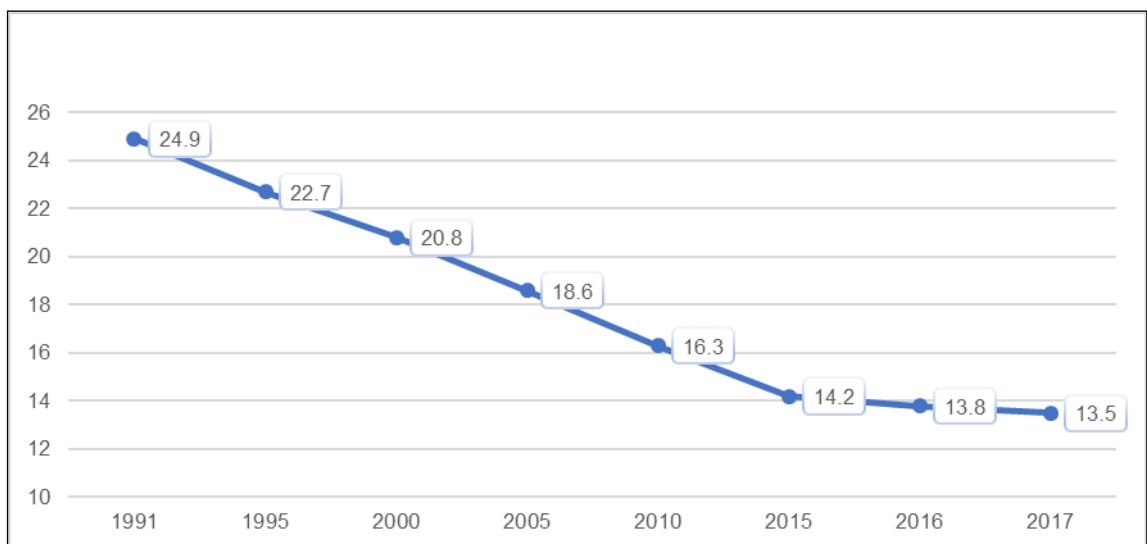
In 21st century the global community has agreed on two major documents which aim to provide basic humanitarian needs, including food security, to all. The first set of goals is named United Nations Millennium Development Goals (MDG) which is adopted by 191 UN states in Millennium Summit 2000. United Nations Millennium Declaration set eight development goals and each goal has its specific target. Goal 1 of MDG is “to eradicate extreme poverty and hunger” target 1.C. specifies the aim as “halve, between 1990 and 2015, the proportion of people who suffer from hunger” The target is assessed by two main indicators, the first (indicator 1.8) is; proportion of children under age five who are moderately or severely underweight and the second (indicator 1.9) is the number and proportion of undernourished people (UN, 2015). Data shows that both two sub targets are almost achieved by reducing prevalence of undernourished people from 18.6 per cent in 1990 to 10.6 per cent in 2015 (Figure 7) and prevalence of children under age five who are underweight from 24.9 per cent in 1990 to 14.2 per cent in 2015 (Figure 8). MDGs are seen the most successful global effort to reduce hunger and poverty.

Figure 7: Proportion of undernourished people to world population (%)



Source: FAO, 2018a.

Figure 8: Proportion of children under age 5 who are underweight to world population (%)

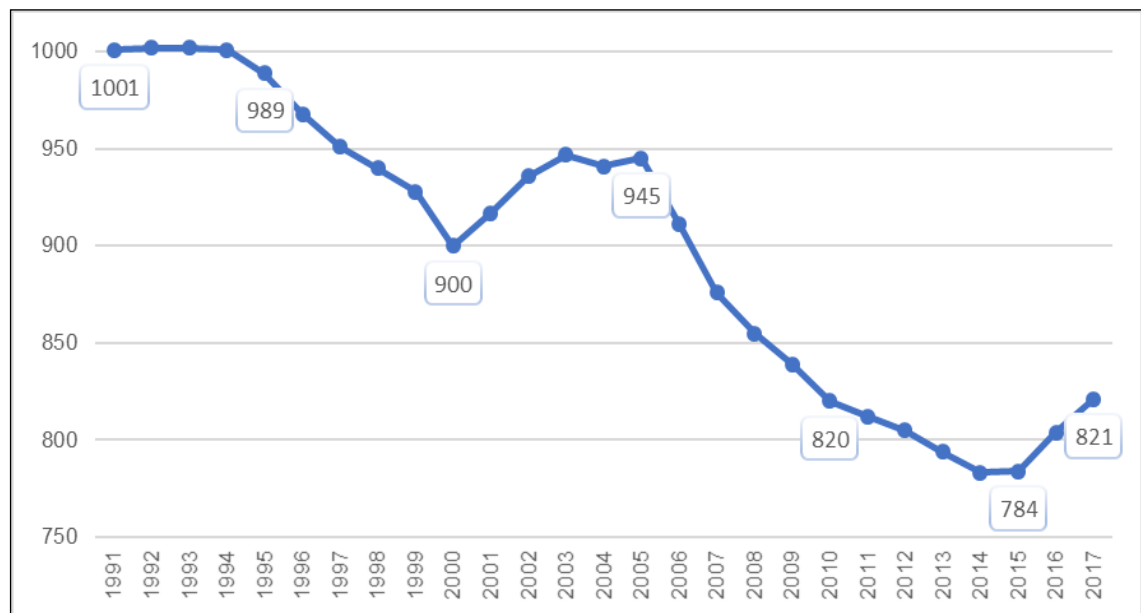


Source: FAO, 2018a.

In 2015, with this confidence boost, 193 members of UN declared another set of goals called Sustainable Development Goals (SDGs) which consists of 17

ambitious goals. Goal 2 of SDGs is “end hunger, achieve food security and improved nutrition and promote sustainable agriculture”. More specifically Target 2.1 says; “by 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round” (UN, nd.). Despite the achievement in MDGs, recent data shows that since 2015, number of undernourished people is on the rise reaching 820 million people and 10.9 per cent in 2017 (Figure 9). The increase more rapid in South America and Africa, the decreasing trend is slowed in Asia (FAO, 2018b).

Figure 9: Number of undernourished people in the world (Million)



Source: FAO, 2018a.

In terms of severity measurement of recent global food insecurity, according to 2016 data, Afghanistan, Ethiopia, Malawi, North Nigeria and Yemen are the top five countries where number of people who are affected by food insecurity is highest rate (Table 1).

Table 1: Countries with highest food insecure population in 2016

Countries	Population in Crisis, Emergency and Famine (Million people)	Population in Stressed situation (Million people)	Total food-insecure population (Million people)
North Nigeria	8.1	18.6	26.7
Yemen	14.1	8.2	22.3
Ethiopia	9.7	8	17.7
Sudan	4.4	12.1	16.5
South Africa	3.9	10.4	14.3

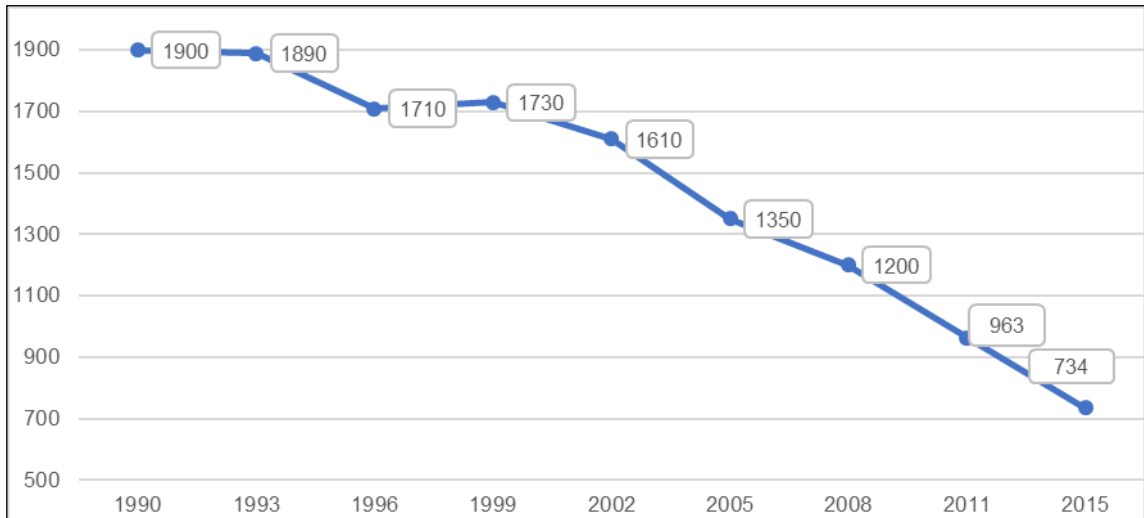
Source: FSIN, 2017.

2.2. DETERMINING FACTORS OF FOOD SECURITY

The concept of food security is a multi-dimensional phenomenon that involves all international and national actors and directly affects household. Thereby there are various factor that affects food security. Not all but significant contributing factors are stated below.

2.2.1. Poverty

As it was mentioned above poverty is the most important element that determines food security. It is strongly related with access dimension. It is more likely to see high food insecurity where poverty indicators are low as well. For this reason, reducing poverty is the Goal 1 of MDG and SDG. Target 1.A. of MDG specifies the target as; “halve, between 1990 and 2015, the proportion of people whose income is less than \$1.25 a day” (UN, 2015). Number of people living extreme poverty decreased 1.9 billion in 1990 to 734 million in 2015 (Figure 3.5). Reminding the decrease trend of number of undernourished people between 1990 and 2015, eliminating poverty and improving wealth distribution are outstanding issues for policy makers to provide food security.

Figure 10: Number of people living extreme poverty (Millions)

Source: World Bank, 2019

2.2.2. Population

Overall demand for food is directly related with population growth. FAO projects that, demand for food will be doubled from 2000 to 2050 due to population and economic growth (FAO, 2008b). The data also reveals that countries with the high fertility rates and rapid population growth, are where severe food insecurity exists. Sub-Saharan Africa has the highest population growth in the world and prevalence of undernourished people is 25 per cent. Even with a decline in growth rates, it is estimated that population will be doubled (FAO, 2010).

2.2.3. Agricultural Production

Production has seen as the primary and most effective force that can provide food security in 1970s. Although many more important contributing factors has added to the list throughout decades, agricultural production still has a crucial affect. In 1960s the Green Revolution has boosted production statistics simultaneity with accelerating population growth rates. However, 1972-74 food crisis proved the vulnerability of the food market and stock levels. Similar crises and regional emergencies have occurred several times since then. Agricultural production keeps increasing globally for five decades but decrease in the number undernourished people has not the same acceleration which proves the

defect in access and distribution. Tables 2 and 3 show the top five crops produced and live animal numbers for 2006 and 2016.

Table 2: Top five items produced in 2006 and 2016 (Thousand tonnes)

Crop	2006	2016
Sugar Cane	1.417.36	1.890.662
Maize	707.932	1.060.107
Wheat	614.538	749.46
Rice	640.706	740.961
Potatoes	297.111	376.827

Source: FAO, 2018a

Table 3: Top five live animals in 2006 and 2016 (Thousand heads)

Animal	2006	2016
Chicken	17.591.486	22.705.417
Cattle	1.382.836	1.474.888
Ducks	1.102.437	1.241.388
Sheep	1.098.662	1.173.354
Goats	840.371	1.002.810

Source: FAO, 2018a

2.2.4. Climate

Climate and weather are the main determinants of agriculture and climate change is already affecting agriculture and therefore food security. Climate is more crucial factor for the countries depends on rainfall or sensitive to extreme temperatures. El Niño event in 2015-2016 which caused severe droughts, highly affected the undernourishment levels. Climate changes and extremes does not only directly affect agricultural production and but also lives of individuals due to natural disasters. Natural disasters including, droughts, floods, storms and extreme heat has doubled since 1990 which affects access to food and utilization of millions (FAO, 2018b).

2.2.5. Armed Conflicts and Violence

Physical insecurity due to armed conflicts is another important contributing factor to food security in developing world. Food shortages is the main outcome of conflicts. Agricultural production generally comes to stopping point in conflicted areas. As most of the developing countries are food importers, trade limitations also contribute to food insecurity. Distribution of foreign food aid from international community is extremely difficult in problematic areas which usually ends up in severe food insecurity or famine (Jeanty & Hitzhusen, 2006).

2.2.6. Trade

Since the Second World War, global trade increased enormously. As the world food supply has also increased with the impact of Green Revolution, food became the major trade commodity. Countries which are not self-sufficient in terms of food but has enough resources to import food, balances food security. On the other hand, importer, developing countries with limited resources face serious food security problems. The relationship between trade, trade liberalization and food security is analysed in more detail below.

2.3. TRADE LIBERALIZATION AND FOOD SECURITY

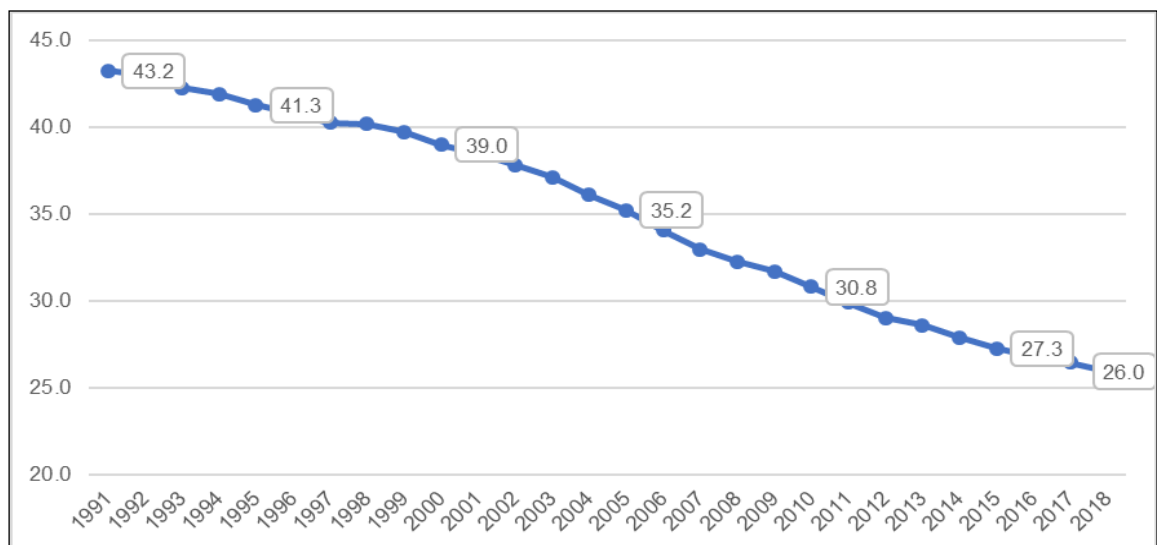
Due to the increase in world trade volume, since the 1980s, liberal economic policies have been rapidly spreading around the globe. Agricultural trade is also

under pressure to move forward towards more liberal environment (QUNO, 2014). There are arguments which advocate that trade liberalization positively affects food security. On the other hand, they receive strong criticism as well. The favouring arguments of trade liberalization also see the foreign agro investments as a tool for increase the supply and eventually increase the global food trade. Therefore, for it is critical to understand the key points of the relationship between trade liberalization and food security in order the assess the basis of foreign agro investments.

2.3.1. Current State of Global Agricultural Economy

In 2018, over one fourth of global workforce engages with agriculture. It is almost halved from 43 per cent in 1990 to 26 per cent in 2018 (Figure 11). Similar trend is seen in rural population. 45 per cent of world population lives in rural areas, which was 66 per cent in 1960. This proportion is up to 70 per cent in developing countries which most of the population are in some sort of agricultural activity (World Bank, 2019). These developing countries, at the same time, have high prevalence of food insecurity.

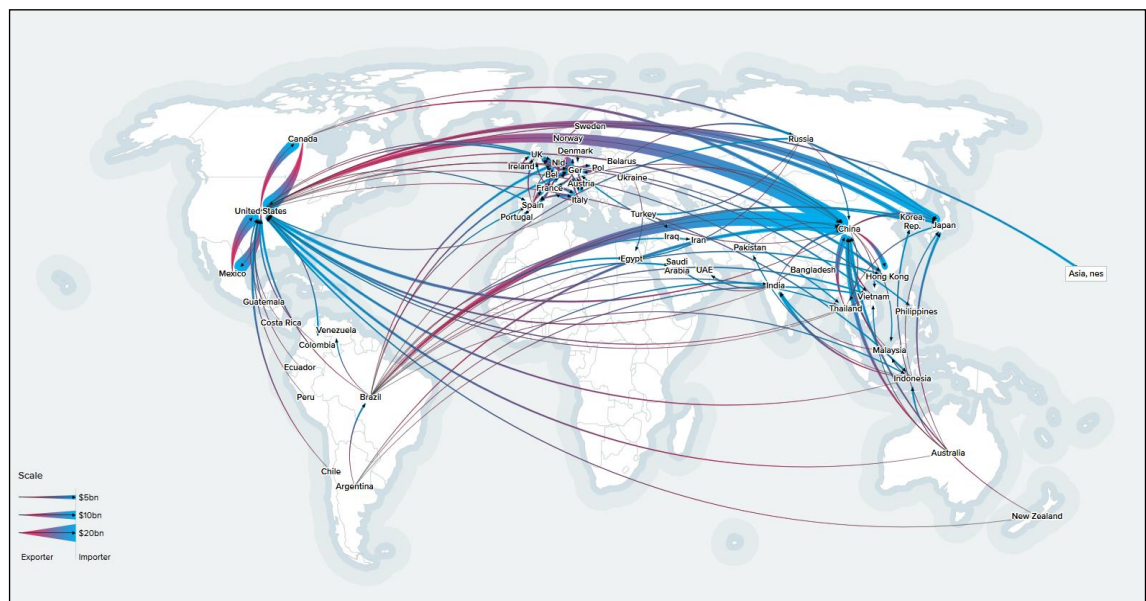
Figure 11: Global employment in agriculture (% of total employment)



Source: World Bank, 2019

Although most of the food produced and consumed locally, global agricultural trade has increased five times in five decades, reaching \$1.1 trillion in 2015 and the developed world is responsible for most of it (Figure 12 and Table 4). In terms of volume the most traded agricultural product is soy from Americas to China and in terms of calories the most traded crops are; wheat, soybean, maize, rice, oil crops, and sugar. Over 30 per cent of calories produced are turned into animal feed and it consists almost 10 per cent of global trade. Animal products consists only 5 per cent by volume but over a quarter by value. Soybean is another prominent crop that shapes the global trade. It is increased five times since 2000, with 10 per cent of overall agricultural trade in 2015 (Benton, 2017). With the enormous increase in volume, the system has also become more complex and interconnected multi-dimensionally.

Figure 12: Global agricultural trade traffic



Source: Benton, 2017

Table 4: Export and import of food in 2016 (Billion USD)

Countries	Export	Import
Americas	382	378
Europe	285	167
Asia	183	345
Oceania	43	13
Africa	34	60

Source: FAO, 2018a

2.3.2. Pro-Liberalization Argument

Pro-liberalization argument basically advocates that more open trade will bring efficiency to agricultural production which increases the supply and eventually food prices will be decreased. Therefore, availability of food and access to that food will be provided, which greatly contributes to food security (QUNO, 2014). The arguments stand on three main pillars.

The first is the theory of comparative advantage which is first stated by David Ricardo in 1817. The theory argues that production should be specialized to reach maximum efficiency and trade will turn these efficiency gains into welfare to all involved parties. The argument stated that if countries specialize on agricultural products of which they have relative advantages (climate and geographical conditions, workforce, etc.) and avoid from the ones that are costly in many terms, there will be adequate surplus which they can trade. With gains of the trade the existing deficiencies can be covered. When the comparative advantage principle is applied in a global scale, the optimum supply of food will be reached and makes more accessible to the population with lower income (QUNO, 2014).

The second pillar of pro-liberalization argument states that as the global agricultural production is more stable than regional and national level, liberal

trade enables importing food easily when the countries fall short on some products (World Bank 2012). Under the effects of climate change, the natural resources will be utilized efficiently with trade liberalization which makes the food trade as a moral obligation (Lamy 2013).

Finally, according to pro-liberalization arguments, protectionism in agricultural such as export restrictions and taxes and import tariffs, causes inefficiency in agricultural production and higher prices (World Bank, 2012). In addition, protectionism makes producers more vulnerable as it blocks to reach market opportunities and create thin markets where a few supplies dominate the market. It has seen as the main contributing factor to 2008 food crisis (Heady & Fan, 2008).

Not surprisingly, pro-liberalization argument has very similar points with favouring arguments of foreign agro investments that will be discussed in detail in the following chapter. But simply, foreign agro investments are perfect tools for increasing supply, promoting global food trade and therefore contributing food security.

2.3.3. Criticism

Agricultural market is under pressure for applying more liberal policies since 1980s. Although pro-liberalization arguments advocate that trade liberalization is the best way to provide food security in global scale, critics argue that trade liberalization harms producers and consumers in developing countries and provide advantages only for developed world.

As it is stated above comparative advantage theory argues that specialization in agricultural production and trade brings efficiency gains, while it assumes capital and labour are immobile. Critics strongly oppose this assumption by stating mobilization of capital and labour is one of the critical aspects of today's global markets (Schumacher 2013). In fact, the majority of global agricultural market are in the hands of multi-national corporations which resides in a couple of developed countries. Therefore, the efficiency gains that the theory suggests goes to developed countries rather than national or regional small farmers. On

the other hand, seasonal workforce is a necessary element of agricultural production both in global and national level. Considerable number of agricultural workers actually work for companies who owns the land and output (McMichael, 2013).

Comparative advantage theory assumes that labour and capital can be transferred from one industry to the other within an economy. In this way specialization on the advantageous industry can be achieved. The transfer costs are temporary and minimal. Critics, however, argue that these costs are highly failing both in economic and social way (QUNO, 2014). It is more likely to increase in unemployment where the capital moves into another industry (Fletcher, 2010). Even if there are employment opportunities, it is not guaranteed that the replaced jobs due to specialization are better or satisfying (Chang & Grabel, 2004).

Pro-liberalization argument and comparative advantage theory requires perfectly competitive market for efficiency gains provide wealth to all trading parties. However, there are only a handful of real competitive markets in the world and agriculture is not one of them. Economy theory suggest that competitive market exists where the first four companies control less than 40 per cent of the market (QUNO, 2014). However, in global level top four company account for 75-90 per cent of the world's grain market (Murphy et al., 2012). Similar dominance is seen in national level as well. In US, top four companies control the majority of the market by far in beef processing, broiler hen and pork market by 85, 50 and 46 per cent respectively (Lang & Heasman, 2004). For tropical commodities the situation is quite the same. Critics state that, without perfectly competitive markets, liberalisation of agricultural trade only makes poor countries more open to exploitation and seriously harm the small farmers as well as consumers (De Schutter, 2009).

Another point where the theory receives strong criticism is that it only accounts the direct costs which are incorporated with the food prices but ignores the external costs which have a huge impact on food security. Environmental costs are one of the significant external cost. Specialized single crop farming harms

the biodiversity that also makes long-term sustainable agriculture almost impossible. The use of chemical fertilizers to increase yields, heavy machinery and transportation which uses fossil fuels that increase the carbon emissions (QUNO, 2014).

One of the basis of comparative advantage theory is the assumption of all countries specialized in an industry and involved in trade will benefit from that trade. Critics are dubious about the efficiency gains that the theory suggests and even if there is some sort of gain, they believe all countries may not receive benefit equally. In the real world some countries which are usually developed and rich, may gain while others, usually poor and underdeveloped, may lose (QUNO, 2014). According to projections, gains from trade liberalization in agriculture will be around \$75 billion in total where only \$9 billion falls to share of developing countries (Anderson et. al., 2005).

CHAPTER 3

FOREIGN AGRO INVESTMENTS

the concept of foreign agro investments is the main theme of the study. This chapter aims explaining and analysing the concept in detail. In order reach this aim, first background information and present situation of foreign agro investments are presented. As the investor and the host state are two main actors of the concept, it is critical to understand their characteristics. For this purpose, following section covers the profiles and motives of investors and host states. It is obvious that the host state is the primary party that exposed the impacts of foreign agro investments more than any other party. Accordingly, the factors determining the impacts of foreign agro investments to host states are also discussed. Finally, main points of the criticism to foreign agro investments are underlined to expose the existing and potential setbacks of the concept.

3.1. THE CONCEPT AND BACKGROUND

It is estimated that world population will be 9 billion by 2050, in other terms, world must feed almost 1.5 billion more people than today. Taking the recent poverty and hunger levels into consideration, serious measures are needed to be taken in order to face the food challenge in coming decades. The projected population growth will occur mostly in the countries where hunger and poverty levels are already high. Thereby the challenge is more complex and critical. These are the countries where almost no investment has been made in agricultural infrastructure and smallholder farms for decades, resulting inefficiency and low production. Between 1980 and 2004, Africa has the lowest agricultural output per farm worker in the world by growing by less than one per cent annually, compared with over three percent in East Asia and Middle East (The Economist, 2009).

It is believed that the key to meet the growing demand of food is to invest in agriculture in these developing countries. Investments must create extensive crop and livestock production while protecting sustainability. According to FAO, agriculture investment is the most effective strategy to reduce poverty in rural areas. It is also essential to fight with hunger in all dimensions of food security

(FAO, 2012). Projections display that the amount of annual agricultural investment needed to increase food security and feed the world is \$83 billion (Schmidhuber et. al., 2009). There are three different sides which are expected to make this remarkable amount of necessary investment; public spending, private investments and international aid. Although the public spending might be thought to be the driving force behind the agricultural investments, the reality is the opposite. In developing countries, the share of public spending in agricultural investment is approximately seven per cent and it is even lower in Africa. International aid is regarded as an emergency measure in terms of direct food assistance and the development aid that is going to agriculture is only five per cent (Hallam, 2009b), that eliminates the international aid from being an option for agricultural development. Private sector is the prominent actor for agricultural investment. Farmers are by far the largest investors in agriculture (Lowder & Carisma, 2011). However, due to limited capacity, the private sector is highly neglected by financial institutions in developing countries. Commercial bank lending to agriculture is less than 10 percent in sub-Saharan Africa, and the loans are generally very small and not adequate for capital formation (Da Silva & Mhlanga, 2009). This being the case, foreign direct investment on agriculture is a rising phenomenon to meet the necessary investment in developing countries.

On the other hand, growing population, increased incomes and consequently increase in diet, limited agricultural resources such as land and water and the effects of climate change compel the countries to prioritize and revise their food security strategy. Especially 2008 food price spike provoked concerns of the countries who are not self-sufficient and dependent on agricultural import. In order not to be affected by volatile food prices and policy induced supply shocks, foreign agro investments becomes an outstanding alternative where the national food production is not adequate (Hallam, 2009b).

Investing in foreign land for agricultural production is not a new concept. Apart from mass control and exploitation of the colonial states by European powers, the post-colonial era also witnessed the use of land by foreigners. The

expression of banana republic comes from dictatorships in Africa and South America of which economies depend on foreign owned fruit plantations. In 1940s Britain tries to convert mass land in Tanzania into peanut lands. After the end of Cold War and collapse of Soviet Union, international investors rushed into former state owned and collective farms (The Economist, 2009). Foreign agro investments in 21st century, however, displays different aspects. This chapter aims to analyse the concept in detail.

3.2. PRESENT SITUATION AND RECENT TRENDS

As it is mentioned above foreign investment in developing countries land for agriculture is not a new but a rising phenomenon. The available data displays that there is a remarkable increase in foreign agro investment in developing countries since 2008. The investment reached the peak in 2009 and since then they are higher than before 2008 period. The share of agro investments among all foreign direct investments (FDI) doubled since 2000 but still only accounts for almost five per cent (FAO, 2014). Due to the nature of so called 'secrecy' or lack of transparency of the businesses the available data is limited to 44 countries. The data shows that FDI to the analysed countries more than doubled between since 2005. However, most of the investments flowed to upper-middle and high-income countries (Lowder & Carisma, 2011).

Agricultural investment has various aspects including; heavy infrastructure (irrigation, roads, etc.), machinery, research and development (seed productivity, fertilization, etc.), but most of the debates has focused on land as it is the primary aspect of agriculture. On the other hand, land has not only have an economic value but also has cultural, social, legal, environmental, ethical and religious impacts. Due to its significance, any large land acquisition or handover create multi-dimensional affect in national level. There are mainly two types of foreign investment in land; direct purchase and long-term leases. Long-term leases seem dominant as most of the national legislation does not allow foreigners to buy land. However, there is practically almost no difference between purchase and long-term lease as the period of the contracts can go up to 99 years (FAO, 2014).

The problem of data availability in foreign agro investments, exists even more in land acquisition. For instance, in Mozambique, media reports that over 10 million hectares of land has acquired between 2008 and 2010. However official records sat that the acquired land by foreigner is 2.7 million hectares between 2004 and 2009 (Cotula & Polack, 2012). Media resources often exaggerate the data, most probably, for drawing attention to the case. In order to avoid misinformation and to make reliable analysis, the partnership of Land Matrix has established with the participation on various international organization and including; CDE (Centre for Development and Environment at the University of Bern), CIRAD (the Centre de coopération Internationale en Recherche Agronomique pour le Développement), GIGA (the German Institute of Global and Area Studies), GIZ (the German Agency for International Cooperation) and ILC (the International Land Coalition). The aim of the partnership is to collect, compare and cross-check the large land acquisition data. According to the Land Matrix, the reported land deals in developing countries in 2009 is 83 million hectares. However, when the data is cross-checked the amounts is decreased by almost two thirds to 32.7 million hectares. Although the real size of foreign agro investments in land is smaller than what the media reports, the available data displays that it is still remarkable (FAO, 2014).

Another non-negligible data in regard with the agricultural land acquisition is the amount of land that has been acquired by domestic investors or so-called national elites. The available data states although the land size is smaller than foreign investors, domestic investors are responsible for 60 to 80 per cent of total land transactions. According to Burnod, the precise ratios of the land acquired by nationals as follows; 97 per cent in Nigeria, 70 per cent in Cambodia, 53 per cent in Mozambique and around 50 percent in Sudan and Ethiopia. Nonetheless, due to the strict land legislation in some countries, foreign investors use the domestic investors as a gate to reach to the desired agricultural assets (Burnod et. al., 2011). Besides, partnerships are also another useful tool for foreign investors to overcome the local procedures.

Africa is the most popular destination for foreign agricultural in land by far. According data presented by the Land Matrix in 2012, 56 million hectares of land were subjected to agreements in Africa, which consists almost 5 per cent of total agricultural area. Most of the deals are realized in seven countries which are; Sudan, Ethiopia, Mozambique, Tanzania, Madagascar, Zambia and Congo. In Asia 18 million hectares of land deals were reported by the Land Matrix. The South-Asian countries; Philippines, Indonesia and Laos are the top of the list. Latin America is following Africa and Asia with the 7 million hectares of land which were somehow transferred to foreign investors (Anseeuw et al., 2012). China and gulf countries are forerunners of foreign agricultural investment on land. Southeast Asia, Mozambique, Zambia and Angola has been favoured by China whereas Sudan and OIC (Organization of Islamic Cooperation) countries for Gulf (Von Braun & Meinzen-Dick, 2009).

3.3. MOTIVES AND PROFILES OF INVESTORS

Before 2000s, the primary focus of foreign direct investment in agricultural industry was to have better access to the markets and cheaper work force in developing countries. However, because of the major shifts in world food and agricultural market and rising significance of food security both in national and international politics, the focus and the form of foreign agro investments has also changed. Now the main aim became to reach and control the natural resources namely land and water (FAO, 2014). Similarly, the cultivated crops have also changed. Before 2000s generally the tropical crops which are native to the region were cultivated in order to export to all over the world. However, studies and data show that more than 80 per cent of the crops that are cultivated by foreign investors, consist of basic crops such as; corn, wheat and feed grains. Moreover, in contrast with the previous strategy of exporting the products to the rest of the world, now the majority of the products are exported to investor countries (Hallam, 2011).

3.3.1. Motives

As it is mentioned briefly above, foreign agricultural investment is not a new concept, and has been practised in various ways through centuries. Since late

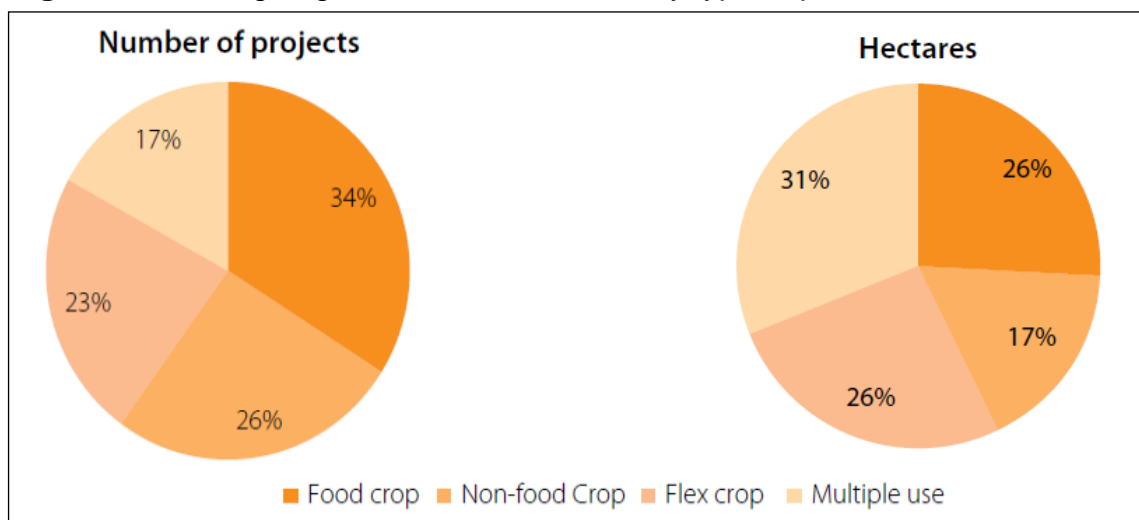
2000s foreign investment focused on agricultural production has remarkably increased and shaped into a new and modernized form. The main motive or driver for foreign agro investments is simply to provide food security to homeland against unexpected spikes in food prices and shortages in supply. Countries which are heavily dependent on imports, are seeking a secure port for protecting themselves from the huge waves and sometimes tsunamis of the world food market which is dominated by a handful of actors. To control the agricultural production and exporting the necessary amount to homeland, is a strong alternative strategy to provide food security. Studies displayed that 42 per cent of the projects are export-oriented and 43 per cent of these projects aimed to produce food crops that proves the main motive of foreign agro investments is food security (Anseeuw et al., 2012). On the same protectionist line, some countries, instead of consuming its own natural resources, would like to benefit from resources of the host country, especially land, water and workforce, which are generally unused or underused in developing countries.

Increasing energy prices has created many other alternatives to fossil fuels and biofuel is one of the prominent ones. Producing raw materials for biofuel production is another driver for foreign agro investments. Moreover, industrial plants such as; rubber and fibre, consist remarkable amount of cultivated land. Figure 13 shows the distribution of crop types that are cultivated under the foreign agro investments. There are mainly four different types of crops food crops, non-food crops, which refers to biofuel raw material or any other industrial crop, flex crops, which refers to the crops that can be used both for food biofuel and industrial purposes, and multiple use, which refers to projects or deals that has more than one objective (Borras et al., 2011). As the data presents, in comparison with the number of projects, the main aim of foreign agro investments is production of food crops and it is followed by production of non-food crops and mainly biofuel raw materials. *Jatropha*, of which oil is used as biofuel for diesel engines consist 73 per cent of non-food crops covering more than 5 million hectares of agricultural land. It appears that more land is allocated to non-food crops than food crops, clearly underlines the importance of biofuel production. Flex crops such as soybean, sugarcane and oil palm,

have been already produced all over the world in mass agricultural land. Increasing demand for these crops and relatively short return of investment period attract foreign investors. (Anseeuw et al., 2012).

Price spikes in food prices did not only disturb the countries which concern about food security but also create a huge opportunity window of multinational corporations. Since it is clear that there will be accelerated demand for food in coming decades but on the other hand, supply seems limited so far. As a significant commercial commodity, it is very likely that agricultural production can turn into a very profitable business if it is played well. Thus, it appears another motive and also creates another type of player for foreign agro investments.

Figure 13: Foreign agro investments in land by type of production

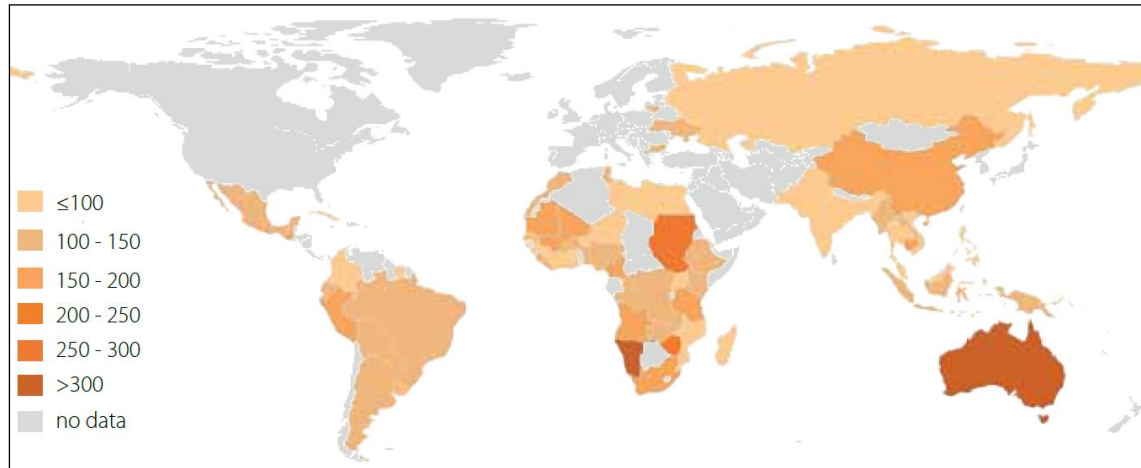


Source: Anseeuw et al., 2012

Water scarcity has been a problematic issue in both national and international for many years and it is expected to accelerate in coming decades. As it is one of the primary inputs of agricultural production, to get benefit from water resources of developing countries is a sort of side motive for investors. Studies showed that water consumption is increased most of the host countries, it is estimated that there is 13 per cent increase in average (Anseeuw et al., 2012). Figure 14 shows the water consumption by hectare agricultural purpose. To conclude, the motives behind the foreign agro investments in land is not only

about the food security nor volatility in the food market but combination of many other determinants as well.

Figure 14: Water consumption per hectare for agricultural production



Source: Anseeuw et al., 2012

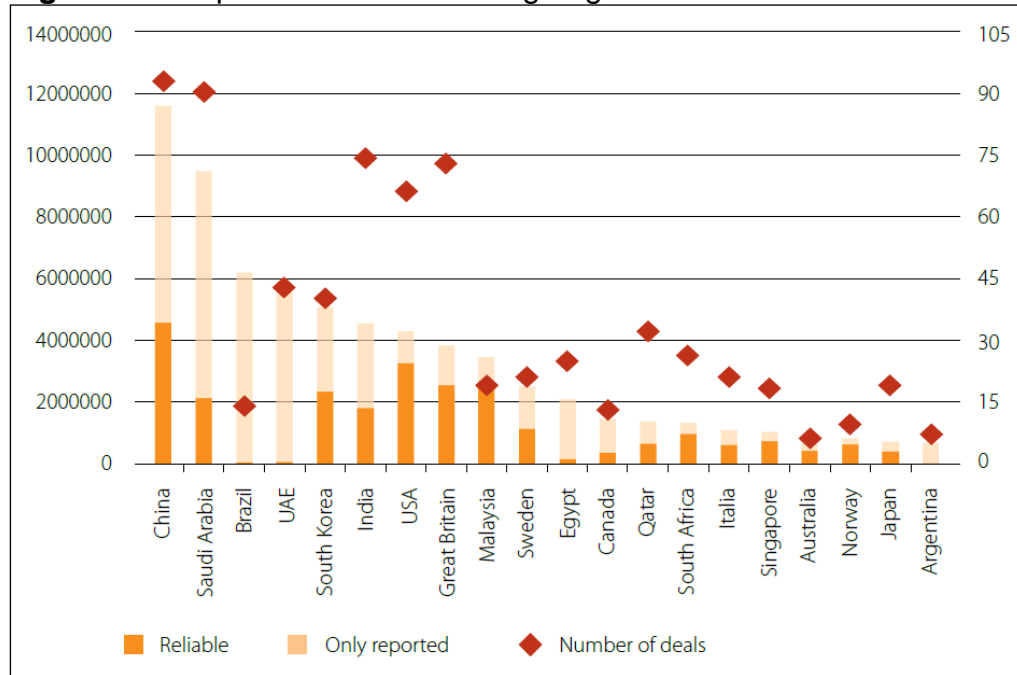
3.3.2. Profiles

Countries which make remarkable foreign agro investments are net importers food and have at least 4 times of GDP then the host countries (Anseeuw et al., 2012). When the investor types are analysed, there appears mainly four types of investors; public investors which are; governments, sovereign wealth funds and other state entities, private investors are; agricultural companies, energy companies, investment funds (includes pension funds and hedge funds) and public-private partnerships. Investors are also categories in three by region as; cash rich emerging economies of East Asia and South America, Gulf countries and countries from North America and Europe. Figure 15 shows the top 20 countries in foreign agro investments both in size of the land and number of deals.

The forerunner of foreign agro investors are BRICS, except Russia and some other emerging economies of Asia. China, Brazil, South Korea and India are the most prominent ones with 11,6 million, 6,2 million, 5,1 million and 4,5 million hectares of land respectively. Some of the investor countries are also host countries as well. According to data displayed by Land Matrix, 32 per cent of

land deals coming from the same region, in Asia this ratio increases to 57 per cent. South to South relations, lower transportation costs and cultural similarities might be the reasons of this trend. The main motive China and South Korea for investment seems to be food security. Most of their projects focus on food production (Anseeuw et al., 2012).

Figure 15: Top 20 countries in foreign agro investments



Source: Anseeuw et al., 2012

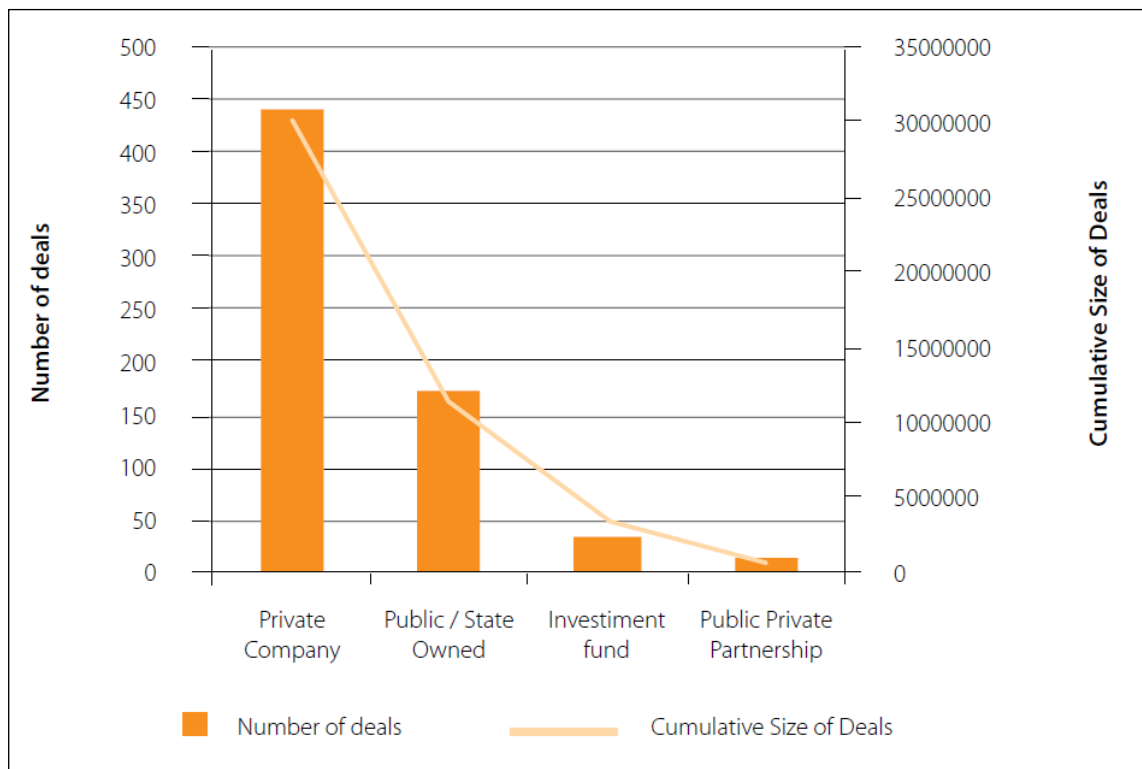
Saudi Arabia (SA) and United Arab Emirates (UAE) are the top Gulf countries in foreign agro investment, followed by Qatar. SA and UAE is also among the top 5 in overall. The favourite region of Gulf countries is Africa, the South Asian countries which there is cultural and religious closeness. Similar to China and South Korea, demand for food is the primary motive of Gulf countries as 66 per cent of the projects are for food production (Anseeuw et al., 2012).

USA and UK are the most active players from global north. European companies account for almost 40 per cent of foreign agro investments in land in Africa, whereas North American companies account for 13 per cent. On the other hand, investment, hedge and pension funds which are largely from North America and Europe, which mostly focus on biofuel production. (Schoneveld,

2011). Studies show that investors from the global north have tendency to choose countries which they have connection from colonial era (Arezki et. al., 2011)

Private investors lead the way in foreign agro investments (Figure 16). Majority of private investors are large holdings and multi-national corporations, rather than agricultural companies. However private investors are generally backed up both financially and politically by governments making the separation and analysis of public sector involvement difficult (Hallam, 2009a). Investors from global north mostly consist of private companies. On the contrary governments and state-owned entities are the main actors for Gulf countries. Private companies from Netherlands and UK are the major player for biofuel production (namely jatropha) and South Korean comes third. In regard with flex crop production, 87 per cent of the projects are executed by private companies as well (Anseeuw et al., 2012).

Figure 16: Foreign agro investments by investor type



Source: Anseeuw et al., 2012

3.4. MOTIVES AND PROFILES OF HOST STATES

Even though there are some exceptions, developing countries are the main target of foreign agro investment by means of both land and number of projects. From an international political economy point of view, attracting foreign direct investment to the country is one of the main economic strategy of developing countries. Agricultural investment is no exception for this strategy.

3.4.1. Motives

The motives of states to host foreign agro investments do not seem to be complex as investors. As it was discussed earlier efficiency of agricultural production is low in developing countries due to various reasons. The investment that is needed to increase efficiency is beyond the national capacity most of the times. Therefore, main motive of the host state is increase agricultural production and get benefit from the surplus either by improving domestic market or by export earnings.

First of all, the host countries are eager to open the agricultural land that is unutilised to investors. However, in some cases it is reported that lands which are used by local farmers are transferred to foreign investors as well, since the investors are also interested in fertile land depends on the crop they would like to produce. As the agricultural land is getting scarce all over the world by the time passes, getting benefit from the unused land stands as the main motive for the host states.

Profiles of the host states will be analysed in the following section, but in brief, almost all of them have high prevalence rate of undernourishment and malnourishment. Thus, one of the important motives of the host states is reducing hunger and improve food security by taking advantage of the efficiency gains and surplus from the cultivated lands. However, abundance of export-oriented projects makes this motive stays under a cloud

Agricultural is not just about land and soil. Depending on the crop and scale of the plantation, different types of infrastructure is requires to production. Water is the second primary input after the land. As the world is rapidly going to into era

that water scarcity will become a major issue, significance of effective irrigation is increasing. However mass irrigation projects, including dams, irrigation ponds, canals, flumes and infield irrigation systems usually requires remarkable amount of capital, which local governments usually fail to bear. Irrigation is the most important but not the only infrastructure that mass agricultural production requires. Basic processing facilities, warehouses, administration and other production units are also needed. In some cases, the invested land is lack of any transportation infrastructure which is a must for export-oriented projects. When this is the case, the investors also construct roads, railways and even ports. Host states expect or sometimes demand from investors to bring these expensive infrastructures to their country which have long-lasting benefits are expected.

Although technology and research make agricultural production less dependent to human force, it is still one of the most important inputs, especially in developing countries. Host states which mostly have high unemployment rate and high rural population, expects foreign agro investments create new job opportunities not only in plantations but also infrastructure works and other side industries such as transportation.

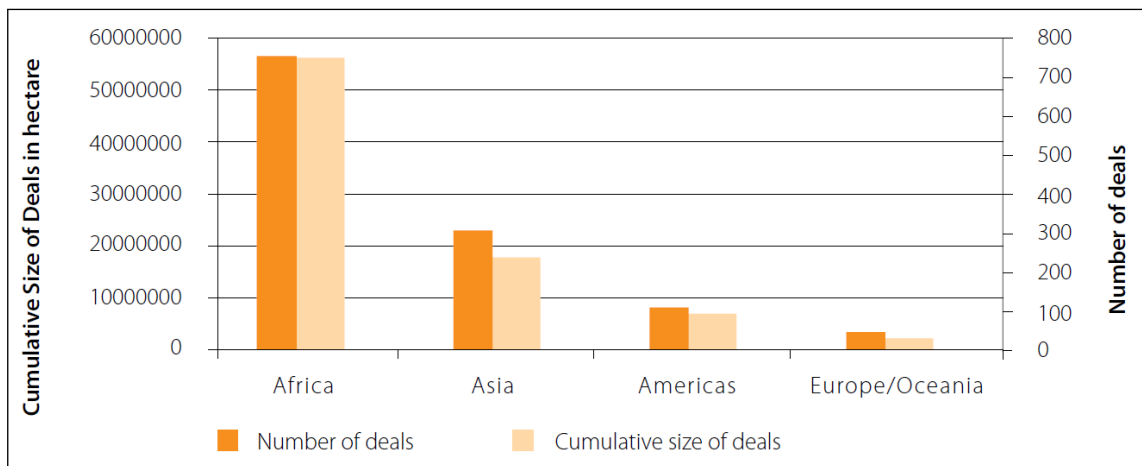
The inefficiency of agricultural production in developing countries does not only derive from infrastructure problems or unutilised land but also lack of adequate agricultural technics and technology. As foreign agro investments interested in mass agriculture with millions of hectares of land being cultivates, the latest knowledge and technology is essential for effective production. This agricultural knowledge includes; high-yield seeds, fertilizers, machinery and technics based on research and development processes. Host states are looking forward to embracing the latest agricultural knowledge and technology from investors which takes years of work and capital to achieve.

3.4.2. Profiles

With the recent rising trend, the Land Matrix calculated that there are 84 countries which are targeted by foreign agro investment. Although the number of countries seems a lot, consisting almost half of the world, it is also calculated

that 70 per cent of the foreign agro investments concentrated only in 11 countries of which seven are in Africa (Sudan, Ethiopia, Mozambique, Tanzania, Madagascar, Zambia and Congo and four in South-Asia (Philippines, Indonesia and Laos). Figure 17 displays the distribution of foreign agro investments by continent and Figure 18 shows the top 20 popular host countries.

Figure 17: Distribution of foreign agro investment by continent



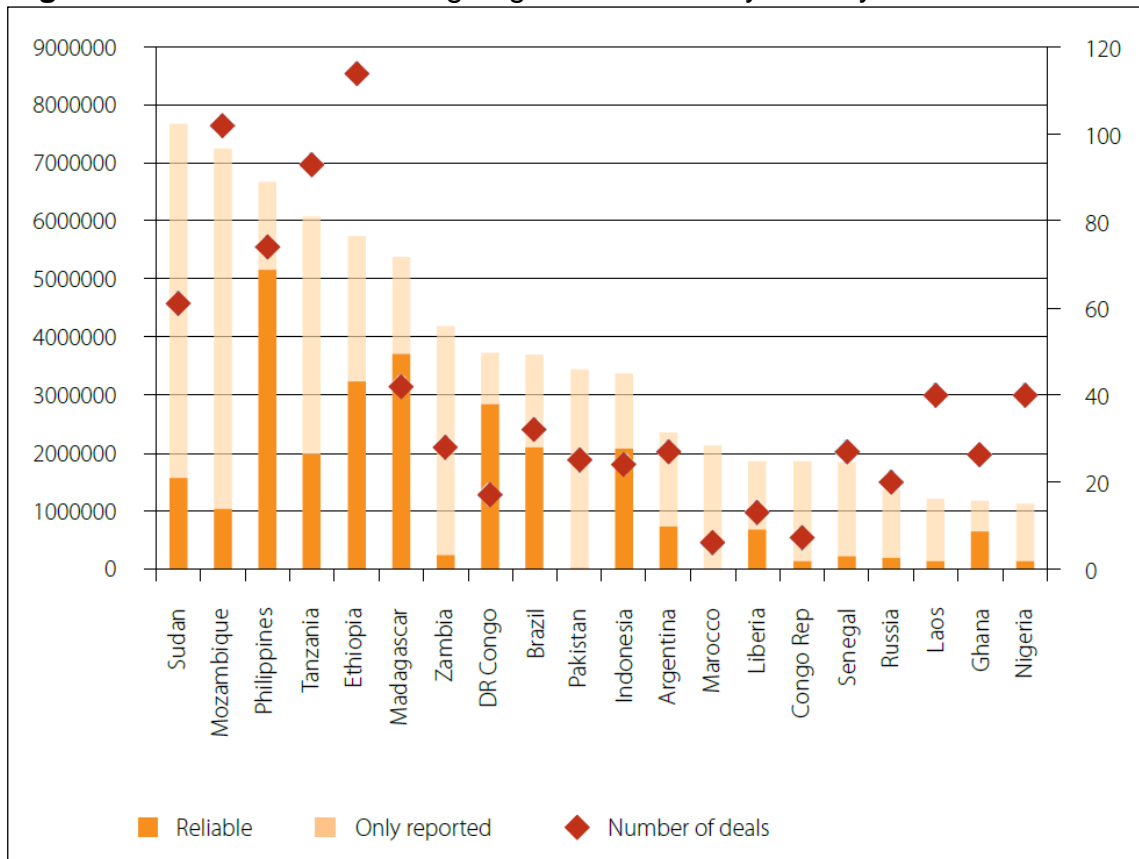
Source: Anseeuw et al., 2012

As it was mentioned above, it is very clear that Africa is the popular destination of foreign agro investments by far, as it is estimated that only 25 per cent of the continent's arable land is currently cultivated. The total amount of land that is subjected to foreign agro investments (56 million hectares) is equal to almost 5 per cent of Africa's total territory or the size of Kenya. In other continents this ratio does not exceed 1 per cent. When the foreign agro investments are analysed by region, Eastern Africa stand for the first place with 45 per cent of the deals have been realized in the region. South-East Asia and Western Africa come next (Figure 19), while Central Africa is mainly targeted for oil palm plantations.

Africa is followed by Asia as most targeted foreign agro investments. Philippines, Indonesia, Laos are the most popular countries with 5,2 million, 1,3 million and 140 thousand hectares respectively. Although Cambodia is not the

list of top 20 host countries, it is reported that 400 thousand hectares of land deal was executed. Almost all of the rubber production projects gathered in South-East Asian countries. Oil palm production is also widespread in the continent (Anseeuw et al., 2012).

Figure 18: Distribution of foreign agro investment by country



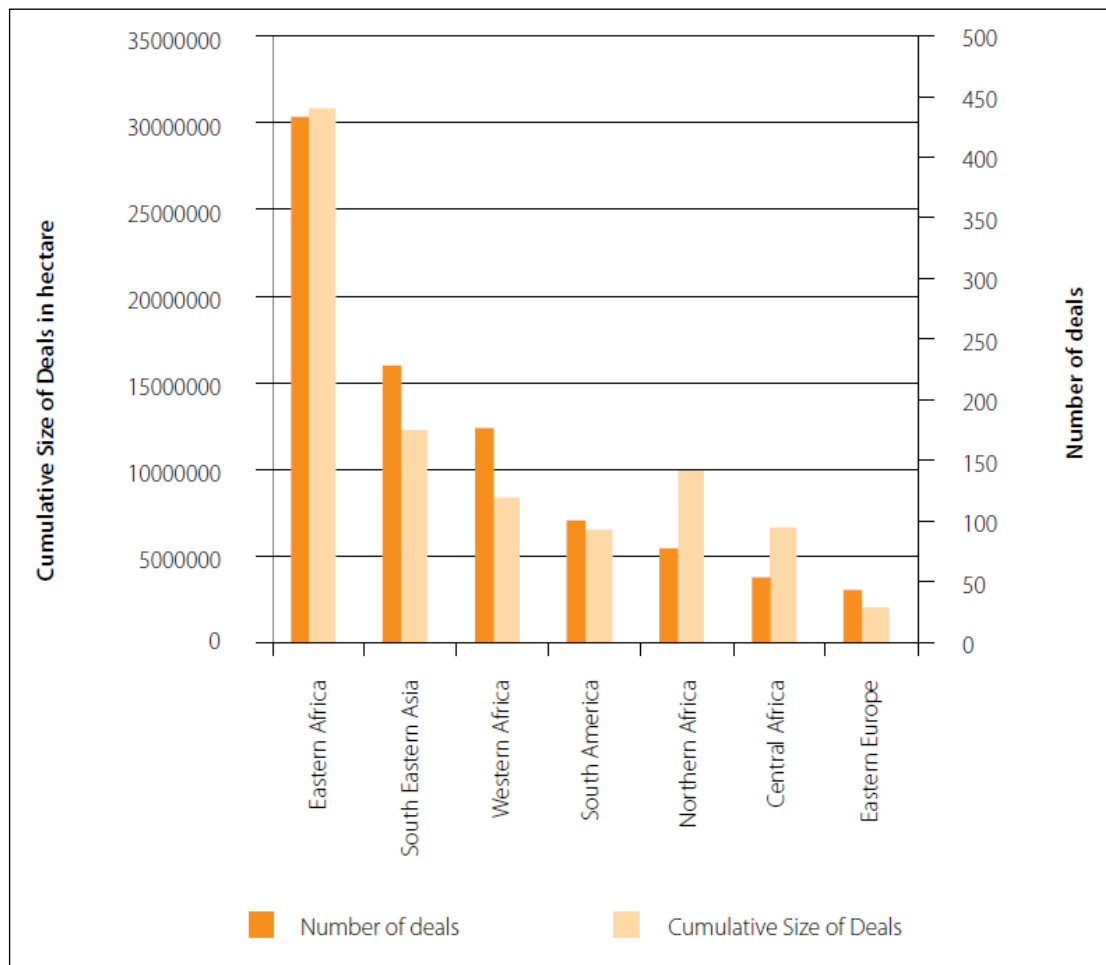
Source: Anseeuw et al., 2012

Latin American countries are third on the list of popular foreign agro investments. The land deals reached to 2,1 million hectares in Brazil and 1 million hectares Argentina where domestic investors are the main actors for facilitating foreign investments (Collier & Venables, 2011). Russia and Ukraine are two countries which are out of Africa, Asia and Latin America but targeted by foreign agro investments. Because the soil is one of the most fertile in all over the world, these destinations are mainly chosen for cereal production (Cochet & Merlet, 2011).

Although there are many differences among host countries due to the parameters such as region, investor, climate, etc. there are also common

features which most of them have. First of all, foreign agro investments are seen in countries which has dense population in order to access the required workforce for projects. The average population is 63,6 million, as the data includes countries with high population like Brazil, Indonesia, Pakistan and Russia. The average population of 10 most targeted countries is 38,4 million (Table 5).

Figure 19: Distribution of foreign agro investment by region



Source: Anseeuw et al., 2012

The average GDP per capita for host countries is approximately US\$ 4.500, however the most affected countries GDP is below US\$ 1.700 which is almost one third of average. This data proves the fact that the foreign investors prefers the poorer countries (Table 5).

Another common feature of the host countries is; all of them are net food importers. Although import and export values are close to each other for average, when the most affected countries are analysed the gap is almost doubled (Table 5).

Apart from common socio-economic features of the host states, there are also similarities in institutional variables which directly affect foreign agro investments. According to governance data which includes, regularity quality, voice accountability, political stability, government effectiveness, rule of law and control of corruption rank, the most targeted countries are significantly weaker than average (Table 6). Investors have tendency to target countries with low land tenure security to run business and access to land relatively easily (Arezki et. al., 2011).

Table 5: Socio-economic indicators of host countries

	Host country average (84)	Most targeted host countries (10)
Population (million)	63,6	38,4
GDP per capita (2010, US\$ millions, 2005 PPP)	4.404	1.649
Food imports (2009, US\$ millions)	42.036	11.088
Food exports (2009, US\$ millions)	45.021	7.43

Source: Anseeuw et al., 2012

Agricultural and ecological features of the host states are also critical for foreign agro investors while making choice on where to invest. Studies showed that there are two significant indicator which affects preferences of investors; yield gap and land availability. Yield gap simply refers to difference between current yield of a selected region and potential yield when suitable production measures are taken. Yield gap calculation is based on five major crops which are; wheat, oil palm, sugarcane, soybean, and maize. The second indicator, land availability refers to available uncultivated land which is suitable for agricultural production of above-mentioned crops (Arezki et. al., 2011).

Table 6: Institutional variables of host countries

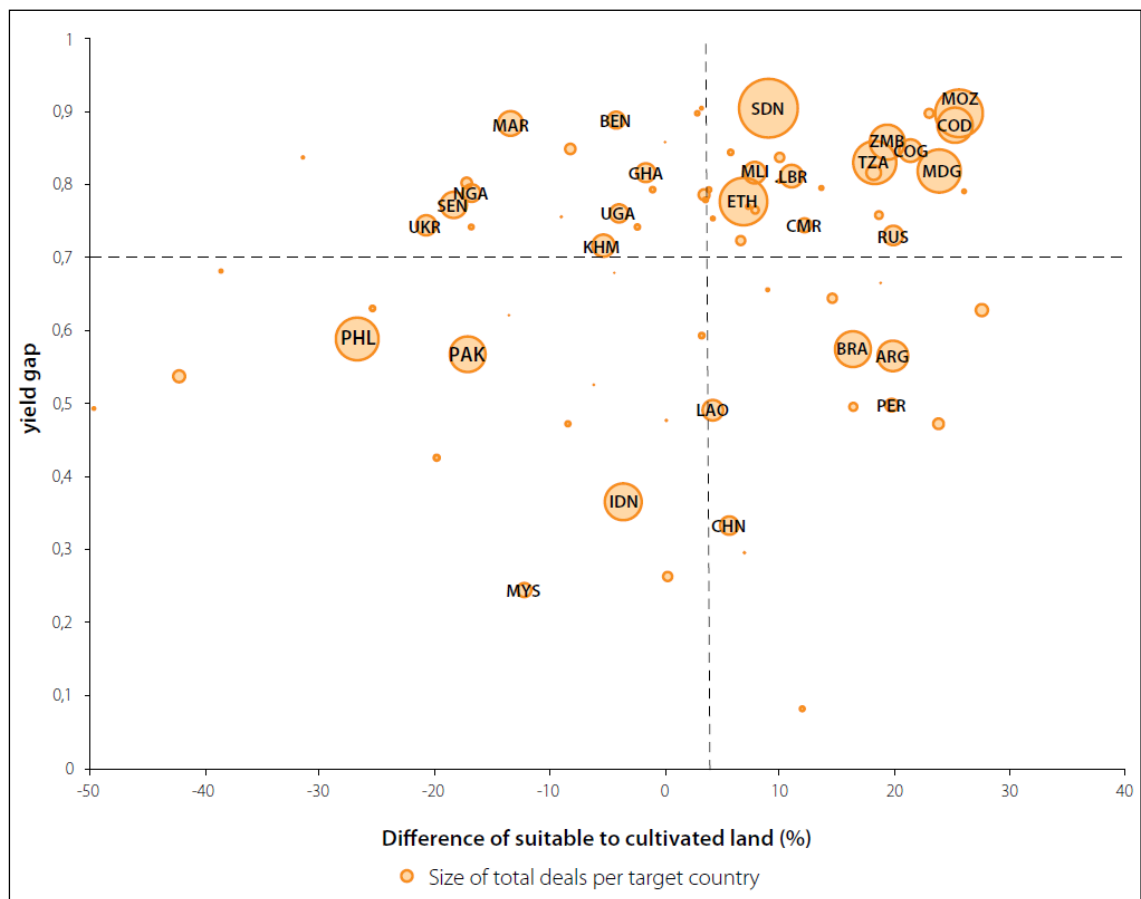
	Host country average (84)	Most targeted host countries (10)
Regulatory Quality Rank (%)	36,50	28,66
Voice Accountability Rank (%)	35,63	31,23
Political Stability Rank (%)	31,76	28,91
Government Effectiveness Rank (%)	35,77	28,42
Rule of Law Rank (%)	33,25	27,96
Control of Corruption Rank (%)	33,83	31,76
Investor Protection Rank (%)	5,03	4,56
Land tenure security Rank (%)	2,29	1,87

Source: Anseeuw et al., 2012

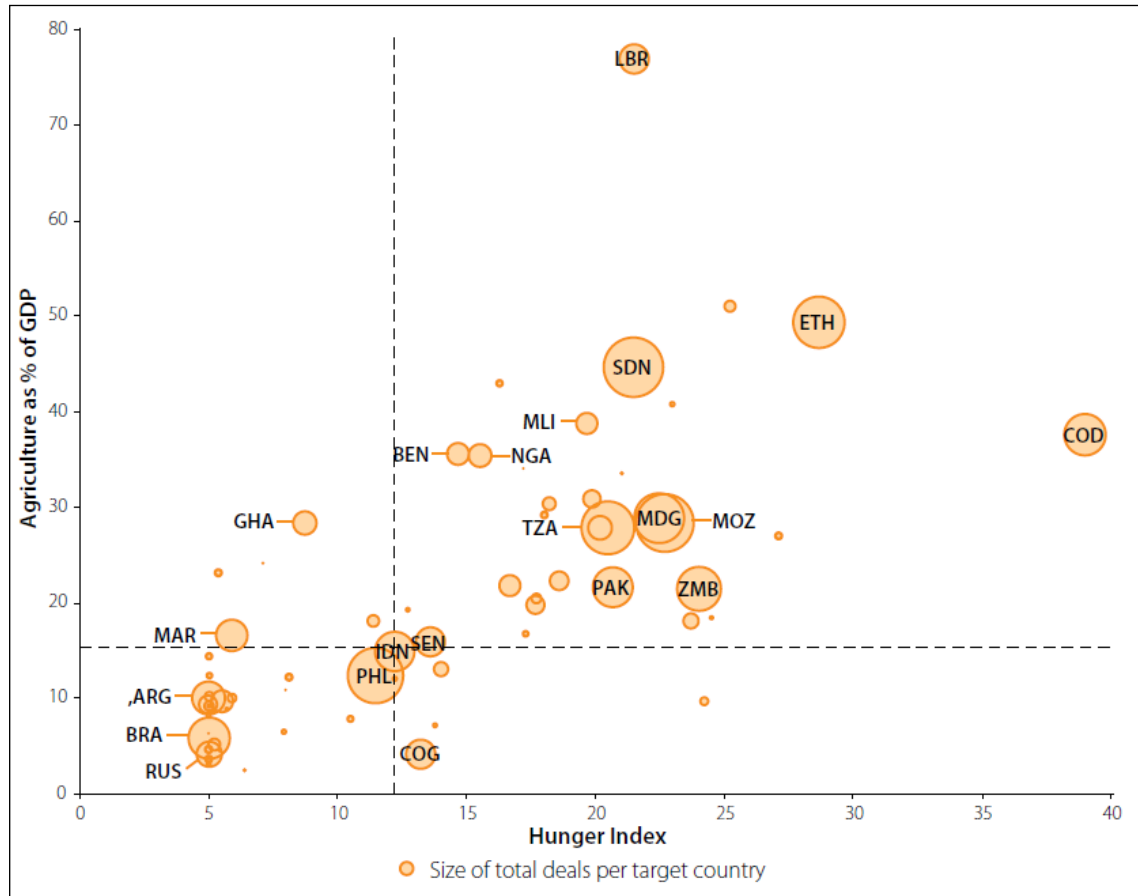
According to these two indicators, Deininger and Byerlee divide the host states into four groups (Figure 20). The first group consists of states where there is high yield gap and high land availability. Naturally, foreign agro investments are mostly seen in this group of host state. 58 per cent of deals are report within this group and the majority of the states are from Africa. The second group of host states have lesser available land but high yield gap. 13 per cent of investments fall into this category. West African states, Ukraine, Cambodia and Morocco are the leading states. The third group of host states have small numbers of suitable land with a low yield gap. The majority of this group is from South-East Asia, namely, Philippines, Indonesia and Pakistan. Although the conditions are the least favourable compared to other groups, there are particular regions in these states where high profit, specific crops can be cultivated. That is why 17 per cent of foreign agro investment occurs in the host states which belong to this group. The final group consists of states where there is available land but low yield gap. Brazil and Argentina are two major host states which attracts investors. These host states have large land reserves and 12 per cent of land deals fall into this group (Deininger & Byerlee, 2012).

Undernutrition rate and agricultural share of GDP are another two significant features of host states. As it is stated above host states are significantly poorer than investors. Therefore, there are high probability that host states have high hunger rates than investors states. In addition, agricultural shares of GDP is higher where hunger rates are high. The analysed data reveals two main groups of host states (Figure 21). The first group consist of states where undernutrition rate and agricultural share of GDP are above average. The majority of foreign agro investments occurs in states which fall into this group with 66 per cent. The second group of states have below average rates of hunger and below average agricultural share of GDP. This group of states host 22 per cent of investments (Anseeuw et al., 2012).

Figure 20: Yield gap and land availability of the host states



Source: Anseeuw et al., 2012

Figure 21: Hunger index and agricultural share of GDP of the host states

Source: Anseeuw et al., 2012

3.5. FACTORS DETERMINING THE IMPACTS OF FOREIGN AGRO INVESTMENTS ON HOST STATES

Impacts of foreign agro investments on host states is the most debatable issue of the concept. There are various factors that determine these impacts. This section aims to underline the most important ones (FAO, 2014).

3.5.1. Governance and Rule of Law

Governance quality and the structure of government institutions of the host country may be the most important factor that shapes the impacts of foreign agro investments. Good governance simply refers to what extent the host country is governed by rule of law. Property rights, land tenure system, laws and regulation regarding to agriculture, water, natural resources, investment

protection is key for foreign agro investments as well as the political stability, transparency absence of conflicts and corruption.

The analysis of local conditions of the targeted state and the region is significant for agricultural investments. Existing infrastructure such as transportation, irrigation, cleared land, educated or qualified workforce is very attractive to foreign investors. Organizational capacity of local communities, especially farmer organization, increase the probability of positive impacts of the project. Involvement of potentially affected local parties, both in negotiation and realization process may be the second key factor that affects success of foreign agro investments. As much as the involvement expands to the all stakeholders, approval ratings and eventually chance of success of the project will rise. In addition, support of third parties which are not directly affected by the impacts but has adequate knowledge or expertise on the different aspects of the project, is also important.

3.5.2. Local Conditions

The impacts of foreign agro investments to local community strongly depends on the crops that are planned to be cultivated on the targeted region and the production method. Although the investors are expected to do preliminary examination on the land, climate, physical conditions, for the intended crops, the consequences of production is also critical, especially if the crop is new to the region. Soil degradation effects on other cultivated crops on the region may have negative effects. When the targeted crop is indigenous or already cultivated, this time the production methods gains importance. As it is discussed above investors are seeking land where the yield gap is high. In order to achieve the potential yield, usually new and effective ways of production is introduced, including high yield seed, fertilizer and high-tech machinery. The impacts of these new methods to ecology and local community needs to be well-assessed.

3.5.3. Planning, Negotiation and Contract

Planning and negotiating while taking the local conditions and target of the investors into consideration is necessary. Since the effects of foreign agro investments on host states are extensive and long-term, comprehensive planning and transparent, participatory, inclusionary, well-document negotiation process will lead to a sustainable project, even though the process is time consuming. If the negotiations go well, the application of same principals to the process of investment/project contract is equally important. The terms of the contract give shape to relationship between investors and host states including all affected parties. That is why transparency and clearance gain more importance. Benefits and beneficiaries are indispensable content of the contract as well as responsibilities and methods.

3.6. FAVOURING ARGUMENTS

The arguments which favours the foreign agro investments, underline benefits of projects to the food security, global agricultural economy, host states and local communities. On the local scale, these arguments usually gather around the same line with the motives of the host states.

Liberal view argues that; foreign agro investments eventually will increase agricultural production that will be achieved through yield gap. Together with free movement of agricultural products, through trade liberalization policies, the surplus will be distributed more effectively. As a result, foreign agro investments contribute to food security in global scale. Increase in supply will also lead strong food stock, decrease prices and impede price spikes as it occurred in 2008. Stabilizing the price volatility will protect states from being effective by price shocks and food shortages.

As it was discussed before, because of the increase in world population, food production must be increased, in order to feed the world. It is believed that this increase can only be achieved through massive capital investments which will used for infrastructure, new cultivated, machinery, etc. Developing world which suffers more from food insecurity, requires the lion share from these

investments. However, the financial capabilities, (including both government and private parties) of developing states are not adequate to meet the required investment for increasing agricultural production. Consequently, foreign investments focusing on agricultural production is the best solution to feed the world population.

From a local perspective, supporters of foreign agro investments reveals the benefits to host states. First of all, in a parallel manner with global context, some argue that the investment projects will increase the local food supply and enhance the food quality and availability. Therefore, foreign agro investments contribute to the national food security of the host state. In order to increase the agricultural output, the investment projects are expected to require local workforce. As rural unemployment is one of the most significant problems of developing states, foreign agro investments help to decrease the rates. Bringing expensive infrastructure to the host states are seen as another benefit of foreign investments. Infrastructure projects that are necessary for the projects such as dams, roads and ports, will provide long-lasting welfare to the local people. Last but not least, new technical knowledge regarding to agricultural efficiency is another advantage of projects. To conclude based on all these benefits, favouring arguments claim that, foreign agro investments will not only avail globally food security but also help host states' development.

3.7. CRITICISM

Foreign agro investments receives strong criticism in various aspects. Despite the benefits that favouring arguments emphasize, critics claim that the investment process and its results will not deliver the promised benefits and it is a tool for neo-colonial land grabbing. Like favouring arguments objections are also focus on two major impact areas; global food security and host states.

According to critics, liberal views miss the point that supply is just one of the legs of food security. Without accessibility, food supply does not help to improve food security where needed but increase the power of the ones who possess that supply. Hallam argues that any major change in use and access of the food products are most likely to have negative and complex socio-economical and

cultural issues (Hallam, 2009a). Critics also objects the argument that increase in food production will stabilize the food prices. They believe that accumulation of food stock within the power of certain actors will cause more severe effects on developing states that suffers from undernutrition and malnutrition.

Critical arguments underline that foreign agro investments do not only constitute of food production projects, there are also non-food projects as well which do no contribute to food security at all. Despite the fact that majority of the investments aim to produce food crops, most of them are export oriented. Therefore, the surplus that is gained from the yield gap, does not stay in the host state but it is transferred to investor state who gets the most out of it. Non-food and export projects have detrimental effects on local food availability (Anseeuw et al., 2012). According critics foreign agro investments neither contributes to global or local food security.

Agricultural land is a very valuable resource of the world. Critics says that foreign agro investments make this valuable source open to exploitation and degradation. Eventhough most of the land deals do not occur as purchase but long-term lease, the period of leasing contracts is between 30 and 100 years, so they are perceived in the same line with land sales to foreigners. This approach usually receives powerful objections from nationalists within the host state. For instance, in Madagascar, strong national opposition caused cancellation of 99-year land deal between South Korean company Daewoo (The Economist, 2009).

Water is also another valuable resource that is essential for agricultural production. It is proved that the projects increase the water usage in the host state which leads to water stress and affects the local livelihoods directly, may even cause armed conflicts (Anseeuw et al., 2012).

Rural employment is another point that favouring arguments receive criticism as it is not only one of the significant promises of foreign agro investments but also one of the main motives of host states. However, critics argue that creating job opportunities for local community does not likely to happen in most cases. In

order to fill the yield gap for achieving potential efficiency in agricultural production, usage of high-tech machinery and high-yield seeds which requires relatively low workforce. Moreover, there is no guarantee that new job offerings will have better conditions than existing ones. Proposed jobs usually come with low wages, harsh working conditions and open to abuse of female and child workers. In addition, the skills and knowledge of local workers are not always fit methods of production. This may result in bringing new type of workers and relocation of existing ones. According to one estimate it is calculated that approximately 1 million Chinese workers will be working in Africa (The Economist, 2009). Under these circumstances evictions and resettlements will have serious negative impacts on local community (Anseeuw et al., 2012).

Critics object the argument that foreign agro investments will bring expensive infrastructure to the host states which usually local governments have lack of funds to realize these investments. Critics remind the fact that investors have a tendency to prefer lands that the yield gap can be filled by rain-fed. Therefore, massive irrigation projects are not likely to occur for most of the projects. Same tendency can be seen for transportation infrastructure as well. Although it is stated that some large projects include road and port construction these projects are generally export-oriented the promised infrastructure will only serve for these purposes rather than improving the welfare of local communities (Anseeuw et al., 2012). Critics also disagree that technical knowledge which will be brought by investors can be internalized by the host states. Lack of adequate institutional structure and qualified workforce that will use the knowledge seen as the main reasons behind this view (Hallam, 2009b).

CONCLUSION

Foreign agro investments has become a hot topic for the last decade not only for global agricultural economy but also international relations. It is a complex and multi-dimensional concept that involves, governments, local communities, private companies and international organizations. The concept has also many different aspects such as agricultural production as food and non-food crops, investments that require mass capital, socio-economic and political impacts. Therefore, foreign agro investments cannot be analysed through one single perspective but many.

Food has always been occupied substantial place in history of humanity. States waged war to control fertile lands, great famines resulted in millions of deaths, rulers came and went because of food. So, food does not only constitutes nutritional value but also political power. Moreover, food is an important subject of economy. Since there is always a surplus or at least a potential of surplus, food generates an economic value as well. Therefore, states have everlasting desire to control this effective power. When this is the case, agricultural policies go beyond being a national issue but an international one. Policy actions of states together with national and international private companies, recommendations and even sometimes restrictions of international organization and determines the way of global agricultural economy.

Agricultural production is strongly related with world population which has been incrementally increasing after the industrial revolution. Number of people living in the world increased almost five times since the beginning of 20th century. Inherently issue of feeding people has become more challenging. In order to solve the issue, the Green Revolution has started in mid-1900s. Thanks to the implication of technology to agricultural production and systematic investment projects, global agricultural production has increased significantly which demonstrates that the Green Revolution is a remedy for hunger. However major food crises in 1972-5 and 2008 confronts this argument and proved that increasing agricultural production is not solely enough for feeding world.

Since food and emerging issues around it are critical, new approaches and concepts emerge inevitably. Although the concept of food security is firstly pronounced in the second half of 20th century, since the hunter-gatherer societies till United Nations Millennium Development Goals, authorities have always been seeking ways to secure adequate food resources in order to feed people and retain power. Food security was first verbalized in mid-1970s after the 1972-5 food crisis and the definition has evolved through the decades. In simple terms food security exist when all people have safe, stable and continuous access to food resources adequate to meet dietary needs. As it was argued before food security does not only related with agricultural production. It has four different dimensions; availability, access, utilization and stability. All these dimensional requirements must be met in order to say that there is food security and it measured by the number of undernourished people. Despite the international efforts to reduce hunger, which has gained momentum in late 20th century, today more than 10 per cent of world population does not have access to adequate food resources to sustain a healthy life. Poverty is accepted as the main determinant of the food insecurity. Overpopulation, agricultural production, climate, armed conflicts and trade are the other most prominent ones.

According the FAO and the World Bank, it is estimated that \$83 billion worth of new investment is needed annually in order to feed the increasing world population and most of these investments are needed to be made in developing countries which are not financially strong. In accordance with this argument foreign agro investment is an opportunity to fill the financial gap and one of the best possible solutions for increasing agricultural production and reducing hunger. Foreign investments that targets agricultural production is not entirely new but foreign agro investment has become a rising trend in 2000s especially after 2008 food crisis. By 2012 the land deals regarding to foreign agro investments reached almost 100 million hectares and more than half of them occurred in Africa that is followed by Asia and South America. Primary motivation of host states is to increase food production by utilization of uncultivated land and to reduce hunger and to improve food security in this way. The other main expectations of the host states from the investment projects are;

bringing expensive infrastructure, creating new job opportunities and introducing high-tech agricultural methods and machinery. On the other hand, investors are looking for export in the agricultural products to homeland and hereby securing adequate food for feed their citizens and gain power by keeping the surplus. To serve this purpose, food crops are the majority subject of foreign agro investments, but non-food crops are also cultivated. China, Saudi Arabia, Brazil, South Korea and United Arab Emirates are the top five investor states.

Like any other hot issue in international relations, foreign agro investments have favouring and against arguments. The debate mainly focuses on the impacts of the projects on host states. Supporters of the concept gather around the motives of host states and simply argue that the projects increase agricultural production which is a must for feed the increasing world population and thus contribute food security and reduce hunger and poverty. On the other hand, critics argue that benefits of foreign agro investments are for the investors which are cash rich countries and multi-national corporations. Massive projects harms local communities and open the gate of exploitation of host states.

Foreign agro investments seem to be undeniable possible solution food security problems for the next decades. However, the benefits of the projects are strongly dependent on their implementations and there are some key factors that determine the impacts. Although the motives and intentions of investors and host states create a positive impression that the projects could provide advantages not only regional and national level but global, the practices are not that promising making foreign agro investments tool for neo-colonial land grabbing rather than a win-win situation.

First of all, available data displays that most of the targeted countries have high hunger and poverty rates and serious food security issues. Moreover, it is also known that most of the food crop cultivation projects are export oriented. This fact explicitly erodes the one of the main favouring arguments that foreign agro investments contribute to improve local food security. Rule of law and governance quality of the host states is a crucial key determinant of the impacts of foreign agro investments. When the targeted host states are analysed by this

aspect, it is clearly visible that most of them fall behind in well-accepted standards of democracy, rule of law and corruption. This importance of this fact evoke itself largely in property rights and tenure system. Recent studies underline that poor implications of laws regarding to foreign agro investments, makes local communities and natural resources vulnerable to exploitation.

Lack of transparency is another flaw of foreign agro investments. As governments are the main decision maker in deals, in most cases only a few government officials are aware of the details of the deals. This approach does not only harm the reliability of the concept but also create suspicion about the impacts and consequences of those projects. Local communities are the ones who fell these impacts most. However, involvement of local communities to negotiations process is rarely seen in foreign agro investments. Intentions, details and possible consequences are not discussed with the effected parties. Even if they are involved in negotiations, the aim of the projects and the road map is often vague.

Eventhough the targeted countries are chosen by investors usually have uncultivated land, reported deals often occurred in already cultivated lands and farmlands. In these cases, displacement of small farmers and local communities is quite common, which have devastating social and economic impacts on local population. Moreover, large scale projects cause loss in grazing land, depletion of valuable natural resources (such as water, land and forest), degradation of soil quality and chemical contamination. All these impacts does not only have long-term environmental consequences but also socio-economic as well.

Job creation benefits of foreign agro investments are also under suspicion. In many projects, number of jobs created decreases over time and quality of the jobs are not better than previous ones. In some cases, most of the jobs are occupied by non-locals. At the end of the day, foreign agro investments do not offer any major improvements in regional level. Similar situation occurs in know-how transfer regarding the agricultural production, which is an expected benefit of the projects. Technology transfer could have long-term effect but cannot be seen in recent investments.

States which falls behind in cultivation, are not able to increase agricultural production both in terms of financial and technical capacity. So, it is argued that that someone must realize it not only for themselves but for global agricultural economy and food security. Investors from developed and cash-rich countries are here to help undeveloped just like imperial powers helped colonies in mining and cultivation a few centuries ago. Despite the arguments that claims foreign agro investments generate a win-win situation both locally and globally, the basis of the concept is a power game between investor states over global agricultural market. Under these circumstances foreign agro investment turns out to be a powerful tool for neo-colonial land grabbing that impairs agrarian system and rural development, causes social destruction and increases poverty and food insecurity.

Overpopulation and food security problems are admitted facts that take top places at both national and international agenda. Foreign agro investments are introduces as one of the solutions for increasing agricultural production and avert the ever-increasing hunger issues. However due to the explained pitfalls in implementation of the projects, foreign agro investments become neo-colonial land grabbing tool. The only way to reverse the situation and make the investment project beneficial to food security is to change the methods of practice. First of all, business model of investments should include local farmers and communities by providing them an active role and leave the control of the land. By this way displacement will be prevented and the foreign agro investments will contribute economic and social development of the local communities. Contract farming and joint ventures may be the best suitable models without exploiting the natural and human resources of the host states. Besides, transparency in deals and protective legislative rights both for investors and locals must be guaranteed by governments. Active participation of all affected parties must be provided, and they must have right to comment on details of the road map.

There are some limitations before the studies of foreign agro investments. First, because of lack of transparency with the deals, it is difficult to have reliable

information. However, there are strong efforts to collect and cross-check the reported data. Second, detailed analysis of long-term impacts cannot be seen now. Therefore, studies regarding to impacts foreign agro investments either covers the limited observations or assumptions. However, as it is a hot topic for both policy makers and scholars, attention is growing in national and international level. It is believed that further research will enlighten the reel impacts of foreign agro investments and propose better and sustainable policy implications.

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APPENDIX 1. ETHICS BOARD WAIVER FORM



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13/07/19

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ADVISER COMMENTS AND APPROVAL

APPROVED.

13.07.2019



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APPENDIX 2. ORIGINALITY REPORT



**HACETTEPE UNIVERSITY
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