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Foreign Direct Investment (FDI): A means to address food insecurity? A Nexus Analysis

Ramón Voß

Abstract

Food insecurity is a major problem for humanity. Especially in developing countries, the proportion of people who go to bed hungry is substantial. A basic reason, among other factors, is the dominant poverty in those regions. Therefore, many development organizations consider Foreign Direct Investment (FDI) as a means, which has the potential to regulate these inequalities in developing countries. FDI in developing countries should be able to close financial gaps and thus generate economic growth. Economic growth in developing countries is seen as a key to reduce national poverty and achieve food security. Various development organizations, researchers and scientists analyze the impact of FDI on the target economies in order to evaluate whether FDI can induce the desired positive effects.

In this thesis the theoretical framework of Rein and Schön (1996) is used to examine secondary literature on whether FDI can contribute to food security in food insecure developing economies. The literature provides theoretical and empirical examples of how FDI affects the target economy. These results, however, are not unanimous and lead to different views on FDI in developing economies. On the one hand it is argued and demonstrated that FDI in developing countries can contribute to economic growth, which is seen as a prerequisite for food security. These studies and reports attest FDI as having a positive influence on the target economy. Beyond just financial capital, FDI creates new jobs, enhances human capital, introduces new technologies and contributes to increased production in the target economy which result in economic growth and should enable food insecure developing countries to become food secure. Other researchers come to different conclusions. According to their theories and findings, FDI does not necessarily result in positive effects for the developing target economy. In their perception, foreign investors rather take advantage of developing countries among others by stealing land from destitute people, paying low wages or selling produced goods on the global market with low revenue

streams for the developing economy. They promulgate that economic growth and food security in food insecure developing countries cannot be reached through FDI. In some cases, it evens seems that FDI exacerbates food insecurity.

Keywords: FDI, food security, food insecurity, economic growth, poverty reduction.
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(in chronological order)

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List of Abbreviations

A.D.	Anno Domini
CFS	Committee on World Food Security
CGIAR	Consultative Group on International Agricultural Research
CREFSA	Centre for Research into Economics and Finance in Southern Africa
EIU	Economist Intelligence Unit
EU	European Union
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GFSI	Global Food Security Index
GHI	Global Hunger Index
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GNP	Gross national product
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit GmbH
HCES	Household Consumption and Expenditure Surveys
HDDS	Household Dietary Diversity Score
IDDS	Individual Dietary Diversity Score
IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
ILC	International Land Coalition
IMF	International Monetary Fund
IRRI	International Rice Research Institute
LDC	Least developed country
LLDC	Landlocked developing country
M&A	Merger & Acquisition

MNC	Multinational Corporation
NSPS	National Social Protection Strategy
ODI	Overseas Development Institute
OECD	Organisation for Economic Co-operation and Development
OHCHR	United Nations High Commissioner for Human Rights
SAP	Structural Adjustment Program
SIDS	Small island developing economy
SSA	Sub-Saharan Africa
TNC	Transnational corporation
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
US	United States
USA	United States of America
USDA	United States Department of Agriculture
VW	Volkswagen
WFC	World Food Council
WFP	World Food Programme
WIR	World Investment Report

1. Introduction

Food insecurity is a major problem for humanity. Especially in developing countries, the proportion of people who go to bed hungry is substantial. A basic reason, among other factors, is the dominant poverty in those regions. Therefore, many development organizations consider Foreign Direct Investment (FDI) as a means, which has the potential to regulate these inequalities in developing countries. FDI in developing countries should be able to close financial gaps and thus generate economic growth. Economic growth in developing countries is seen as a key to reduce national poverty and achieve food security. Various development organizations, researchers and scientists analyze the impact of FDI on the target economies in order to evaluate whether FDI can induce the desired positive effects.

1.1 Research Focus

Every year various organizations and institutions (FAO, WFP, USDA, IFPRI etc.) measure, document and analyze the situation of food security. Although global food supply has increased in the past centuries and currently enough food is produced to meet global demand, every night almost 795 million people go to bed hungry (FAOa, 2015; FAOb, 2015; WFP, 2015). While the proportion of food insecure people in developing countries was reduced from 23.3 per cent in 1990–1992 to 12.9 per cent in 2014–2016[1], the majority of people suffering chronic food insecurity are still heavily concentrated in developing countries with nearly 780 million.

The cause of reduction in global food insecurity over the past 25 years is primarily attributed to economic growth in developing countries. The United Nations (UN) and other development agencies perceive economic growth as a solution for food insecurity. "*The Caucasus and Central Asia, Eastern Asia, Latin America and*

[1] United Nations – MDG Report 2015.

South-Eastern Asia have reached the hunger target[2]*, due mainly to rapid economic growth in the past two decades*" (UN, 2015: 21). One feature that many people who suffer food insecurity share, is that they live in extreme poverty[3]. Therefore, development agencies such as the UN[4] and World Bank[5] argue that economic growth must occur in developing countries in order to reduce national poverty and achieve food security. However, researchers and development agencies highlight one impediment that prevents economies in developing countries to grow – **lack of national investment**. A promulgated solution to fill the financial gap is with the economic means of FDI. Besides inflow of financial capital, researchers and development agencies outline several other benefits FDI brings to the target economy. In theory, FDI creates new jobs, increases salaries, introduces advanced technology, enhances human capital and improves other areas of the target economy which are seen as suitable factors to establish economic growth and most importantly reduce poverty and achieve food security in the target economy (Mallampally and Sauvant, 1999; Görg and Greenaway, 2003; Mirza and Giroud, 2004; UNCTAD, 2005; Dupasquier and Osakwe, 2006; World Bank, 2007; FAO, 2015c and more).

Researchers and development organizations investigate the impact of FDI on economic growth and try to find out whether FDI can contribute to food security in the target economy or not. Policymakers in food insecure economies then design and implement FDI related food security policies based on published findings and recommendations by various stakeholders in order to achieve national food security.

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2 In 2000 the UN formulated eight MDGs with the purpose to make the world a better and safer place. The first of these eight objectives was to halve the proportion of people living in extreme poverty and hunger by 2015 (United Nations – MDG Report 2015). For more information on the MDGs visit http://www.un.org/millenniumgoals.

3 People who have less than US$ 1.25 per day live in extreme poverty.

4 For more information check: UNCTAD. 2015. "Economic development in Africa: rethinking the role of foreign direct investment". United Nations Conference on Trade and Development, Geneva, Switzerland. Available at: http://www.fao.org/economic/est/issues/investments/en/#.VnL5z_nhDIU.

5 For more information check: Enticing investors: to make a serious dent in poverty, Africa must attract more foreign capital, World Bank findings, 275, June. World Bank, Washington, DC.

1.2 Research Objective

The main objective of this study is to identify and analyze the various stakeholders who investigate the research topic and influence its discourse development. Furthermore, the aim is to examine the conclusions and suggestions promulagted by various actors and check if FDI can be a suitable means for food insecure countries to achieve economic growth and food security. The questions guiding this research project include:

1. Can FDI trigger and/or accelerate economic growth in the host nation? To what effect?
2. Is FDI capable of contributing to food security in the food insecure developing country? Under what conditions?
3. What is the impact of FDI policies on food security in food insecure countries?

In order to accomplish that goal, studies evaluating the direct or indirect impact of FDI on economic growth are reviewed and analyzed with the theoretical framework of Rein and Schön (1996) (see Chapter 4). The aim of this thesis, however, is not to find a causal link between FDI and food security, rather it is tried to show how different stakeholders connect the concepts and to what conclusion they arrive.

1.3 Delimitations

Within the scope of this thesis it is impossible to conduct a primary research and therefore answer the specified research questions with statistical significance. Secondary literature was therefore analyzed with the 'Critical Policy Analysis and Frame Reflective Practice Policy' framework.

The thesis also does not claim to redefine the concept of food security, nor does it

specifically introduce new measurement indicators or theoretical perspectives. Furthermore, the intention is not to filter the most influential determinants of FDI inflow in economies and make them applicable for policy development. Listed determinants are intended to highlight the complexity of how to attract FDI into a specific economy.

FDI inflow depends on numerous determinants and its impact in the target economy is influenced by natural, legislative, social, economical and political factors. Food security in turn depends on political, natural, economic and social components. Analyzing every decisive aspect of both themes would require several separate studies to a greater extent. The structural specifications of this thesis and the range of influential indicators, factors, determinants and agents make it impossible to research and analyze every decisive variable especially within the scope of a masters thesis. However, the plethora of historical, political, legal, social, economic and environmental conditions impacting both the concept of food security and the economic means of FDI are acknowledged.

1.4 Structure of Thesis

Chapter 2 provides an overview of the actors who have significantly shaped the concept of food security. A brief historical delineation provides the reader with insight of how the concept has evolved over time. Measurement methods by multiple agents illustrate the complexity of the food security topic. Some significant natural and economic factors with the potential to exacerbate future food insecurity will be highlighted, followed by where the food insecure are generally located and who is most affected by it. The end of the chapter outlines the significance of staple food and presents economic trends and future projections and what it means for food future food security.

Chapter 3 frames the second core topic of FDI. Since investments of firms into foreign economies do not take place without previous economic considerations

and calculations, the types and motives of FDI will be highlighted first, followed by the different strategies of market entry. Thereafter, subject-specific global FDI inflow is presented and some of the determinants which impact FDI inflow into a target economy will be outlined.

Chapter 4 introduces the theoretical framework by Rein and Schön (1996) – Frame-Critical Policy Analysis and Frame Reflective Policy Practice – which is used to analyze the selected literature and involved stakeholders.

Chapter 5 describes the methodology and applied research method. In addition, it is schematically outlined how reviewed literature has been found and selected in order to allow other researchers to replicate the study.

In Chapter 6, the discourse driving actors, their applied perspectives and the results of published reports and articles are analyzed in connection with the theoretical framework by Rein and Schön (1996). Retroactively the research questions are answered from the perspective of a policy practitioner, who has to analyze published results and suggestions of various actors in order to evaluate if FDI is a suitable means to achieve economic growth and food security in a food insecure developing country.

In chapter 7 a conclusion based on the theoretical framework, findings and analysis are presented, followed by recommendations for studies and reports to enhance further discourse.

2. The concept of food security

The following chapter traces the historical development of the food security concept. It furthermore addresses how various organizations perceive and measure food security in order to highlight the complex concept and its international and national organization. The chapter also outlines examples of natural determinants and the three most commonly used staple foods to demonstrate their respective impact on food security. In addition, it provides an overview of how the proportion of food insecure people is distributed internationally and which groups of people are mostly affected.

2.1 The emerging concept of food security

That fact that people die because of inadequate nourishment over a significant period of time is not a new phenomenon. In human history there have been hundreds of occasions where thousands or even millions of people where unable to provide themselves with enough food and died of starvation. The collapse of the Mayan civilization for example was preluded by a 200 year long lasting drought. Between A.D. 800 and 1000 precipitation in the region decreased by 40% (Medina-Elizalde and Rohling, 2012), reducing harvest output and leaving millions of Mayans to die (Gill, 2000). In Egypt approximately 40,000 died of hunger between 1064 and 1072. At that time farmers had to hope the Nile would overflow its banks to irrigate their fields. For eight consecutive years the Nile carried low water levels denying farmers the ability to irrigate their crops (Davis, 2008). In more recent history, crop failures in Ireland resulted in a large number of deaths[6] and of far greater magnitude were the 45 million hunger related deaths in China between 1958-62 (Fotheringham et al., 2013; Dikötter, 2010).

[6] The total number of death attributed to the Irish famine ranges from 0.5 million to 1.5 million (compare E. R. R. Green, 'Agriculture', in The Great Famine: Studies in Irish History, 1845–52, ed. R. D. Edwards and T. D. Williams (Dublin, 1956), pp. 87–128, at p. 126; M. E. Daly, Social and Economic History of Ireland since 1800 (Dublin, 1981), pp. 20–1; J. Mokyr,'The deadly fungus: an econometric investigation into the short-term demographic impact of the Irish famine, 1846–51', Research in Population Economics, ii (1980), 237–77).

Although these events go down in history as devastating famines and do not reflect today's concept of food insecurity[7], they already show the severity of insufficient food availability or access.

2.1.1 The causes and origin of food security concept

Food security is a relatively young concept and has only attracted international attention since the 1970's. The starting point for this interest was a global food crisis between 1972-75. The crisis was substantially caused by three events. The first event was weather anomalies in certain regions of the Soviet Union and China, leading to significant crop failures in these countries. At the same time, harvest outputs of major food export countries in Europe, North America and Australia declined, exacerbating the crisis. Global wheat production dropped by seven per cent, rice by two and fodder cereals by three per cent. Simultaneously, worldwide cereal stocks decreased and the international trade of cereals reached record prices. While in June 1972 a tonne of wheat cost US$60, in February 1974 it cost US$220. The price of rice increased nearly fivefold from US$132 to US$630[8] per tonne. The drastic increase of food prices was due to the fact that besides the Soviet Union and China, countries in the Middle East and Latin America imported record amounts of cereals. Even though harvest output in Europe, Asia and the Soviet Union recovered in 1973, international cereal prices were still on the rise, since production levels in the Middle East and Africa fell sharply while global consumption increased.

The second event was an international oil crisis in 1974. As a result of the oil shortage, prices for fertilizers and fuel increased. This prevented financially weak

[7] The difference between famine and food security lies in the quantification. According to the Unites Nations "*A famine can be declared only when certain measures of mortality, malnutrition and hunger are met. They are: at least 20 per cent of households in an area face extreme food shortages with a limited ability to cope; acute malnutrition rates exceed 30 per cent; and the death rate exceeds two persons per day per 10,000 persons*".

[8] Price recorded in April 1974.

farmers to buy capacity enhancing products and in some cases deliver the goods to the nearest market in case they relied on transportation. High global fuel prices are mainly problematic in developing countries who do not possess any crude oil reserves or have the monetary means to obtain fuel on the international market.

The third event contributing to the food crisis was an altered orientation of agriculture and trade in the United States of America (USA). At the time, the USA was the largest financier of development aid and main supplier of cereal in international trade. Its agricultural sector produced huge amounts of cereal surplus for more than two decades. In 1971-72 however, the US-Department of Agriculture started to subsidize the removal of further acreage out of production, dissipated the countries large cereal reserves, reduced international food aid and proceeded to focus on only exporting agricultural products commercially. The Commission on International Trade and Investment Policy of the United States recommended President Nixon[9] to engage non-industrialized countries indirectly in order to increase their level of ownership in terms of development and domestic food production.[10] The aim of this measure was to create new strong domestic markets abroad, similar to South Korea or Taiwan, with the purpose of increasing sales opportunities for US-agricultural export products. The result of this measure was a drop of US Food aid from 18 million to 3.5 million tonnes between 1966-74, while commercial exports to non-industrialized economies increased from US$2.5 billion in 1972 to US$8 billion in 1975. When the US Department of Agriculture revised its crop forecast downwards in 1973, the price of wheat nearly doubled immediately.[11] The FAO warned then that with continuing poor harvests, global cereal stocks would fall below 100 million tons by mid-1975, which would be less than half at the start of the century and only cover 11 per cent of world consumption. In order to ensure a minimum of global food security, the FAO

[9] Richard Nixon was elected the 37th President of the United States (1969-1974).

[10] For more information check: United States International Economic Policy in an Interdependent World. Report to the President submitted by the Commission on International Trade and Investment Policy [Williams-Commission], Washington D.C., July 1971, as Papers submitted to the Commission on International Trade and Investment Policy, ibid.

[11] For more information check: Gerlach, 2002.

calculated a minimum of 17-18% of necessary cereal stocks (FAO, 1974; Gerlach, 2002).

Decreasing food reserves and production levels, a reduction of international food aid and rising crop prices made it impossible for many countries to import necessary food items to cover national demand. This worrying development culminated in a World Food Conference in 1974 under the auspices of FAO and United Nations Conference on Trade and Development (UNCTAD) to create an international cooperation with the aim of achieving greater price stability for scarce food items. At the first conference, representatives of participating governments 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*" (www.un.org: World Food Conference).

The understanding at the conference was that the eradication of hunger is a global objective and that natural resources, the state of technology and organizational ability would be sufficient to achieve the objective (OHCHR, 2016).

2.1.2 Outcome of the World Food Conference

According to the FAO the main reason for an increasing number of food insecure people between 1972-1974 was a result of stagnant or even declining national food production, while simultaneously world population and global consumption increased. "*The gravity of this large drop in production, superimposed on the already precarious situation, is readily apparent when it is recalled that an increase of more than 20 million tons of cereals is needed merely to keep up with the annual growth of population at present average consumption levels*" (FAO, 1974: vii). The focal point of the first World Food Conference was therefore to increase global agricultural production and implement international food policies to achieve global food security (ODI, 1997).

Many nations were running out of food stocks and called for necessary actions to replenish them (FAO, 2016a). Therefore, several member states of the UN agreed on implementing the 'Boerma Plan', which envisaged the stockpiling of basic agricultural commodities at strategic locations (Commission of the European Communities, 1974a). In addition to increasing agricultural productivity and the storage of food reserves in vulnerable regions, several participating member states stipulated an international fund for agricultural development and distribution of food aid. The aim of the fund was to "...*finance [...] projects aimed at increasing food production, including stock breeding and fisheries;...*" (Commission of the European Communities, 1974b: 2).

In order to examine global progress on food security the Conference furthermore agreed to implementing an international Council – the World Food Council (WFC) – responsible for analyzing future food situations and outcomes of food policies, implemented by either the UN or national governments (Commission of the European Communities, 1974b).

2.2 Definition and understanding of food security

The first World Food Conference recognized that the condition of food availability has to be secured in order to achieve food security.[12] The member states therefore agreed to increase national agriculture output.

In following years more conditions have been added to define the concept of food security. The FAO realized that availability alone is not sufficient to achieve food security. It was discovered that economically vulnerable people did not have access to available food items, which resulted in an expansion of the food security concept, adding the dimension of access.[13]

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[12] "*[A]vailability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices*" (United Nations. 1975. Report of the World Food Conference, Rome 5 to 16 November 1974. New York).

[13] "*Ensuring that all people at all times have both physical and economic access to the basic food that they need*" - FAO. 1983. *World Food Security: a Reappraisal of the Concepts and Approaches.* Director General's Report. Rome.

An influential report of the World Bank on poverty and hunger in (1986) introduced a temporal distinction of food security. The World Bank pointed out that food security can be chronic or transitory in nature. Chronic food insecurity is caused by persistent structural poverty and low incomes, while transitory food insecurity is linked to periodic natural or economic events. At the same time focus was directed toward the concern that food security is not only a significant issue on global, but also on household and individual level. Thereafter, the FAO expanded its food security concept and formulated in 1996 "*Food security, at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life*" (www.fao.org, 1996: Rome Declaration on World Food Security).

This definition also highlights the dimension of food quality. The recognition of macro- and micronutrients[14] in food can be viewed as a shift from curing towards preventing food related illnesses. A balanced diet and the intake of different nutrients is essential for an active and healthy life and for the body to "*develop, replace and repair cells and tissues; produce energy to keep warm, move and work; carry out chemical processes such as the digestion of food; protect against, resist and fight infection and recover from sickness*" (www.fao.org, 2016b: Healthy and balanced nutrition is important for everyone).

Even if a household has economic and physical access to food, individual food security of household members is still not assured. In some cultures for example, it is custom that members of a family eat the food from the same plate. In this setting, young children might get less food than their parents and/or siblings, putting them at risk to become individually food insecure, since they are denied

[14] Food is made up of nutrients: Micronutrients consits of minerals and vitamins a person needs in small amounts. Macronutrients like protein, fat and carbohydrates are needed in larger amounts (see: FAO – http://www.fao.org/docrep/005/y4168e/y4168e05.htm).

access to a sufficient amount of nutritious food to meet their daily dietary requirements (UN, 2016a). To account for this deficiency, the FAO adjusted its concept of food security in 2001 and implemented the component of social access. The current FAO definition of food security reads "*[f]ood 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: 49).

According to the FAO food security now consists of four equal dimensions (1) **availability**, (2) **access**, (3) **utilization** and (4) **stability**. The FAO specifies the dimensions as following. Food availability refers to the supply side and takes stock levels, food production and net trade into account. Food access comprises physical and economic access to food. The fact that national or international food supply might be adequate does not make people food secure *per se*, as long as their economic situation is still insufficient to purchase food. Utilization subsumes the kind of food and the way it is prepared. A diverse diet, intra-household food distribution and food preparation determine "*the nutritional status of individuals*" (FAO, 2008: 1). Food stability is an interaction of all above factors. An individual or household is only food secure when availability, access and utilization can be permanently guaranteed, regardless of natural, social or economic crisis (FAO, 2006). These dimensions are axiomatic hierarchical. Availability of food does not guarantee access and access itself does not ensure effective utilization (Barrett, 2010).

2.3 Level of food security and measurement methods

Levels of food security range systematically from (1) regional and national, to (2) household, to (3) the individual level. The state with its corresponding elements of the economic system – for example, companies that produce and offer goods in a territory and the government, which ensures the functioning of the economic system with regulatory-, structural- and process policies – safeguards national and

regional availability of food in acceptable quality with means of domestic production, regional and international trade. However, securing national food security does not imply national self-sufficiency[15]. Norway, for example, can only cover 50 per cent of domestic consumption with its agricultural production (Flaten et al., 2007), and is therefore not self-sufficient. Yet, the country is food secure[16], since it can balance this discrepancy through import (Flaten et al., 2007). The key objective at the household level is the securing of sufficient access to food for all households. Access refers to economic solvency of urban and rural consumers in order to cover their daily demand. Inadequate access to food is essentially an indication of poverty. Food security on individual level implies an adequate utilization of food to ensure a sufficient intake of vital micro- and macronutrients (FAO, 2016c). This level also considers the social access to food.

2.3.1 Measurement of food security

The measurement of food security is important in many aspects. For one, it provides organizations such as the UN and its associate organizations such as the FAO – who set a goal to eradicate hunger – viable information on how many people are affected by food insecurity and long-term studies allow them to monitor the development. Furthermore, the measurements serve as a cornerstone for national governments and non-governmental organizations to develop policies or establish programs in order to achieve food security for all people (World Bank, 2015). According to the FAO (2015b), many countries contributed to the achievement of nearly halving the number of people suffering undernourishment between 2000 and 2015[17] by implemented policies, among other things to protect

[15] Self-sufficiency refers to the state where the domestic agricultural sector of a economy is capable of providing its own population in sufficient quantity with quality food without additionally importing food on the international market to meet demand.

[16] The Global Food Security Index ranks Norway as the number 9 most food secure country in the world.

[17] The first Millennium Development Goal (MDG) of 2000 was to eradicate extreme poverty and hunger by 2015. “The proportion of undernourished people in the developing regions has fallen by almost half since 1990, from 23.3 per cent in 1990–1992 to 12.9 per cent in 2014–2016“ (UN 2015 – The Millennium Development Goal Report 2015 - http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf – last accessed on April 15th 2016).

the most vulnerable groups from food insecurity (FAO 2015b). Ghana, for example, introduced the National Social Protection Strategy (NSPS) in 2007 "*that attempts to provide a more targeted set of interventions for the chronic poor, and suggests setting up new safety nets that can be used to cushion the most vulnerable groups from environmental and economic shocks*" (Sultan and Schrofer, 2008: 2).

Measuring food security on micro[18]- or macro-level[19] proves to be a difficult task. The International Food Policy Research Institute (IFPRI) states that currently around 450 indicators are used to operationalize food security of which most agencies select their preferred variants to measure and monitor the state of food security (Carletto et al., 2013; IFPRI 1999).[20] The validity of indicators depends on the dimension of focus. Certain indicators are capable of measuring food security on a household- while others are suitable to give insight on individual level of food security. Indicators are also different in terms of their methodological applicability, some are suitable for quantitative and others for qualitative research. Furthermore, not all indicators are practical for long-term studies and comparison. However, some emerging indicators even fail to capture the intended object of measurement and nullify the outcome of the respective research (Carletto et al., 2013).

2.3.2 Specific measurement tools

IFPRI specially developed the Global Hunger Index (GHI) to "*comprehensively measure and track hunger*[21] *globally, regionally, and by country*" (IFPRI, 2015).[22]

[18] Individual, household.
[19] National, regional.
[20] See Appendix.
[21] Hunger is usually understood to refer to the distress associated with lack of food. The Food and Agriculture Organization of the United Nations (FAO) defines food deprivation, or undernourishment, as the consumption of fewer than about 1,800 kilocalories a day—the minimum that most people require to live a healthy and productive life. For more information check: Global Hunger Index - Armed Conflict and the Challenge of Hunger – by Klaus von Grebmer, Jill Bernstein, Nilam Prasai, Sandra Yin, Yisehac Yohannes.
[22] The GHI displays the level of food security in a country on a scale between 0 and 100.

In order to measure hunger, the GHI analyzes indicators divided into three dimension(1) inadequate food supply, (2) child undernutrition and (3) child mortality. Data sets come from several external organizations.[23] Until 2014 each dimension was measured with one single component indicator, all of them equally weighted and nonstandardized[24] (Jones et al., 2013; IFRPI, 2015). Since 2015 the dimension of child undernutrition considers two different indicators. One indicator provides information on the proportion of children under the age of five who suffer from wasting[25], and the second indicator measures the proportion of children under the age of five who suffer from stunting[26]. Reason for this adjustment was an inaccuracy of the previously used indicator (prevalence of underweight in children under five) in this dimension. The indicator 'underweight' is only able to provide information as to whether a child is below its age appropriate weight. This perspective however, ignores the physical component of height. A child might be of normal weight or even overweight, yet still be undersized. In addition, indicators are now standardized to control for higher and lower values in each dimension, since values in the dimensions of inadequate food supply and child undernutrition are generally higher than child mortality and a reduction by the same percentage in every dimension would then represent an equal decline. However, the level of undernourishment in a country might be at 50 per cent, with a child mortality rate at 5 per cent. A reduction of 2 per cent in child mortality would then signify a much more meaningful decline (IFRPI, 2015).

A value of 0 stands for the best score, signifying that in the respective country no child died before its fifth birthday, there is no undernourished person in the population and no child under five is stunted or wasted. A value of 20 or higher connotes a "*serious*" level of food insecurity and a value of 50 or above stands for "*extremely alarming*" (IFPRI 2015).

[23] Child mortality rates derive from the Inter-agency Group for Child Mortality Estimation (IGME), while results of child undernutrition are taken from UNICEF, WHO and World Bank and percentages of undernourishment in the population are supplied by the FAO database (IFPRI 2015).

[24] Indicator for first dimension = proportion of the population that is undernourished; Indicator for second dimension = prevalence of underweight in children and Indicator for third dimension = under-five mortality rate.

[25] Wasting = low weight for a kid's height (reflecting: acute undernutrition).For more information check: IFPRI Global Hunger Index 2015.

[26] Stunting = low height for a kid's age (reflecting: chronic undernutrition). For more information check: IFPRI Global Hunger Index 2015.

Other multidimensional measurement tools to compare country-level food security are developed by several research groups and development agencies. The FAO for example, uses 31[27] different indicators to measure food security covering all four dimensions – availabilty, access, utilization and stability. Indicators are selected according to recommendations of experts. The indicators are adapted to the latest findings and repeatedly reviewed. Once new data on food security becomes available, suitable indicators are included in the measurement method (FAO, 2016d). The Economist Intelligence Unit (EIU) – an independent division within The Economist Group founded and constructed the Global Food Security Index (GFSI). The index measures food security with the help of 33 indicators, focusing on the core elements of quality and safety (14 indicators), affordability (13 indicators) and availability (6 indicators).[28]

Although the multidimensional tools listed above consider more than just one dimension of food security, they are more focused on assessing national or regional food supply. Household measures on the other side, are much more capable of emphasizing national behaviours and determinants of access to food. The main purpose of household surveys is to highlight food security dynamics between and within households (Jones et al., 2013). A widespread tool to assess food security at the household level are Household Consumption and Expenditure Surveys (HCESs), where access to food is rarely directly measured but often determined via proxies. However, these surveys have no uniform design, which is reflected in the number of surveys exisiting to collect data of household food consumption[29] (Fiedler et al., 2012; Smith et al., 2014; ; World Bank, 2015).

[27] For more Information check: http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.Vz03bPmLS00.

[28] Indicators of the GFSI are not just a combination of indicators used by other agencies, they also include a list of qualitative indicators (e.g. access to financing for farmers; political instability) that are found relevant by panels consisting of experts from academia, nonprofit- and public sector. Indicators are also weighted according to their importance in terms of quantifying national food security.

[29] More than 700 survey tools are used to gather data of household food security in 116 countries. Surveys such as Household Budget Surveys (HBS), Individual Dietary Surveys, Comprehensive Food Security and Vulnerability Assessment (CFSVA) Surveys, Income and Expenditure Surveys (IES), Household Food Consumption Surveys, Living Standards Measurement Studies (LSMS), Individual Dietary Surveys,

One of the many instruments to measure household[30] or even individual food access is the dietary diversity questionnaire provided by the FAO.[31] Participants of the survey are asked what kind of food and beverages they have consumed in the last 24 hours (FAO, 2011a).[32] The period of 24 hours was selected to minimize recall errors and to be uniform with similar diversity studies (Ruel et al., 2004; Steyn et al., 2006; Kennedy et al., 2007; Savy et al., 2005; Arimond et al., 2009; FAO 2011a). After evaluating the survey the household receives a Household Dietary Diversity Score (HDDS) between 0 and 12[33] or the individual an IDDS[34] between 0 and 14[35], depending on the observed level (Swindale and Bilinsky, 2006; FAO, 2011; Vhurumuku, 2014).

2.4 The impact of natural conditions on food security

In order to ensure food availability it must be ensured that natural resources are able to produce crops in sufficient quantities. The following section considers therefore some natural factors that have a significant impact on the agricultural sector and influence the dimension of food availabilty.

Nutritional Status Surveys, Priority Surveys (PS), Household Income and Expenditure Surveys (HIES), Integrated Household Surveys (IHS), Core Welfare Indicator Questionnaire (CWIQ), Welfare Monitoring Surveys (WMS) and other socio-economic surveys serve as the basis of household food consumption (Fiedler et al. 2012 - Still waiting for Godot? Improving Household Consumption and Expenditures Surveys (HCES) to enable more evidence-based nutrition policies).

30 All persons living under the same roof who share meals (FAO, 2011a).

31 For more information check: “Guidelines for measuring household and individual dietary diversity” by the FAO.

32 The listed food products in the questionnaire are divided into 12 groups (cereals; fish and seafood; root and tubers; pulses/legumes/nuts; vegetables; milk and milk products; fruits; oil/fats; meat, poultry, offal; sugar/honey; eggs and miscellaneous). Each group is weighted differently. In order not to skew the result of the questionnaire and display an atypical consumption behaviour, the FAO recommends that the interview should not be performed during public holidays (e. g. Ramadan) (FAO 2011).

33 The HDDS is the sum of the 12 food groups (check: “Guidelines for measuring household and individual dietary diversity”.

34 Individual Dietary Diversity Score.

35 “The food groups considered in the score for the IDDS put more emphasis on micronutrient intake, rather than economic access to food. For this reason, the IDDS excludes the last two food groups: Sweets, and Spices, condiments and beverages (questions 15 and 16). These groups may be used for additional analysis and considerations of bioavailability of micronutrients (consumption of coffee/tea), but do not count as part of the IDDS“. Check: “Guidelines for measuring household and individual dietary diversity”.

2.4.1 Water

Arid or even semi-arid arid regions rely on irrigation systems to produce agricultural goods in order to ensure a stable production level and steady prices. Irrigation in agriculture accounts for 80 per cent of global water consumption and thereby makes the sector the main consumer of this limited resource (Molden, 2007; FAO, 2011b). In the past it was assumed that water-resources are infinite and irrigating farmland would be a necessary means to boost crop yields, but for some time now water has been regarded a limited resource, that can ebb away even faster due to future climate change effects. Even if technical achievements can help to reduce water consumption or new sources of water can expand the current stock, increasing water demand caused by population growth is expected to outmatch water supply, probably preventing future global food security (FAO, 2011b). Currently 1.2 billion people live in areas where physical water resources are scarce. It is expected that this number will rise to 1.8 billion by 2025 (UN, 2016b).

2.4.2 Side-effects of irrigation

The significant role of water in agriculture can be seen by the fact that nearly 40 per cent of global food is produced on just 19 per cent of irrigated farmland (Molden et al., 2010). However, agricultural irrigation also negatively impacts the environment. Irrigation mainly causes salinization and waterlogging with some of the effects being irreversible. Plants and crops for example, can only tolerate a certain amount of salt and irrigation increases the salt level to a toxic degree, consequently reducing yield output. Waterlogging on the other hand eliminates oxygen from the soil, leading to stifling of the crop or plant (FAO, 2011b).

In order to irrigate farmland, rivers are being diverted in many cases with substantial negative long-term effects for the environment, economy and society. In Central Asia for example, the diversion of rivers for the purpose of irrigation

almost dried out the entire Aral Sea. A century ago, the lake was the fourth largest inland lake on the planet with significant vital functions for the ecosystem and nearby communities, but to increase production output of the surrounding cotton farms, policymakers decided to divert water from the two feeder streams, leading to a significant diminution of the Sea. While this measure was economically effective temporarily by increasing crop production and employing millions of local people, the Aral Sea lost 75 per cent of its initial volume by 2005. Since then, consequences have been felt on multiple levels. As a result of declining freshwater influx the local fishing industry collapsed completely. The parched soil of the lake is still toxic due to chemicals and pesticides used by the cotton farmers. Storms carry the toxins to areas as much as 1.000 kilometers away, polluting air and water, destroying harvests and cause serious diseases[36] for people (Bennett, 2008; FAO, 2011).

The United Nations Development Programme (UNDP) states that water scarcity is far more menacing for future food security than a potential lack of arable land (UNDP, 2007). The food price crisis in 2007-08 was partly caused by droughts in many food-producing countries. In Australia for example, droughts reduced cereal and rice production by 40 per cent (FAO, 2011b). Projections assume that by 2050 global population will be above 9 billion people, most likely increasing demand for cereal by 65 per cent (de Fraiture et al., 2008; FAO, 2011b).

Water is not only important to grow crops in arid or semi-arid regions, it also plays a vital role in terms of livestock production. Livestock production aimed for human consumption already accounts for 27 per cent of water usage (Mekonnen and Hoekstra, 2011). Dietary changes towards meat products are expected to rise by 56 per cent in the next 35 years and increase demand for water (Rosengrant et al., 2002; FAO, 2011b). Being the largest consumer of water, the agricultural sector will be severely affected in case water becomes less available (Molden, 2007).

[36] cancer, liver and kidney failure.

2.4.3 Land degradation

Soil fertility is another natural component affecting the dimension of availability. Droughts, floods, landslides, forest-fires, deforestation, poor soil-, irrigation- and water management practices, unsustainable agricultural land use, removal of natural vegetation, improper crop rotation, overgrazing and frequent use of heavy machinery are all factors leading to land degradation and negatively effecting soil fertility (Scherr and Yadav, 1996; UNEP, 2016). "*Land degradation is the temporary or permanent lowering of the productive capacity of land (UNEP, 1992b)*" (www.fao.org, 2016e: Chapter 2 - Types of land degradation).

Forests provide biodiversity, biomass, oxygen and sustain a healthy soil. They additionally offer biosphere to countless creatures. Deforestation not only destroys an ecosystem, but also has long-term negative effects on the performance of the soil (Nachtergaele et al., 2011; FAO, 2011b).

Unsustainable agricultural measures[37] designed to enhance the performance of the soil, also lead to a permanent reduction of soil capacity. In Sub-Saharan Africa (SSA) for example, depletion of soil fertility is reaching an alarming level. Four times more nutrients are removed from the soil during harvest, than manure and mineral fertilizers return (FAO, 2011b).

With a rising world population, it is becoming vital for many households that enough food is produced worldwide to secure the dimension of availability. In case of depleting natural resources it will be difficult to satisfy global food demand. How important a sufficient amount of crops for food security is, will be highlighted in the next paragraph. Three food items alone currently supply up to two-thirds of the world's daily energy intake. For the most insecure households it is of paramount importance that these food items will be available and economically accessible.

[37] The use of chemical pesticides and fertilizers.

2.5 Staple foods

"*A staple food is one that is eaten regularly and in such quantities as to constitute the dominant part of the diet and supply a major proportion of energy and nutrient needs*" (www.fao.org, 2016f: Staple foods: What do people eat). Staple foods are fundamental and play a significant role in ensuring and improving food security (Shiferaw et al., 2013). The FAO estimates that there are more than 50,000 edible plants, yet 90 per cent of the world's daily energy intake is covered by only 15 varieties of them, of which rice, wheat and maize (corn) make up two-thirds (FAO, 2016f).

The International Rice Research Institute (IRRI) estimates that rice serves as staple food for nearly half of the human population (IRRI, 2016). Rice is grown in 114 countries on 144 million farms (Mohanty et al., 2013). From 1961 to 2012, the worldwide area of harvested rice increased from about 115 million to about 162 million hectares.[38] Ninety per cent of global rice is produced and consumed in Asia (Rejesus et al., 2012), but over the past two decades, rice consumption has taken on an increasingly important role in Africa and Latin America. Consumption levels in Africa rose from 16.7 kg in 1990 to 23.3 kg in 2011, a 40 per cent increase in annual per capita. Latin America experienced an increase of 46 per cent from 7.1 kg to 10.4 kg in the same period (Yamano et al., 2016).

Wheat serves as staple food for around 35 per cent of the world's population and is the second most important staple food in the developing world, after rice (Wheat Initiative, 2016).[39] In the recent past wheat has become vital in keeping people from starving in times of adverse weather conditions. During the Green Revolution[40] in many developing countries all over the world[41] the increase of

[38] For more information check: http://faostat3.fao.org/home/E.
[39] For more information check: http://www.idrc.ca/EN/Resources/Publications/Pages/ArticleDetails.aspx?.
[40] The Green Revolution describes a technological advancement in the agricultural sector, contributing to increased crop production in food insecure regions between the 1940's and 1960's.
[41] South Asia, South East Asia, West Asia, North Africa and Latin America.

wheat harvest became unmatched (Shiferaw et al., 2013). Especially in low- and middle-income countries wheat has replaced maize and rice as a source for protein and ranks second in terms of calorie supply (CGIAR, 2016). Low production levels in recent years, resulted in rising prices, as the supply side was not able to satisfy global demand (Wheat Initiative, 2016). Projections assume that by 2050 demand of wheat will rise by 60 per cent (CGIAR, 2016).

Maize – the third significant staple food in terms of worldwide calorie and protein supply – serves two vital needs for people in developing countries. First, it is a source of income and second, the cheapest of the three staple foods (FAO, 2016g). Farmers in low and lower-middle income countries account for about 67 per cent of global maize production annually, demonstrating the importance of maize for millions of resource poor farmers. Demand for rice is expected to double between now and 2050. The significance of maize will become even more important due to rising demand in other areas. For example, in recent years maize has become an alternative source for fossil fuel and also serves as feed for livestock. An increased proportion of middle class in fast growing economies like China or India contributes to rising demand of bioethanol and meat products (Shiferaw et al., 2011).

The last global food crisis in 2007-08 has shown how important food availabilty for human consumption is, in terms of ensuring food security. In 2008 prices for several food crops began to increase significantly. Between March 2007 and March 2008 the world market price for wheat rose by 130 per cent, rice by 90 per cent, dairy products by 58 per cent and maize by nearly 33 per cent (UN, 2008; IFPRI, 2008). According to the World Bank (2011a) this price development has driven an estimated 44 million people into poverty (ibid., 2011). Even though recently, prices for grains started to decline, they are still higher than they have been before the crisis started.[42] However, the decline could be temporary and

[42] In February 2005 Maize had a world price of US$89.66 per ton, in June 2008 it peaked at US$303.24 and started to fluctuate between US$140.25 (December 2008), US$341.92 (August 2012) and US$182.47 (December 2014). source:

international market prices do not necessarily reflect in-country prices (Cotula et al., 2009).

2.6 Where and who are the food insecure?

The latest FAO report – The State of Food Insecurity in the World –[43] estimates that worldwide more than 794 million people are food insecure. Around 780 million people suffering chronic food insecurity are concentrated in developing countries while the share in developed countries is estimated with 14.7 million (FAO, 2015b).[44]

Undernourishment around the world, 1990–92 to 2014–16

	Number of undernourished (millions) and prevalence (%) of undernourishment									
	1990–92		2000–02		2005–07		2010–12		2014–16*	
	No.	%	No.	%	No.	%	No.	%	No.	%
WORLD	**1 010.6**	**18.6**	**929.6**	**14.9**	**942.3**	**14.3**	**820.7**	**11.8**	**794.6**	**10.9**
DEVELOPED REGIONS	**20.0**	**<5.0**	**21.2**	**<5.0**	**15.4**	**<5.0**	**15.7**	**<5.0**	**14.7**	**<5.0**
DEVELOPING REGIONS	**990.7**	**23.3**	**908.4**	**18.2**	**926.9**	**17.3**	**805.0**	**14.1**	**779.9**	**12.9**
Africa	**181.7**	**27.6**	**210.2**	**25.4**	**213.0**	**22.7**	**218.5**	**20.7**	**232.5**	**20.0**
Northern Africa	6.0	<5.0	6.6	<5.0	7.0	<5.0	5.1	<5.0	4.3	<5.0
Sub-Saharan Africa	175.7	33.2	203.6	30.0	206.0	26.5	205.7	24.1	220.0	23.2
Eastern Africa	103.9	47.2	121.6	43.1	122.5	37.8	118.7	33.7	124.2	31.5
Middle Africa	24.2	33.5	42.4	44.2	47.7	43.0	53.0	41.5	58.9	41.3
Southern Africa	3.1	7.2	3.7	7.1	3.5	6.2	3.6	6.1	3.2	5.2
Western Africa	44.6	24.2	35.9	15.0	32.3	11.8	30.4	9.7	33.7	9.6
Asia	**741.9**	**23.6**	**636.5**	**17.6**	**665.5**	**17.3**	**546.9**	**13.5**	**511.7**	**12.1**
Caucasus and Central Asia	9.6	14.1	10.9	15.3	8.4	11.3	7.1	8.9	5.8	7.0
Eastern Asia	295.4	23.2	221.7	16.0	217.6	15.2	174.7	11.8	145.1	9.6
South-Eastern Asia	137.5	30.6	117.6	22.3	103.2	18.3	72.5	12.1	60.5	9.6
Southern Asia	291.2	23.9	272.3	18.5	319.1	20.1	274.2	16.1	281.4	15.7
Western Asia	8.2	6.4	14.0	8.6	17.2	9.3	18.4	8.8	18.9	8.4
Latin America and the Caribbean	**66.1**	**14.7**	**60.4**	**11.4**	**47.1**	**8.4**	**38.3**	**6.4**	**34.3**	**5.5**
Caribbean	8.1	27.0	8.2	24.4	8.3	23.5	7.3	19.8	7.5	19.8
Latin America	58.0	13.9	52.1	10.5	38.8	7.3	31.0	5.5	26.8	<5.0
Central America	12.6	10.7	11.8	8.3	11.6	7.6	11.3	6.9	11.4	6.6
South America	45.4	15.1	40.3	11.4	27.2	7.2	ns	<5.0	ns	<5.0
Oceania	**1.0**	**15.7**	**1.3**	**16.5**	**1.3**	**15.4**	**1.3**	**13.5**	**1.4**	**14.2**

*Data for 2014–16 refer to provisional estimates.
Source: FAO.

http://www.foodsecurityportal.org/policy-analysis-tools/maize-prices-and-returns.

[43] The State of Food Insecurity in the World 2015 - http://www.fao.org/3/a-i4646e.pdf

[44] The United Nations (UN) "...classifies all countries of the world into one of three broad categories: developed economies, economies in transition and developing countries". The World Bank categorizes countries according to their Gross National Income (GNI). They are divided into: low, lower-middle, upper-middle and high income countries. Low and lower-middle countries are considered developing. The IMF distinguishes between advanced economies and transitioning (emerging)/developing economies. However, there is neither a specific nor uniform definition or classification of developed, transitioning or developing economies.

In terms of absolute numbers is Asia the region with the highest burden of undernourishment. More than 65 per cent (511.7 million) of all hungry people in developing countries live in Asia. The region with the highest prevalence of undernourished people, however, is SSA. Almost one in four people in SSA is affected by food insecurity. Reasons for the overwhelming number of hungry people in developing countries are of environmental, social, economic and political nature. Natural Disaster such as droughts and floods reduce global food availabilty and especially developing economies in Africa and Asia do not have the financial means to buy expensive food items on the international market in order to cover national demand. "*Across the globe, poverty is the single most common cause of food insecurity*" (ADB, 2012: v). Poor people in developing countries have to spend at least 50 per cent – sometimes up to 80 per cent – of household income on food (FAO, 2009a). For this group stable and affordable food prices are of particular importance. In case prices for staple food exceeds their financial resources, they will have no economic access to food.

The urban poor are the first ones affected by any economic crisis. While people in rural areas usually have some land to grow food on and sustain themselves to a certain degree, people in cities do not have that possibility. Being a net food buyer means, income must be sufficiently high to ensure food security (Ruel et al., 2013). An economic crisis, leading to rising food prices would therefore be detrimental for unemployed or low-wage workers in urban areas, as they have neither financial nor natural resources that can guarantee them food security. However, this fact does not mean that rural people are less affected by food insecurity. According to the FAO (2015b) the majority of food insecure people in developing countries live in rural areas. This is because "*...three-quarters of the world's poor live in rural areas, with the share even higher in low-income countries*" (FAO, 2015b: 28). Although many rural households in developing countries are engaged in agricultural activities, they do not have technologies such as storage facilities, fertilizers, pesticides, etc. to increase crop yields and improve their competitiveness. If domestic food imports are sold for a lower price than

they can advertise their products for, they are often driven out of market and have to abandon their farm in order to find a job somewhere else. In case they are not able to find a job with a salary that ensures them a healthy and adequate life, they remain or even become food insecure (FAO, 2015b; Cotula et al., 2009).

Besides insufficient technologies does political instability in many developing countries contribute to low agricultural production outputs in the respective economy. Before farmers can reap the financial benefits, they have to make investments long before the product is even grown and national political instability reduces the likelihood of such transactions (FAO, 2015b; Deaton et al., 2015).

2.7 Conclusion

The chapter has given an overview of which events contributed to the creation and manifestation of the food security concept on international level. With time and further findings, the concept has been refined and expanded by including additional dimensions, as it was recognized that not only availability of food must be assured in order to achieve food security.

By adding new dimensions to the concept, various organizations and research institutes developed, expanded and adapted their measurement tools with numerous indicators that are considered suitable in order to measure food security at various levels. In many cases the results are then published with the aim "*to raise awareness and understanding of regional and country differences in the struggle against hunger*" (IFPRI, 2015: 7).

The World Bank (2015) argues that food insecurity is not caused by insufficient availability, as "*..., food shortage at the global level has yet to pose a legitimate threat*" (Gillson and Fouda, 2015: 1), but rather due to a lack of social and economic access. According to the FAO "*[e]conomic growth is necessary for*

alleviating poverty and reducing hunger and malnutrition; it is critical for sustainably increasing employment and incomes, especially in low-income countries“ (FAO, 2015b: 27). A prime example is the rapid economic growth in many Asian countries between the 1960's and 1980's which led to significant reductions of national poverty and food insecurity levels (World Bank, 1993).

As UNCTAD highlighted in their World Investment Report (WIR) 2014, developing countries often lack financial capital to boost or trigger national economic growth, and FDI can play a significant role in bridging the investment gap (UNCTAD, 2014). Therefore, the following chapter devotes its attention on the economic means of FDI.

3. Foreign Direct Investment

FDI is a form of international capital transfer (Froot, 1993) and defined as an investment of an investor of one economy into an enterprise located in a foreign economy with the objective of establishing a long-term relationship in the foreign economy (OECD, 2008). According to the International Monetary Fund (IMF) the objective is fulfilled if the foreign investor has "*significant influence that gives the investor an effective voice in management*" (IMF, 1993: 86). By obtaining at least 10 per cent of the foreign unincorporated- or incorporated enterprise, a branch or subsidiary qualifies as foreign direct investment. FDI is classified as direct investment of the foreign investor or through investor affiliated enterprises into the foreign enterprise (UNCTAD, 2016).

3.1 Types of FDI

One type is *market-seeking* or horizontal-FDI. If Volkswagen (VW) – a German based car manufacturer – opens up a factory in Mexico in order to assemble the car locally and distribute it to Mexican consumers directly, would be an example of horizontal FDI. Horizontal FDI describes investments of a company with the purpose of replicating production in a foreign economy and not relying on export.

Another type is *resource-seeking* or vertical FDI. Vertical FDI can be divided into forward vertical and backward vertical FDI. Forward vertical FDI refers to the distribution of the firms' product in a foreign market. For example, if VW decides to enter the Nepalese car market without depending on local car dealers, they will acquire their own distributorship. Backward vertical FDI involves investment with the goal to minimize costs of raw materials or supply. This form of investment is especially useful to obtain resources that are either expensive or unavailable in the home market. For example, car manufacturers need a huge amount of steel to build their cars. Since the market price for steel depends on supply and demand, the price can dramatically fluctuate. Suppliers of steel would sell the product to

the highest bidder in order to maximize their profit. If VW acquired a steel supplier, they would no longer be as dependent on market prices.

A further type is the vertical strategy of *efficiency seeking*. With this type, the company aims to take advantage of lower labor costs in a foreign economy.

The last type – *strategic assests* – is used to gain access to advanced technology, innovation, and/or research and development (Protsenko, 2003; Cleeve, 2008; Demirhan and Masca, 2008; Anyanwu, 2011; Ramondo et al., 2014).

3.1.1 Motives for Horizontal FDI

In case of horizontal FDI a company decides to establish a plant in a foreign country and offer the product or service for the local market directly. This form of investment is selected when the benefits of a local commitment outweigh the costs. Transportation costs and custom duties can be reduced by switching from export to local production, but an engagement in a foreign market could also bring costs, "*depending on factor prices and technology*" in the target economy (Protsenko, 2003: 16). According to Wilkins (1970) not only a reduction of transport costs but also savings on warehouse expenses, improved customer service through physical proximity and a reduction of damaged products caused by shipping are some of the main reasons for a company to establish a plant in a foreign market. A company is more likely to engage in horizontal FDI as long as the fixed costs for establishing a new plant in a foreign country does not exceed trade costs (Markusen, 1984; Brainard, 1997; Helpman, Melitz and Yeaple, 2004).

Horizontal FDI is also more likely to occur in large foreign markets, since it allows the company to spread fixed costs for the new plant by increasing productivity (Protsenko, 2003; Demirhan and Masca, 2008).

3.1.2 Motives for Vertical FDI

Vertical FDI occurs when a company decides to fragment its production stages geographically, due to global differences in costs. If it is economically viable for a company to relocate its labor-intensive production stages into an economy with low labor wages, it may engage in vertical FDI. A shift of a particular production stage to a foreign economy is only profitable when the costs of fragmentation stay lower than calculated comparative costs (Protsenko 2003). Helpman (1984) shows in his study that multinational firms separate their production processes geographically when the home and host economy differ in relative factor endowments. Helpman differentiates two factors of production – labor and human capital. Human capital of managers for example, is a firm specific asset and it is not bound to one single location. A manager can use his human capital in order to facilitate every associated plant, no matter where it is geographically located. If 'greater' human capital is available in country A, and labor 'cheaper' in country B, a company is more likely to outsource their labor-intensive production to country B (Helpman, 1984; Protsenko, 2003).

3.2 Choice of Market Entry

A firm can choose out of four different options to break into a foreign market. The four strategies are (i) export of a domestically produced good, (ii) a cooperation with an already established firm in a foreign market by setting up a joint venture, (iii) the acquisition of a firm in a foreign economy (Merger and Acquisition (M&A)),[45] and (iv) greenfield investment, where the firm sets up a plant in the target economy and produces the goods locally (Raff et al., 2009). The choice of a market entry mode is influenced by a number of factors. Dunning (1977, 1980) provided the theoretical framework called 'eclectic paradigm' and stipulates three

[45] The difference between a joint venture and M&A is, that in case of a merger, two formerly independent firms become one new legal entity controlling all assest of both companies. A joint venture means both firms individually decide how much to invest; "*but each firm's investment also benefits the other firm; each firm continues to choose output independently*" (Raff et al., 2009)

different factors determining FDI inflow. The factors are Ownership (O) advantages of a firm, Location (L) advantages of a market and Internalization (I) advantages within the firm. Since every of these options involve a certain amount of resource commitment, the initial market entry mode selection is crucial for the firm. If a company later discovers that the chosen market entry mode is unprofitable, it has to expect a considerable loss of money and time in case of a re-orientation (Dunning, 1977; Dunning, 1980; Agarwal and Ramaswami, 1992; Anyanwu, 2011).

A prerequisite for an international engagement of a company is the disposal of net ownership advantages over its competitors. Net ownership advantage already excludes the disadvantages foreign companies have by operating in an unfamiliar market. The advantages can be tangible or intangible, whose access is exclusive to the company. Examples of tangible ownership advantages are the presence of capital or product innovations. Intangible ownership advantages may be rights, patents or exclusive rights to dispose advanced technologies. Net ownership advantages refer to the superiority of Multinational Corporations (MNCs) compared to domestic firms, gained by experience and proven structures, which can be transmitted to the newly acquired part of the company without additional expenses. The presence of net ownership advantages does not necessarily mean that foreign companies directly invest in a foreign market. The firm could commercialize its advantages through export or licensing. However, FDI will take place if the company believes that only they can materialize the advantages. Export is usually selected when the company has ownership and internalization advantages, but no location advantages. Internalization advantages are a key condition, because the company must be convinced to perform activities in a better way than contractual partners (Markusen, 1995; Böttcher, 1996; Reinert, 2012). In case companies conclude that only ownership is an advantage, they will enter "*the foreign market by licence or other contractual resource transfers*" (Bürgenmeier and Mucchielli, 2013: 46).

3.3 Global FDI flow

In 2014 global FDI inflow fell by 16 per cent[46] to $1.23 trillion. This development is mainly caused by a reduction of FDI into developed and transitioning economies. FDI flows to developed economies dropped down to US$499 billion[47], and to transitioning economies by 52 per cent to US$48 billion, while developing economies received a historically high level with US$681 billion. Especially developing economies in Asia contributed to this rise, while FDI flows to Africa remained consistently low and declined in Latin America. Small, vulnerable and structurally weak economies were able to increase their FDI inflow from US$51 billion in 2013 to $52 billion in 2014. This is due to an increase of FDI in least developed countries (LDCs) and small island developing economies (SIDS). FDI inflow to landlocked developing countries (LLDCs) decreased by 2.8 per cent (see: Table 2).

FDI flows to Latin America and the Caribbean[48] fell by 14 percent to US$159 billion due to a massive decline (72 per cent) in cross-border M&A. Additionally, low international commoditity prices resulted in a decline of investments in the extractive sector of Latin American and Caribbean economies.

Africa's FDI inflow remained stable at US$54 billion. FDI to North- and South African economies dropped by 15 and 2 per cent,[49] respectively, while inflows to SSA increased to US$42 billion[50]. Yet, inflows to West Africa fell by 10 per cent due to an outbreak of Ebola, regional conflicts and low commodity prices. The small increase of total FDI inflow into SSA was mainly driven by economies in Central- (increase by 33 per cent to US$ 12 billion) and East Africa (increase by 11 per cent to US$ 7 billion) (UNCTAD, 2015a). Despite the fact that current

[46] In 2013 global FDI inflow accounted for $1.47 trillion (WIR 2014).
[47] A reduction of 28 per cent compared to 2013.
[48] Excluding offshore financial centres.
[49] North Africa received US$ 12 billion and South Africa US$ 11 billion of FDI inflow in 2014.
[50] In comparison to 2013 this was an increase of 5 per cent.

inflows into SSA are mainly stable, they have risen significantly in the last 15 years. The inflows began to grow at the beginning of this century after many African governments have taken action to create a more business-friendly environment.[51,52] Between 2000 and 2015 the inflows increased from about US$6.3 billion[53] to US$42.4 billion[54]. After the economic crisis in 2008 the World Bank perceived "*[FDI] inflows into Africa ...less volatile than worldwide inflows*" (World Bank, 2014: 1), due to the fact that FDI flows into SSA returned quickly to the pre-crisis level, whereas global FDI flows only reached 60 per cent of its pre-2008 level (World Bank, 2014).

FDI flows to developing economies in Asia grew between 2013-14 by 9 per cent to US$465 billion. Mainly economies in East-, South-East and South Asia contributed to this increase. China's inflow rose by 4 per cent to US$ 129 billion and India was able to attract US$34 billion, which meant an increase by 22 per cent over the previous year. FDI inflows to West Asia, however, continued their trend and dropped for the sixth consecutive year, culminating at US$43 billion. This development is mainly caused to the uncertain political situation in several countries in the region (UNCTAD, 2015a).

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51 World Investment Report 2000: Cross-border mergers and acquisitions and development. Source: http://unctad.org/en/Docs/wir2000_en.pdf

52 Prior the continent was characterized by turbulent decades of decolonialization, financial crisis and apartheid.

53 Foreign Direct Investment Flows into Sub-Saharan Africa – Science, technology, and skills for Africa's development: March 2014 - http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/03/18/000456286_20140318105721/Rendered/PDF/860600BRI0WB0H00Box382147B00PUBLIC0.pdf

54 World Investment Report 2015 – source: http://unctad.org/en/PublicationsLibrary/wir2015_en.pdf

Table II.1. FDI flows, by region, 2012–2014 (Billions of dollars and per cent)

Region	FDI inflows			FDI outflows		
	2012	2013	2014	2012	2013	2014
World	**1 403**	**1 467**	**1 228**	**1 284**	**1 306**	**1 354**
Developed economies	679	697	499	873	834	823
Europe	401	326	289	376	317	316
North America	209	301	146	365	379	390
Developing economies	639	671	681	357	381	468
Africa	56	54	54	12	16	13
Asia	401	428	465	299	335	432
East and South-East Asia	321	348	381	266	292	383
South Asia	32	36	41	10	2	11
West Asia	48	45	43	23	41	38
Latin America and the Caribbean	178	186	159	44	28	23
Oceania	4	3	3	2	1	0
Transition economies	85	100	48	54	91	63
Structurally weak, vulnerable and small economies[a]	**58**	**51**	**52**	**10**	**13**	**10**
LDCs	24	22	23	5	7	3
LLDCs	34	30	29	2	4	6
SIDS	7	6	7	2	1	1
***Memorandum:* percentage share in world FDI flows**						
Developed economies	48.4	47.5	40.6	68.0	63.8	60.8
Europe	28.6	22.2	23.5	29.3	24.3	23.3
North America	14.9	20.5	11.9	28.5	29.0	28.8
Developing economies	45.6	45.7	55.5	27.8	29.2	34.6
Africa	4.0	3.7	4.4	1.0	1.2	1.0
Asia	28.6	29.2	37.9	23.3	25.7	31.9
East and South-East Asia	22.9	23.7	31.0	20.7	22.4	28.3
South Asia	2.3	2.4	3.4	0.8	0.2	0.8
West Asia	3.4	3.0	3.5	1.8	3.1	2.8
Latin America and the Caribbean	12.7	12.7	13.0	3.4	2.2	1.7
Oceania	0.3	0.2	0.2	0.1	0.1	0.0
Transition economies	6.1	6.8	3.9	4.2	7.0	4.7
Structurally weak, vulnerable and small economies[a]	**4.1**	**3.5**	**4.3**	**0.7**	**1.0**	**0.8**
LDCs	1.7	1.5	1.9	0.4	0.6	0.2
LLDCs	2.5	2.0	2.4	0.2	0.3	0.4
SIDS	0.5	0.4	0.6	0.2	0.1	0.1

Source: UNCTAD, FDI/MNE database (www.unctad.org/fdistatistics).
[a] Without double counting countries that are part of multiple groups.
Note: LDCs = least developed countries, LLDCs = landlocked developing countries, SIDS = small island developing States.

3.4 Determinants of FDI

According to UNCTAD (2009) "*...,FDI inflows are highly concentrated in a small number of countries*" (ibid., 2009: iii). By analyzing Africa's[55] FDI inflow in 2014 for example, it shows that more than 47 per cent[56] of the continents FDI flew into just five economies (Egypt, Nigeria, Congo, Mozambique and South Africa)[57]. Reasons for this uneven distribution of FDI are differences in national FDI policies, quality of infrastructure, exchange rates, import tariffs, business environments, market access, political stability, level of corruption, legal systems, market size, growth potential and more (UNCTAD, 2009a; Blonigen, 2005;

[55] Africa's FDI inflow of $54 billion in 2014 is listed under the category of "developing economies" (see: WIR 2015)
[56] $25.6 billion of the continents $54 billion of FDI inflow in 2014
[57] Check: World Investment Report 2015

Kumar, 2002; Trevino et al., 2002; Anyanwu, 2011).

Previous studies suggest that FDI is a 'trade-off' between attractiveness and negative influences of the foreign market. Whether and to what extend a country receives FDI depends on several preconditions. Investors are looking for economies whose economic system is open and liberal (Lo et al., 2013). Tax rates, FDI restrictions, market size and growth potential, wage rates, labour laws, cost differentials, exchange rates, political stability, infrastructure and human capital are certain economic and social variables investors look at, before investing into a foreign market (Ning and Reed, 1995; Calvo et al., 1996; Fernández-Arias, 1996; Fernández-Arias and Montiel, 1996; Gottschalk, 2001; Lall et al., 2003; Fedderke and Romm 2006; Mateev, 2009; Anyanwu, 2011).
In order to increase the countries FDI inflow, governments take initiatives and incentives to MNCs, for example, lowering corporate taxes, repealling tariff barriers, offering tax holidays or subsidies (Bouoiyour, 2003; Demirhan and Masca, 2008).

The literature mentions multiple factors that are decisive for economies to attract FDI, but investigating each of them would go beyond the scope of this thesis. Since the aim of this thesis is not to analyze which of these determinants has the most significant effect on increasing national FDI inflow, the following paragraph will only outline three of them (1. market size and growth potential, 2. political stability and 3. openness). The choice of these three is based on the findings in the WIR 2015. In 2014 China – the most populous country in the world with more than 1.3 billion citizens[58] – recorded the highest FDI inflow of all countries[59]. India – the second most populous country[60] – was able to increase its inflow significantly and is overall the economy with the 9th highest FDI inflow (UNCTAD, 2015a), which suggests that the market size and growth potential have a decisive role in order to attract FDI. Political instability and conflicts in

[58] http://www.worldbank.org/en/country/china
[59] Including developed and transitioning economies
[60] According to the World Bank India has a population of 1.295 billion (2014)

West Africa and West Asia resulted in a decline of FDI inflow and openness to investment is one of UNCTAD's "*Core Principles for investment policy making for sustainable development*" (UNCTAD, 2015a: 129).

3.4.1 Market size and growth potential

The WIR of 1994 mentioned that market-size was the primary determinant of FDI inflow. "*It is expected that larger markets attract more FDI inflows*" (Liargovas and Skandalis, 2011: 327). Trevino et al. (2002), Artige and Nicolini (2006) and Kristjánsdóttir and Óskarsdóttir (2012) found market-size being the most robust and in terms of increased FDI inflow the most significant indicator. "*The demand-side of FDI theory argues that investment will go primarily to markets large enough to support the scale economies needed for production*" (Liargovas and Skandalis, 2011: 324). Investors are looking for foreign markets, which almost guarantee an increased return of capital. The bigger the market of the recipient economy is and the more potential to grow it has, the more likely is an investment of MNCs (Jordaan 2005; Demirhan and Masca, 2008; Walsh and Yu, 2010; Kristjánsdóttir and Óskarsdóttir, 2012). Given that historically most investments have been market-seeking, the market-size variable provides an explanation of why most FDI flows into developed rather than developing economies (Grosse and Trevino, 1996). Resmini (2000) observed that Central and Eastern European economies with a large population receive significantly more FDI for their manufacturing sector than smaller economies. Hansen and Rand (2006) also discovered a strong correlation between FDI and GDP[61] in 31 developing countries. Countries experiencing rapid economic growth tend to attract more FDI since MNCs want to invest and establish in such an economic environment. However, not all studies find the market size being a key determinant for a high FDI inflow. Edwards (1990), Tuman and Emmert (1999) and Jaspersen et al. (2000) could not find a positive correlation between GDP[62] per capita and FDI

[61] One way to measure the size of a market is though GDP. The GDP serves as a proxy for the market size (see: Overseas Development Institute 1997 – FDI Flows to low-income countries: A review of the evidence).

[62] Openness is commonly measured by the export-to-GDP ratio (Jaumotte, F. (2004)

inflow. Ndikumana et al. (2008) pointed out that markets in Asia are larger and therefore likely to attract higher shares of FDI than economies in SSA, putting the latter at a disadvantage (Ndikumana et al., 2008).

3.4.2 Political stability

Although literature underlines multiple factors which directly affect FDI inflow, Lucas (1990) believes that political risk is the most important determinant with significant influence on FDI inflow. Supporting studies conclude that factors such as a high rate of government changes, successful or failed political assassinations, riots, protests or persistent coup attempts in the target economy have a negative effect on a nations FDI inflow (Edwards, 1990; Alesina and Perotti, 1996; Campos and Nugent, 2002 & 2003).

One proxy to determine political stability in a country is the level of corruption where a "*low corruption index means high political stability*" (Kim, 2010: 60). Surveys conducted by World Bank, UNCTAD and the Centre for Research into Economics and Finance in Southern Africa (CREFSA) asked foreign firms and transnational corporations (TNCs) which particular factors have the biggest impact on FDI. The results revealed that corruption in a country was one of the key determinants as to why foreign companies refrain from investing. Political instability in a country is a significant inhibition in terms of its economic development. Mbaku (1988) suggests that a "*lack of political stability has contributed significantly to economic stagnation*" (ibid. 1988: 89). For poor, food insecure people in developing economies with high political instability, it means that foreign investors most likely refrain from investments and rather invest somewhere else. Political instability in food insecure economies prevents a reduction of the financial gap.

Foreign Direct Investment and Regional Trade Agreements: The Market Size Effect Revisited. IMF Working Paper)

3.4.3 Openness

"*The level of trade openness also indicates the degree of comparative advantage of a country in undertaking investment*" (Adhikary, 2011: 16). Open economies seem to be able to attract more FDI than isolated economies.[63] Walsh and Yu (2010) theorized that firms engage in horizontal FDI in isolated markets to circumvent trade barriers, but Singh and Jun (1995), and Resmini (2000) found a positive relationship between trade and FDI inflow, concluding that foreign companies are looking for open markets to be able to export their products.

Several Latin American countries were able to increase their share of FDI inflow by implementing free trade agreements (FTA). Mohamed et al. (2010) found a positive relationship between increased FDI inflow and trade in Latin American and Caribbean countries. While Cuadros et al. (2004) could not attest a positive correlation between trade and FDI inflow in Brazil and Argentina, Mexico on the other hand was able to increase their share of FDI inflow by becoming more open to trade.

Seyoum et al. (2014) also confirmed a "*bidirectional causal relationship between trade FDI and trade openness in sub-Saharan economies*" (ibid.,: 416), while Cantah et al. (2013) found that most foreign investors in SSA predominantly engage in resource-seeking FDI which are then exported on the global market. Closed economies in SSA with trade barriers are therefore less likely to attract high amounts of FDI, since foreign investors are searching for economies that allow them to either import raw materials or export the resource on the international market easily (Cantah et al., 2013). In the wake of globalization developing countries realized that they had to renounce from restricted trade policies and "*liberalize their economies in terms of trade openness*" (Ramzan and Kiani, 2012: 440).

[63] Check studies of Kravis and Lipsey (1982), Culem (1988), Edwards (1990), Chakrabarti (2001), Asiedu (2002) Biglaiser and deRouen (2006) and Cantah et al. (2013).

However, Liargovas and Skandalis (2011) add for consideration that the variable of trade openness and its influence on FDI inflow is very complex. Therefore, it is not surprising that various studies present inconsistent results (Liargovas and Skandalis, 2011). The motivation for foreign firms engaging in FDI varies and makes it difficult to analyze the effect of trade openness on FDI inflow (Dunning, 1993; Markusen and Maskus, 2002).

3.5 Conclusion

FDI is a means for an investor – public or private – to enter a foreign market. In which form the foreign entity decides to enter the foreign economy depends on the motives (market-, resource- or efficiency-seeking or strategic-assests) and for the investor most economically viable type (export, joint venture, M&A or greenfield investment).

Annually, trillions of US Dollar are invested in foreign countries. Currently, developing countries receive more FDI than developed economies, but a significant proportion of these investments flows just into a small number of countries. Various social, legislative and economic factors are decisive to what magnitute an economy attracts FDI. National policymakers have to identify the determinants of FDI inflow and make policy adjustments in areas they can influence in order to attract higher shares of FDI. For capital-constrained developing countries with a significant proportion of undernourishment in the total population, this measure might be of vital importance to increase FDI inflow, achieve economic growth and simultaneously reduce the percentage of food insecure citizens.

4. Theoretical Framework

Fain (2004) states that a sound theory basis is necessary in order to recognize the problem at hand and understand the relationship of several interrelated variables (ibid., 2004). The applied theory must be useful in order to put the focus on the research questions and additionally help to answer them (Bryman, 1988). The theory of Rein and Schön (1996) – Frame-Critical Policy Analysis and Frame Reflective Policy Practice – allows the researcher to understand the correlation of the two interconnected variables of FDI and food security by identifying and analyzing the findings or suggestions by several stakeholders. Furthermore is the theory perfectly suited to firstly, recognize the perspective from which the various stakeholders have considered and evaluated the problem of food insecurity and secondly, how they perceive the promulgated solution approach of FDI in order to accomplish economic growth and food security in food insecure target countries. According to Wagenaar (2011), interpretive policy analysis is influenced by political actions, institutions, meaning and the reality-shaping power of meaning (ibid.: 3). Therefore, it is of particular importance for a problem analyst and especially policy practitioner who tries to develop an appropriate food security policy in relation with FDI to analyze the problem frame from a certain distance and to be aware that several stakeholders shape the discourse by applying different and sometimes even diametral perspectives.

4.1 Frame-Critical Policy Analysis and Frame Reflective Policy Practice

Rein and Schön (1996) have recognized conceptual and practical issues in the field of public policy development. They add for consideration that in case of economic growth the initial condition is of major importance, but hightlight that each country starts with different conditions. Policies must therefore be developed specifically for each economy.

Romer (1994) discovered a crucial problem within the research of economic growth, which is manifested in the never-ending creation of theories concerning the topic. He (1994) mentions that economic growth is impelled in two ways. The economy of a country either grows due to internal interventions and processes or external forces help the economy to flourish. These two divergent directions would generate different theories and thus influence the future empirical approach. However, in his view, research on economic growth is far too stiffened on their factors that ensure their presented data a reliable methodological base. Researchers might be able to confirm growth by analyzing trade or the development of national GDP, but social components, that could show growth, are largely ignored (Romer, 1994). Many components that may be in a position to predict or explain economic growth are unobservable (Lucas, 1988). Romer (1994) found that Lucas's (1998) observation that "*people with human capital migrate from places where it is scarce to place where it is abundant, is as powerful a piece of evidence as all the cross-country growth regressions combined*" (Romer, 1994: 19). As the idea of human capital was introduced into the realm of economics, Lucas (1988) and perhaps many other economists perceived it as "*ethereal*" (ibid.: 35), but after years of research, human capital has been used as an indicator to measure economic growth ever since.

Before agents can begin with a study and quantify economic growth, they have to choose from several theories and methods. "*Multiple theories are "consistent with the same small number of facts," and there is no crucial experiment by which to discriminate among contending theories*" (Rein and Schön, 1996: 87). This situation is problematic for policymakers who develop their policy based on collected economic data. If a research focuses on a theory or method that might exclude associated and explanatory components, a developed policy designed to contribute to economic growth could overlook unsuspected factors.

In addition, the mindset of researchers is influenced by their cultural, social and geographical origin, which may lead to divergent results (Kuhn 1970), or as Rein

and Schön phrase it "*...different observers of a unified world come to view it through incommensurable systems of concept*" (Rein and Schön, 1996: 87). According to Kuhn (1970) this is even amplified by the dissimilarity of languages the researchers in the field speak, and even if researchers grew up in the same culture, the same social class and are native-speakers of the same language, they still might interpret the exact same theory in a different way. These circumstances lead to a loss of the theory's originally intended meaning and changes the conditions in further research (Kuhn 1970). This pluralism is an aggravating condition for policymakers, who have to create an applicable policy based on a small number of facts conducted by researchers who look at a unified world through multiple lenses with incommensurable theoretical perspectives. Therefore, Rein and Schön (1996) argue that social science is "*limited in its ability to engage a politically and normatively charged controversy and contribute to its resolution*" (Rein and Schön, 1996: 87). They are convinced that multiplism is concerning for the policy realm.

The frame-reflective approach is therefore designed to help policy agents to circumvent multiplism and analyze the object in question, despite its multiple frames. In order to do so, the analyst has to identify the central point of all frames related to the topic. The policy discourse is especially coined by rhetorical frames. These frames arise from speeches, memorandums, or journalistic essays by politicians, critics, policy advisors, consultants and journalists who thematize the issue. Out of this conglomeration, the frame-analyst then has to filter out the core issue and analyze what needs to be done in order to solve it. Since rhetorical frames all use the same medium of narration, it allows comparability and reframing (Rein and Schön, 1996).

Frame conflicts arise when actors with opposing views engage in the same policy dispute. In the worst case, this can lead to a blockage of further policy development. The problem can only be resolved if both sides focus their perspectives on all competing frames relating to the issue instead of just acting

from their own frame. "*The first task of such an analysis is, of course, to identify the competing frames and their sponsors in an issue terrain of policy discourse*" (Rein and Schön, 1996: 95). Issues are raised, perceived and discussed by different actors. These in turn have specific forums where they discuss the topic. The main forums for food security discourse would include non-governmental (FAO, WFP) or intergovernmental organizations (UN), the media, research institutes (e.g. IFPRI, CGIAR), academic disciplines, international market, legislation and the public. Even though the discussions in each of these forums follows different rules, the discourse of one forum might diffuse into others and influence it.

The first step of the analyst is to identify the problem area and the actors who shape the discourse. The next step requires the analyst to specify a research question, which is capable to provide answers for the specific problem. Rein and Schön (1996) perceive it as helpful if the analyst analyzes how the problem and the discourse developed over time. Only if the analyst has a closer look at the historical development of a problem a sensible policy can be developed, since a short-term analysis will leave many aspects of the problem unconsidered.

An important principle for a frame-critical analyst is not to be influenced or guided by one's own emotions. A controlled and clinical analysis is especially important for emotionally charged topics (Rein and Schön, 1996). Food insecurity in developing countries is such an emotionally charged topic, if one keeps in mind that the world produces enough food to feed the entire population, yet, millions of people die from undernourishment every year. The analyst must therefore interpret the various rhetorical frames surrounding the core issue value-neutral (Rein and Schön, 1996).

In case of policy design, it is of utmost importance that they do not lead from one undesirable state to another. If such a case should occur, the policymaker has to find a compromise between conflicting discourses, even if it requires an inclusion

of disregared elements of a previous frame, that stand in sharp contrast to the latest policy (Rein and Schön, 1994). By doing so, this emerging frame can act as a new stimuli to solve the core issue. In disciplines like political philosophy, these conflicts lead to a progression in discourse development, by regarding them "*as preconditions for reasonable and deliberative discourse*" (Rein and Schön 1996: 101). The discourse controversy can be limited, by prematurely labelling concepts as unusable, as they may turn out to be reasonable in retrospect.

5. Methodology

The purpose of this thesis was to examine the influence of FDI on economic growth in the target economy with a special interest on its impact on food security in food insecure developing countries. "*Research questions in qualitative research can be as varied as the topics and scenarios being investigated.... Basically, they are the questions we all ask about things which fascinate, puzzle, anger and shock us about social life*" (Holliday, 2007: 29). Yin (2009) notes that a literature review is a suitable method in order to understand a research topic with complex variables. Due to the fact that the impact of FDI on economic growth and food security is conceptualized, measured, examined, evaluated and analyzed by many different stakeholders in several discourse forums and each of the two variables – food security and FDI – in itself, influenced by many diverge factors, the research method of literature review is best suited in order to gain a comprehensive and informative overview of the research subject.

The three purposes of this chapter are to (1) describe the selected research method, (2) the selection of reviewed data, and (3) the procedure of data collection.

5.1 Literature review

Apart from expanding the knowledge of each of the two variables – food security and FDI – the literature review furthermore allows the analyst to re-enact the historical development of the research topic. The method allows to detect how various stakeholders have evaluated the impact of FDI on a target economy then and now and if the problem has been expanded by other frames (Hart, 1998; Randolph, 2009). This step is especially relevant to see who of the stakeholders has shaped which problem frame and if the frame was expanded by other dimensions and factors throughout the process, as a sensible policy can only be

developed if the analyst takes a closer look at the historical development of the problem (Rein and Schön, 1996). In addition, the literature review is a suitable method to discover important factors that may have an effect on the research topic, identify research methods and techniques that have been applied by several stakeholders and to categorize the conclusions of previous studies which allows the analyst to identify contradictions, gaps, and inconsistencies (Bem, 1995; Baumeister and Leary, 1997; Cooper, 2003). These insights allow the researcher to formulate recommendations for further studies investigating the research topic (Gall et al., 1996; Randolph, 2009).

5.2 Selection of literature

As Rein and Schön (1996) point out, the discourse can take place in several forums. Therefore, sources from different forums have been reviewed and analyzed in order to obtain a comprehensive overview of the research topic and its discourse development. The starting point for the literature review were official FAO[64] and UNCTAD[65] reports, due to the fact that the problem of food insecurity and the flows of FDI are primarily covered by these two development organizations. "*Both [sets of reports are suitable to serve] as starting points for more specific investigations in these areas*" (Easterby-Smith et al., 2008).

However, Rein and Schön (1996) also mention that a frame analyst has to expand his or her focus and incorporate factors and conditions into their analysis, which might have an influence on the problem. Therefore, studies, reports and articles of various stakeholders that examine the impact of FDI on the target economy, even if they are not specifically aimed to investigate the impact of FDI on economic growth or food security in the target economy were included in the literature review.[66] Food security can not only be achieved when foreign investors directly

[64] The state of food insecurity in the World
[65] World Investment Report
[66] Not every literature focusses exclusively on how FDI may contribute to food security or achieve economic growth in the target economy. Yet, literature dealing with the effects of FDI on the target economy was included in the literature review since even non-food related foreign investments in a target economy can either potentially contribute

invest into food production segements of a country, but can also be reached when FDI flows into areas which at first thought do not have an immediate impact on food security (Rein and Schön, 1996).

Furthermore is reviewing literature of multiple research institutes, media sources, scientific articles and development organizations of crucial importance in order to recognize from which frame the different stakeholders have evaluated the problem of food insecurity and whether they conclude or perceive FDI as a suitable means for food insecure developing countries to achieve economic growth and food security (Rein and Schön, 1996).

Additionally, several food and FDI policies were reviewed to see how conclusions and policy suggestions articulated by various stakeholders influence national policymakers in designing FDI or food security policies (Rein and Schön, 1996). The inclusion of different discourse forums into the analysis is furthermore substantial in order to identify conflicting policy proposals that may occur when independent stakeholders evaluate the problem from different perspectives and propose divergent policies, they believe are suitable to dissolve the problem. However, polarizing policy suggestions can complicate the design of suitable FDI or food security policies for national policymakers in food insecure developing countries (Rein and Schön, 1996). It is very likely that policymakers will design their policies based on the conclusions and suggestions of one stakeholder and in case the selected path proves to be unsuitable to solve the problem of national food insecurity, the designed and implemented policies have to be voided and replaced by new policies. In the worst case, the active policies can lead to a direct aggravation of food insecurity in the host country.

to food security or exacerbate food insecurity caused by unintended external effects. An example would be FDI into the transport system of a target economy, which might connect food insecure people in rural areas to markets.

5.3 Procedure of Data Selection

Mainly search engines[67] and key phrases such as 'influence of FDI on economic growth', 'impact of FDI on food security', 'FDI and poverty reduction', 'FDI and spillover-effects' were used in order to find relevant literature. The findings served both as a benchmark to detect further literature compiled through the reference list of the respective source and to expand the knowledge surrounding the problem frame. "*Looking at journals that deal with [the investigated research topic] will give ...either useful insights directly from the articles studied or, at the very least clues, or leads, to follow from the references cited*" (Easterby-Smith et al., 2008: 31). Due to the fact, that the discourse of food security in relation with FDI does not only take place in the academic realm it was not feasible to only analyze and review literature published in academic journals. "*Deciding how wide to cast the net is a critical step in conducting a review*" (Randolph, 2009: 4). Sources from other forums – such as newspaper articles (which shape the public discourse), reports from independent research institutes (who may influence the discourse in the academic and public realm), government policies or summaries of congresses regarding the problem of food insecurity (which may either be influenced by discourses from other realms and also contribute to a further discourse development) and development reports by several agencies were included in the literature review. However, when non-academic literature was reviewed, it was ensured that the sources are reliable and appear in other discourse forums. "*Reliability is, literally, the extent to which we can rely on the source of the data and, therefore, the data itself. Reliable data is dependable, trustworthy, unfailing, sure, authentic, genuine, reputable. Consistency is the main measure of reliability. So, in literary accounts, the reputation of the source is critical*" (Pierce, 2008: 83).

[67] LUBsearch by Lund University or Google Scholar

6. Analysis

The analysis is divided into several sections. As Rein and Schön (1996) note, do researchers choose from a pool of theories first, before they study the research topic. Therefore the first two sections will analyze the two dominant perspectives from which several stakeholders examine the impact of FDI on the target economy. Thereafter, as required by Rein and Schön (1996), the key actors who drive the discourse are identified and the historical development of the research topic demonstrated in order to recognize how the problem has been examined before and which dimensions and factors have been included into the several problem frames throughout the discourse process. This is followed by an analysis of the findings presented by different stakeholders in order to categorize their conclusions and to identify contradictions, gaps and inconsistencies.

Putting the theory into practice, the guiding research questions are answered from the position of a policymaker, since they have to design suitable policies based on published data and suggested recommendations provided by several stakeholders.

6.1 Modernization Perspective

Modernization is one perspective out of which various stakeholders evaluate the impact of FDI on economic growth and food security in the target country. Modernization theorists believe that the problem of income inequality in a society is a necessary condition in order to trigger an economic development process. They even assume that income inequality increases significantly in the first stage of national economic development, but will eventually decrease with time,[68] due to the fact that in the initial phase of economic development the proportion of high-income jobs only increases in certain sectors, while the share of population working in low-income sectors remains. However, modernization proponents expect that after some time the surplus of workers in the primary sector, who in

[68] See: Kuznets Curve

average receive lower wages than workers in the two remaining sectors, will transition to the manufacturing or tertiary sector, where they have theoretically a better chance to earn higher wages. The modernization school furthermore assumes that a capital injection of any kind and irrespective of the sector leads to growth in the entire economy and contributes to a more equal income distribution. FDI in East-Asia's export sector for example, increased the share of low-wage jobs and improved the size of income distribution (Fei and Ranis, 1964; Rostow, 1980; Adelman and Robinson, 1989; Tsai, 1995; Mamun and Nath, 2004; Saqib, 2013).

As laborers, especially those whose wages are so low that they have limited economic access to food, should theoretically benefit from domestic economic growth in terms of getting jobs in areas with higher wages, which should enhance their level of food security. In case food prices remain stable, high salaries should enable people to purchase more food. Even if prices of all food items rise, these people should not fall back into a food insecure status immediately, providing their real wage is high enough to allow them to obtain food, which was rarely the case beforehand.

In case of low domestic capital investment modernization theorists argue that FDI is needed to start and accelerate economic growth. They attest FDI a dual function. "*FDI is being sought by most, if not all, developing countries as a means of complementing the level of domestic investment, as well as securing economy-wide efficiency gains through the transfer of appropriate technology, management knowledge, and business culture, access to foreign markets, increasing employment opportunities, and improving living standards*" (Dabour, 2000: 27). Keynes (1970) mentions that capital has to be invested in order to cause spillover effects. These spillover effects are increased human capital on the one side and higher productivity output on the other side. According to Berthelemy (1995) those effects are not limited to the FDI receiving firm or sector. Knowledge is passed on to local companies who come into contact with

foreign subsidiaries and eventually spread throughout all sectors (Kleynhans et al., 2012).

Once a MNC invests into a foreign economy, it has analyzed its ownership, location and internalization advantages and concludes that they are better equiped in operating the desired type than any indigenous firm. The MNC expects to work more economic, efficient and productive and modernization theorists assume that domestic companies will watch, learn and copy management and organizational practices to remain competitive and survive on the market (Yao and Wei, 2006). As soon as domestic firms acquire the service of people who worked for firms with FDI inflow or participated in joint-ventures[69], it is believed that their accumulated knowledge will be absorbed by the target economy. "*Increasing the efficiency of the production process can happen by copying new technologies or by hiring trained workers and managers from foreign-owned companies*" (Stančík, 2007: 2). Firms who directly receive FDI are more likely to create new products, have better marketing techniques and increase productivity which might spill-over to domestic firms, positively influencing the entire target economy (Aitken and Harrison, 1999). A FDI receiving company is expected to benefit from increased access to foreign markets by inheriting contacts from the foreign investor. Having a wider market range will improve the market position of the local firm through opening up of new markets. Advanced know-how can lead to higher productivity and the investments can be used to acquire new technologies in order to improve a business in the long run (Moore and Feldman, 1960; Mundell, 1968; Preston, 1975; Hein, 1992; Firebaugh and Beck, 1994; Deardorff and Stern, 1994; Tsai, 1995; Borensztein et al., 1998; de Soysa and Oneal, 1999; Jenkins and Scanlan, 2001; Lipsey et al., 2004; Mihalache-O'Keef and Li, 2011; Holtbrügge and Kreppel, 2012; Hodrab et al., 2016).

Increased production and efficiency, induced by foreign companies, should potentially improve food security in a food insecure economy. If the domestic

[69] Joint-venture is a partnership between two or more firms who share the same objective.

agricultural sector copies productivity enhancing methods used by foreign investors in the same sector, they are theoretically able to increase their own output. In case the foreign investor decides to export all food, the domestic sector might still be able to satisfy national food demand since they are expected to have copied productivity enhancing methods from foreign investors and thereby increased national food supply on their own. Even FDI in other sectors should theoretically contribute to national food security as local companies are assumed to have copied technologies, increased productivity and efficiency. Reduced production costs and higher volumes are then expected to be passed on to employees and customers in form of higher wages and lower product costs. When customers spend less on other consumer goods, such as clothing, medicines, furniture, cars, ect. they might have more money left to purchase food.

6.2 Dependency Perspective

Dependency is another perspective from which actors evaluate FDI and its impact on the target economy. Dependency is the polarizing counterpart to the 'Modernization Perspective'. While modernization theorists propagate that FDI is a necessary means for financially weak developing countries in order to trigger or accelerate economic growth, the dependency theory tries to explain why poor countries remain poor even though they receive financial support from rich developed economies (Kalu, 2012). Dependency theorists argue that FDI has a negative effect for economies that depend on foreign capital. Local companies in developing countries face a number of disadvantages compared to MNCs and TNCs[70]. One of these disadvantages is the technological gap between FDI affiliated subsidiaries and domestic firms. Once foreign investors introduce advanced technology and dominate the target industry with products of high quality and quantity, they may dominate the target industry and displace local companies. A displacement of native firms is a negative effect and can lead to less

[70] The difference between MNC and TNC is their structure. A MNC has a headquarter in each country it operates in. A TNC also operates in many countries, but has only one headquarter (World Health Organization (WHO)) http://www.who.int/trade/glossary/story057/en/

economic growth in the long run. Aitken and Harrison (1999) point out that productivity in domestically owned firms declines as soon as FDI increases. They call this phenomenon 'market-stealing-effect'. FDI can lead to oligopolistic or even monopolistic market structures (Moran 1978; Tsai, 1995; Aitken and Harrison, 1999; Mihalache-O'Keef and Li, 2011). MNCs and TNCs are worldwide operating entities, possess financial capital, skilled labour and innovative ideas that are more likely to be profitably exported. Lack of financial capital, antiquated technology, less effective organization and managment structures leave domestic firms in a subservient position (Haddad and Harrison, 1993; Aitken and Harrison, 1999; Blomstrom and Sjoholm, 1999; Alfaro, 2003).

The dependency school suggests that peripheral[71] countries will always be dependent and less developed. While neoclassical economics expect trade to be beneficial for both sides – the investor and investee – and contributes to economic growth in the target economy, dependency theory suggests that the international trade system is completely controlled by developed countries who want to maintain their position of power at the expense of developing countries (Smith 1979; Kalu, 2012). According to Galtung (1971) are developing countries systematically made dependent from and by developed nations. Despite the fact that foreign investors may bring much needed financial capital to an investment scarce country, introduce advanced technology, restructure the FDI receiving company (in case of M&A) in order to make them more efficient, enhance access to foreign markets and may lead to positive spillovers in the entire economy, local entrepreneurs are likely to face difficulties in competing and are expected to be quickly eliminated from the market (Bornschier and Chase-Dunn, 1985; Gilpin, 1987). In many cases, developing countries can only offer a couple of commodities to the international market. Dependency theorists argue that these products are then exported to developed countries, firstly because of their financial superiority and secondly due to their fully developed economic sectors. The raw materials are then manufactured and sold back to developing countries.

[71] 'Primary/center' is synonymous for industrial, developed nations, whereas 'secondary/periphery' defines agricultural, developing economies.

"*Finished goods cost more than raw materials; thus developing countries cannot accrue enough income from their exports to pay for their imports, resulting in debt and decrease of economic growth*" (Kalu, 2012). Yet, trade is the most important source of income in developing countries, often exceeding the gross national product (GNP[72]).

The theoretical implications of dependency have evidently negative effects on food security in food insecure developing economies. A disappearance of domestic companies could have detrimental effects for the local population in terms of their food security. People will lose their job if several local companies cannot compete against MNCs or TNCs. If the domestic economy is left unable to further process raw materials and is forced to export them in order to be converted into consumer goods, which then must be imported for more money, is additionally harmful for food insecure developing countries where poverty is already a major problem and the main cause for food insecurity. In Burundi[73] for example, a country where 55 per cent of the population earn their livelihood with coffee bean farming, and coffee accounts for 80 per cent of the economies export earnings, "*[l]ess than 5% of Burundian coffee was processed in the country in 2009, with the higher value-added operations taking place abroad*" (www.ohchr.org, 2013: World Bank-led privatization of Burundian coffee). The unprocessed farm product is exported for less money than it is being imported, which does not help a food insecure economy to reduce poverty and achieve food security. For example, in case a food insecure developing country grows wheat but does not have the capability to transform the wheat into food, it needs to export the good in order to be processed. The final food product then has to be imported again for more money, exceeding the export costs.

[72] The GNP is the value of all goods and services produced by residents of a country – regardless of whether this was carried out in or outside the country – in a specific period of time.

[73] According to OHCHR are 60 per cent of Burundi's population chronically malnourished. http://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=13246&

6.3 Identification of discourse driving key actors

The discourse of food insecurity is primarily driven by development organizations (UN, FAO, WFP, World Bank, OECD, IMF, GIZ, etc.) or research institutes (IFPRI, IRRI, Global Food Security Index, etc). The aim of the research institutes by publishing reports centered around food insecurity is mainly "*to raise awareness and [understand] ... regional and country differences in the struggle against hunger*" (IFPRI, 2015: 7). The reports are usually not addressed to a particular audience, yet the agencies hope that the "*report will trigger action to reduce famine around the world*" (ibid.: 7). Development organizations on the other side aim to influence policy development. By identifying factors that lead to food insecurity, the reports should "*provide guidance on which policies should be emphasized in the future*" (FAO, 2015b: 4). However, the FAO argues that the achievement of global food security is generally a difficult task, since the principle of "*one-size-fits-all*" (FAO, 2015b: 4) is not applicable. They are aware that not every country has the same conditions[74] and while food insecurity in country A may be caused due to low food availabilty, an insufficient infrastructure in country B may be responsible for a high share of food insecure people (FAO, 2015b). This perception reflects the conception of Rein and Schön (1996) who note that natural, cultural, political, social and economic conditions vary from country to country and FDI policies aimed to ensure food security in the respective country must be designed in accordance to these conditions.

Development organizations (e.g. World Bank, FAO, IMF) perceive FDI as a solution for financially weak developing economies to reduce poverty and achieve national food security. Therefore, academics interested in evaluating human welfare, increasingly focus their attention on FDI and try to examine its impact on economic growth and food security in the target economy. Media and international organizations – such as reuters, ILC, LandMatrix, ejatlas, Oakland Institute etc. – join the problem evaluation by focussing their attention on

[74] Natural-, infrastractural-, political-, social- and economic conditions vary from country to country.

landdeals carried out by foreign investors and report about their impact on those communities who are affected by the deals.

However, conducted studies and reports often present conflicting results, making it difficult for policymakers to design and implement suitable food security policies with regard to FDI.

6.4 Discourse development of the research topic

Over the past years studies of human welfare have gained increasingly importance and went through a constant evolution in the way of looking at the research topic. Early studies in the 1970s and '80s (for example: Elsenhans, 1975; Bornschier, Chase-Dunn and Rubinson, 1978; Dolan and Tomlin, 1980; Evans and Timberlake, 1980) focused their attention on macroeconomic factors such as income per capita, economic growth and inequality in order to evaluate human welfare. However, as Lucas (1988), Romer (1994) and Rein and Schön (1996) point out, it is not sufficient to purely focus on macroeconomic factors in order to evaluate economic growth, since social components such as human capital are as useful to explain why certain economies create no, low, moderate or even high economic growth. After Firebaugh and Beck gave to consider that some measurement indicators are unable to examine the research object of economic growth accurately – at that time it was a popular view that "*...foreign investment tends to dramatically increase inequality in the Third World (i.e., it tends to benefit the rich and hurt the poor)*" (Firebaugh and Beck, 1994: 640), studies of human welfare started to shift towards microeconomic indicators such as child mortality (Firebaugh and Beck, 1994; Shen and Williamson, 1997; Frey and Field, 2000), food security (Wimberley and Bello, 1992; Firebaugh and Beck, 1994; Jenkins and Scanlan, 2001; Mihalache-O'Keefe and Li, 2011) and the status of women (Shen and Williamson, 1997; Gray, Kittilson and Sandholtz, 2006; Richards and Gellény, 2007; Villarreal and Yu, 2007; Ross, 2008). However, despite the fact that these microeconomic indicators are currently perceived as useful in order to measure human-welfare, many development agencies and

researchers still focus on macroeeconomic indicators in order to demonstrate why mostly developing economies are food insecure while developed economies are food secure. The overall understanding of development organizations is, that developing countries are food insecure due to a lack of financial capital and they can only become food secure if they attract more FDI in order to fill this financial gap.

6.5 Analyzing the impact of FDI on economic growth/food security

The following sections analyze the findings of various stakeholders who evaluate the outcome of FDI on the target economy in regards to economic growth and food security. This analysis is of particular importance since the results and proposals of the stakeholders are crucial for further discourse development. In addition, it can be assumed that national policymakers in food insecure developing countries align their food and FDI policies based on the findings of published reports[75].

Recently a number of studies and reports have focussed their attention on evaluating the impact of FDI towards food security in the agricultural sector of food insecure developing countries. They specifically highlight the importance of foreign investments in this sector in order to increase domestic food production and ensure national food availability (FAO, 2009a; Smith and Häberli 2012; Slimane et al., 2015; Weingärtner, 2010). However, while some reports found FDI in the agricultural sector of developing economies to be helpful in reducing local poverty and food insecurity (World Bank, 2008; FAO, 2009b; FAO, 2009c; UNCTAD, 2009b; Hallam, 2011; FAO, 2014; FAO, 2015b), it is surprising that no stakeholder has any detailed knowledge about how much FDI flows into the agricultural sector of food insecure developing countries. The problem many researcher and even development agencies face, is that contracts are often

[75] In this context reports refer to scientific articles conducted by independent scientist, reports of national and international development organizations, research institutions and media articles that focus their attention on solving the problem of inadequate economic growth and food insecurity with the means of FDI.

undisclosed, resulting in unreliable data availability. Even the World Bank, International Food Policy Research Institute (IFPRI) and International Land Coalition (ILC) can only estimate the amount of investment, since details are rarely published and not every contract is put into practice (World Bank, 2011b). Nevertheless, sometimes key actors promulgate general assumptions that are rarely based on thorough empirical data sets, but reflect only individual occurances that have been observed in certain countries. The FAO for example, observed that the entry of foreign investors into Ghana's agriculture created more than 180.000 new jobs between 2001-2008. The same positive effect was observed in Uganda where the entry of eleven TNC's provided around 3.000 new jobs in just one year and in Sudan over 6.500 jobs between the period of 2000 -2008. These observations led the FAO to advise developing countries to allow FDI in the agricultural sector and even design policies in order to attract more foreign investors (Gerlach and Liu, 2010).

Inconsistent results after examining the impact of FDI on economic growth or food security in the target economy are primarily caused by obscure data availabilty. FDI inflow is often estimated and sometimes not even disaggregated according to the sector. UNCTAD[76] and the World Bank[77], for example, present aggregated FDI inflow, making it difficult for academics and researchers to measure the impact of FDI on food security in the target economy. The Organization for Economic Cooperation and Development (OECD) on the other hand is able to provide sector specific FDI inflows for a single economy, however, their dataset is limited to just a few countries, without any data available for developing economies. From this starting point, however, it is difficult for national policymakers in food insecure developing countries to design and implement suitable policies in order to ensure that FDI leads to the anticipated outcome of national food security. The published results and suggestions from various stakeholders derive from insufficient datasets and impede reliable policy

[76] http://unctad.org/en/Pages/DIAE/World%20Investment%20Report/Annex-Tables.aspx
[77] http://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD

development (Rein and Schön, 1996).

Not only the data of FDI flow is insufficient, even the presented results of food security are often dissimilar. In 2009, for example, the FAO[78] estimated that worldwide over 1 billion people were undernourished, while a report of the United States Department of Agriculture (USDA[79]) – published in the same month – documented the global share of undernourishment with 833 million. Those differences are even significant on regional level. While USDA estimated 379[80] million undernourished people in Asia, the FAO measured 642[81] million. Data inconsistencies are not just a problem across agencies, they even occur within reports of one single agent. For example, the WIR 2014 shows that in 2012 developing economies received US$729 billion of FDI, but one year later the same agent reduces the number to US$639 billion and while the FAO report from 2013[82] demonstrates that between 1990-1992 worldwide more than one billion people were undernourished, two years prior the same agent estimated the number with 848.4 million.

The following sections show some of the findings several stakeholders present after investigating the impact of FDI on the target economy. The results are divided into sector-specific findings, due to the fact that "*the benefits of FDI vary greatly across sectors by examining the effect of foreign direct investment on growth in the primary, manufacturing, and services sectors*" (Alfaro, 2003: abstract).

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78 FAO, More people than ever are victims of hunger (2009); accessed 20 October 2015 at http://www.fao.org/fileadmin/user_upload/newsroom/docs/Press%20release%20june-en.pdf

79 http://www.ers.usda.gov/media/155651/gfa20_1_.pdf

80 S. Shapouri et al., (2009) Food Security Assessment, 2008-9 Outlook GFA-20 (USDA Economic Research Service, Washington, DC)

81 FAO, More people than ever are victims of hunger (2009); accessed 20 October 2015 at http://www.fao.org/fileadmin/user_upload/newsroom/docs/Press%20release%20june-en.pdf

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6.5.1 FDI in the primary sector

Some cross-national empirical studies (e.g. Alfaro, 2003; Aykut and Sayek, 2007) showed that FDI in the primary sector of developing countries predominantly hurts economic growth in the target economy. Other studies also (e.g. Clapp, 1998, 2003; Mihalache-O'Keefe and Li, 2011; Djokoto, 2012) demonstrate that FDI in this sector is rather detrimental for the target nation's food security, especially when it flows into agricultural production.

Several stakeholders have observed that foreign investors introduce chemical-dependent technologies in the agricultural sector of developing countries in order to raise harvest outputs. In some cases these chemical substances are even banned in many developed countries with strict environmental laws, yet governments in developing economies grant foreign investors the right to use them, despite the fact that they have negative long-term effects for the environment. The chemicals poison the soil and prevent local small-scale farmers from growing food or feeding their livestock. In addition to land degradation, toxic chemicals seep into the groundwater and poison vital water sources that are needed by the local population to drink, irrigate their farm or feed their livestock (Pimental and Levitan, 1988; Frey, 1995; Magdoff, Foster and Buttel, 2000; Altieri, 2000; Shiva and Bedi, 2002; Jorgenson 2007; Mihalache-O'Keef and Li, 2011). Local small-scale farmers, of whom the majority is usually poor, on the other hand, cultivate their land in an environmentally friendly way, since they have limited economic access to chemical fertilizers and pesticides. While these organic and sustainable farming methods result in lower crop yields compared to FDI competitors, the soil and water resources are not negatively affected and can be used for cultivation for a longer timeframe.

The introduction of unsustainable substances into developing economies can be perceived as an exploitation of developing countries and displays the power structure between developed and developing nations. Foreign investors from food

secure developed economies introduce unsustainable farming methods into the food insecure target economy, negatively affecting their natural resources and preventing the local population from growing food themselves in the long-run, since the soil will be irreversibly affected and become unsuitable for further cultivation.

Even if foreign investors increase yields, food security for the local population is not guaranteed. Net food import countries like Saudia Arabia[83] for example, announced they would stop wheat production by 2016 completely, after trying to become self-sufficient for the past 30 years. The water scarce kingdom exhausted many of its depleting non-renewable fossil water sources, leading to a re-evaluation of their food security strategy. Since 2008 desert states of the Gulf started investing heavily in foreign farmland with the single purpose to grow food overseas and import it back (Woertz et al., 2008; Woertz, 2009; Cotula et al., 2009; reuters, 2009; Smith and Häberli, 2012; Muhammad, 2014). Other reports and studies also point out that land acquisition deals between foreign investors and governments of developing countries are not just limited to soil, they often include vital water resources. When a Saudi Arabian private entrepreneur invested in Ethiopian farmland, the investor additionally obtained exclusive access to parts of the Alwero river. The river was ultimately diverted to irrigate the plantation; robbing thousands of Ethiopians from the vital resource which they need to cook, drink, clean and most importantly irrigate their own small-scale farms (GRAIN 2012; ejatlas & farmland, 2013; reuters, 2014).

Despite the fact that some development organizations like the FAO advocate for FDI in the primary sector of food insecure developing countries in order to trigger or accelerate economic growth, they also detect and publish negative

[83] According to the World Bank is Saudi Arabia a high income economy (http://data.worldbank.org/country/saudi-arabia). Despite its access to the red sea and persian gulf, Saudi Arabia does not have any permanent rivers or lakes and very little rainfall throughout the year. Water is scarce and due to Saudi-Arabia's rapid population growth, demand for water is rising (source: www.saudiembassy.net). In 1960 Saudi Arabia had a population of 4 million, in 2013 it had almost 29 million (source: World Bank 2013).

ramifications caused by foreign investors. The FAO (2014) for example, warned that local communities often lose their land and access to other vital natural resources when foreign investors engage in primary sector FDI. In case the affected communities do not receive any sufficient compensation in return, they fall into poverty and food insecurity since the land was usually used to grow food in order to ensure a minimum degree of self-sufficiency or as a source of income (FAO, 2014). Gerlach and Liu (2010) and Schoneveld et al. (2010) point out that local communities in developing countries are widely ignored while their own governments alienates their livelihood to a foreign investor. Oxfam (2011) reported that one land deal in Uganda displaced more than 22,000 people, without providing compensation or resettlement (ibid.).

These findings primarily reassert the dependency theory. The identified profiteers of FDI in this sector are mainly foreign investors. Food insecure people lose their land without receiving any compensation. They furthermore lose access to vital natural resources such as rivers, lakes and fertile soil which are necessary components for food insecure people in order to maintain a certain level of food security. The loss of agricultural land prevents farmers to grow food and to sell these items on the market which inevitably leads to poverty. Displacement can also result in a loss of income for pastoralist, if they cannot find equally suitable land for their livestock, they might lose their livelihood.

Further studies also discovered that FDI in the primary sector does not lead to any positive external spillovers in the target economy. They could not confirm any technology- or knowledge transfer from foreign investors to local small-scale farmers, neither could they attest increased access to markets (Hirschman, 1958; Alfaro, 2003; Aykut and Sayek, 2007). They also found no evidence for increased economic growth induced by FDI in the primary sector (Samatar, 1993; Alfaro, 2003; Aykut and Sayek, 2007). Primary-sector investments in developing countries also do not contribute and sometimes even hinder development of

human-capital[84]. Children or unskilled workers who receive little to no training are the main source of labor in the primary sector. Samatar (1993) observed that mostly children between age 8-15 worked on Somalia's banana plants, and therefore preventing them to receive any schooling. Without schooling or training the children and workers can not enhance their personal human capital which might translate to higher wages by becoming an indispensible asset for their employer or transitioning to other sectors with higher salaries. In addition, due to a labor surplus in this sector, foreign investors have bargaining power over wages, which remain very low and are barely sufficient to buy a loaf of bread (Samatar, 1993; Echánove and Steffen, 2005; Mihalache-O'Keef and Li, 2011).

6.5.2 FDI in the secondary sector

In contrast to FDI in primary, foreign investments in the secondary sector are found to be advantageous for the target economy. Empirical studies attest a positive correlation of FDI on economic growth in the manufacturing sector. FDI in this sector creates new jobs, increases wages, enhances human capital and leads to positive spillover effects – such as upscaled access to the global market, knowledge and technology transfer (Alfaro, 2003; Aykut and Sayek, 2007; Wang, 2009; Walfure and Nurudeen, 2010; Mihalache-O'Keef and Li, 2011; Djokoto, 2012; Fauzel et al., 2015). Altogether do these effects "*translate in improvements in food production*" in the target economy (Mihalache-O'Keef, 2013: 9). Djokoto (2012) found that export of manufactured food items in Ghana increased national food security in the short run. One explanation for this positive effect in terms of increasing local food security is the disposal of food which does not meet export standards and is therefore disposed on the national market.

[84] According to the economist Theodore W. Schultz is human capital is far more important for economic growth than technology (Schultz 1981 - Investing in People The Economics of Population Quality University of Chicago Press, 1981..). After World War II., much of the equipment and industrial sector in Germany was destroyed, what remained, however, was the human capital who used their knowledge with the help of the Marshall Plan to build up an even more productive and efficient economy in a considerably short time span.

Studies that used disaggregated, sector-specific data to analyze the impact of FDI, observed that only FDI in the secondary sector contributes to significant positive growth effects in the target economy (Alfaro, 2003; Aykut and Sayek, 2007; Chakraborty and Nunnenkamp, 2008; Mihalache-O'Keef and Li, 2011). However, Masron et al. (2012) found that FDI in high-tech and high-capital oriented industry branches lead to a crowding-out phenomenon. FDI receiving firms increase their performance and outperform their domestic counterparts, leaving them with no other option than exit (Masron et al., 2012).

Results of how FDI in this sector impacts economic growth or food security in the target economy are not unanimous. Some studies conducted in developed countries confirm increased productivity and economic growth (Haskel et al., 2002; Keller and Yeaple, 2003), while studies in developing economies show mixed results. Blomstrom (1986), Kokko (1996) and Blomstrom and Sjoholm (1999) for example found that developing countries were able to increase their productivity due to FDI induced technology-spillovers, and other studies have detected negative spillover effects such as crowding out of local competitors (Haddad and Harrison, 1993; Aitken and Harrison, 1999; Konings, 2001).

6.5.3 FDI in the tertiary sector

Kirkegaard (2012) points out that in terms of aggregated inflows, low-income countries receive significantly less FDI for the service sector than more advanced economies. However, he sees significant potential for those economies to attract higher shares of FDI in the future, since they "*offer sizable opportunities for foreign […] investors*" (Kirkegaard, 2012: 13).

The diversity in this sector makes it extremely complicated to investigate the impact of FDI on food security. The bandwidth of employees in this sector ranges from highly skilled and financially secure bankers, lawyers and doctors to poorly educated waiters or street vendors with low wages.

Slimane et al. (2015) measured that FDI in the tertiary sector has negative spillover effects on agricultural production in the target economy and therefore reduces food security (ibid.). FDI in this sector creates new jobs in cities with higher wages than in rural areas, which triggers a migration effect of rural laborers. Former landowners and workers who lost their livelihood to foreign investors migrate to urban areas in hope to find a new job (Evans and Timberlake, 1980; Slimane et al., 2015). This development leads to an increased demand of food and living space in cities, resulting in higher food and rental prices. However, migrants are often unable to find a job in the service sector, leaving them either without money for food or rent. Even if they are fortunate enough to find a job in the tertiary sector, their wages are usually low and leave them food insecure, since the exponential growth of people looking for work in this sector outweighs the number of available jobs. Companies are then in a position to dictate salaries and hire employees who work for a minimum wage (Evans and Timberlake, 1980; Mihalache-O'Keefe and Li, 2011). The effect has probably even caused an increase of food and rental prices in the area, since demand is expectedly outmatching availability. In case of an additional economic crises the migration effect may even exacerbate national food insecurity. Poor people in developing countries already invest more than 50 per cent of their income on food, and their financial resources will not allow them to cope with further price increases. As already mentioned, the latest crisis has already put an additional 44 million people worldwide into poverty (World Bank, 2014), contributing to food insecurity.

However, Chakraborty and Nunnenkamp (2008) add for consideration that foreign capital in the tertiary sector has the potential to increase the overall economic performance of the target economy. It can further diversify the sector, increase competition, enhance the quality and grant increased access to various areas. The quality improvement in education- and health care system can have a positive effect for the population of the target economy. Transportation might become

accessible to more people, the credit system more dependable and financial transactions more secure. Additionally, FDI in tertiary also generates know-how spillover and contributes to economic development in the target economy. Foreign retailers in Brazil, Poland and Thailand for example increased the level of productivity which resulted in lower product prices and therefore enhanced consumption (Palmade and Anayiotos, 2005; Chakraborty and Nunnenkamp, 2008; Mihalache-O'Keef and Li, 2011).

6.5.4 Conclusion

Policymakers in food insecure developing countries have to analyze various results and proposals of different stakeholders. Published figures between agencies are rarely consistent, and even within one agency, the figures change depending on the year of publication. Additionally, studies and reports from other stakeholders also present conflicting results and suggestions. However, considering the multitude of factors (e.g. insufficient soil, lack of social and/or economic access to food, natural conditions, etc.) who have a direct effect on food insecurity, the amount of various actors (e.g. researchers, scientists, media) who evaluate the impact of FDI towards economic growth or food security and the stakeholders (e.g. national governments, MNC's, TNC's, privat investors, etc.) who directly influence the outcome of FDI in regard to economic growth and food security in the target economy, it is not surprising that different reports promulgate confliciting conclusions and suggestions. As Rein and Schön (1996) mention, is every actor significantly influenced by their cultural, social, geographical and political heritage and everyone perceives, evaluates and analyzes a problem differently. This leads to a presentation of conflicting results and proposals, since every actor views a unified world from a different perspective and applies incommensurable theories and methods in order to evaluate and analyze the problem (Rein and Schön, 1996). However, these facts make it difficult for policymakers to create feasible policies in order to ensure that FDI leads to food security in a food insecure target economy.

For frame-analysts and policymakers, it is of particular importance, to identify the starting conditions of the economy where the study was conducted. Economic, social, legal and natural starting conditions differ from country to country. If studies for example show, that new technologies in the agricultural sector of developed countries lead to an increase of food production, policymakers in food insecure developing economies have to take into account, that these nations are already food secure and the majority of the population in these countries is not employed in the primary sector. The increased use of machinery in the agricultural sector can lead to a discharge of employees in this sector, due to the fact that manual work is now finished off by machines. In developing countries, where the majority of people are employed in the primary sector, a replacement by machines could result in a permanent loss of livelihood, if the national economy is not developed enough to offer jobs in other sectors. In addition, the national government or local companies have to ensure that the human capital of the population is sufficient to be able to execute tasks in a different sector. If policymakers in food insecure developing countries take the outcome of studies in economies with severely different starting conditions as a basis in order to create FDI related food security policies, they may design policies with unforseen detrimental effects for their own nations food security (Rein and Schön 1996).

Rein and Schön (1996) argue that a frame analyst or policy practitioner have to analyze the problem frame. They have to be aware that the problem might be framed by several stakeholders in multiple discourse forums and the problem itself be influenced by a plethora of diverse factors. However, in order to analyze if the promulgated solution approach of FDI is suitable to dissolve the problem of food insecurity, the following sections try to answer the guiding research questions from the position of a policy practitioner. Putting the theory into practice.

6.6 FDI and economic growth

This sub-section addresses the first research question - Can FDI trigger and/or accelerate economic growth in the host nation? To what effect?

6.6.1 Depending on starting conditions in the target economy

In a country with a well developed physical infrastructure, where people, information and goods can be moved very easily, the economy is more likely to record faster growth than one where the physical infrastructure is only partially available. If investors have to invest in the basic infrastructure of an economy in advance, before they are able to realize their initial project, the effects of economic growth might take longer to materialize. Even if these inputs only contribute to slow economic growth in the beginning, they probably result in faster economic growth in the long-run, since new investors profit from these pre-investments and have lower costs when entering the economy. The same principle applies when FDI positively influences other areas of the target economy. The gradual enhancement of human capital induced by foreign investors for example, might result in slow growth in the beginning, but as human capital diffuses throughout the entire economy, the effects might multiply and contribute to significant growth.

6.6.2 Depending on the motivation of investor and type of investment

Hecock and Jepsen (2014) argue that there are "*...major differences between agriculture, forestry, and mining, and firms associated with these industries are likely to exhibit distinct behavior. The same is true for very different kinds of manufacturing in the secondary sector and the especially wide variety of activities that comprise services*" (ibid.,: 427).

Companies which enter a country for the purpose of resource extraction will more likely contribute to less and slower economic growth, than firms who seek new markets or want to take advantage of low labor costs. Especially when foreign investors seek to exploit weak governance, economic growth in the target economy will most likely be very weak. A Swiss based company, for example, owns copper producing subsidiaries in Zambia[85]. Those subsidiaries export copper back to its mother company in Switzerland below market price. Once arrived in Switzerland, the company sells the copper at world market price, gaining all financial benefits by netting the price difference as profits in Switzerland, whilst reporting losses in Zambia (UNDP, 2013). Conversely, Zambia will not receive any revenues or taxes, since the foreign company exported the product below market price and recorded losses and in case the natural resource degrades the investor will probably withdraw from the country and invests in another country. Economies that predominantly depend on one resource or can only offer a narrow range of products to the international market, must seek to diversify their economy in order to achieve sustainable economic growth. The dependence on one product makes food insecure developing countries vulnerable to unforseen economic changes.

Market-seeking FDI on the other hand is a long-term engagement in the target economy. The investor is determined to produce and sell the product to the local population and when they invest in developing economies with high levels of poverty, the investor is likely to reduce the income inequality by creating new jobs in order to enable the target population to purchase the product.

6.6.3 Depending on the sector

To what extent FDI contributes to economic growth also depends on the sector. The fact that most studies have found that FDI in the primary sector rarely brings positive effects for the target economy and is usually detrimental in terms of food

[85] Zambia's prevalence of undernourishment in the total population is very high (above 35 per cent) (source: WFP: Hunger Map 2015)

security for the majority of the population, it suggests that FDI in this sector only contributes slightly to economic growth. Investors in the primary sector tend to mainly export the products or materials and in case they are exported below market price, the revenues for the target economy are very low. In addition, foreign investors in the primary sector usually do not enhance the human capital of their employees which also results in slow economic growth in the long-run. Nevertheless, investors in the primary sector induce a certain degree of economic growth by providing jobs to people who would be unemployed otherwise, and contribute to an increase of median income in the target economy.

According to many studies, FDI in the secondary sector, seems to be much more beneficial for the target economy and lead to faster growth. By not only enhancing human capital, but also increasing productivity in the sector, a positive impact on economic growth is more likely to materialize in a very short time and continue over a longer period.

If FDI in the tertiary sector is invested into areas which benefits a large part of the population, it also has the potential to affect growth in the target economy significantly, even if it takes time in the beginning until these effects trigger growth. Investments in the transport system, for example, can permanently improve the physical connectivity of people in the target economy. The expansion of the transport system can help poor people in rural areas to get access to jobs. Furthermore, if FDI in the tertiary sector is directed towards the economies education- or health system and the majority of the population benefit from these investments, depending on whether they have economic or physical access, economic growth might arise after some time with stark increase in the future. If the majority of poor people in developing countries receive education, and above all stay healthy, FDI in the tertiary sector can clearly have positive ramifications in terms of economic growth. Educated and healthy people have a greater impact on economic growth than people who are uneducated and not in a good physical condition to work. However, if only a small proportion of the total population

benefits from the secondary and tertiary FDI, economic growth will certainly adjust much more slowly and proceed in slow pace.

6.7 FDI and Food Security

This sub-section addresses the second research question - Is FDI capable of contributing to food security in the food insecure developing country? Under what conditions?

6.7.1 Depending on the motivation of investor and type of investment

Whether or not FDI positively contributes to food security in food insecure developing countries depends on whether the food insecure people benefit from the inflow. For example, when FDI in the land sector leads to displacement of people with no subsequent sufficient compensation in form of paid jobs or resettlement on land with similar conditions, FDI obviously does not have a positive impact on their immediate food security, but if the investor intents to grow food with the purpose to sell it on the local market, the increased availability might result in lower food prices, which could enable more people to purchase food and become food secure. Even though current reports and studies on FDI in agriculture display more negative impacts on food security in the developing target economy, positive effects might materialize in the future. Economic, environmental and political changes cannot be foreseen and make it difficult to analyze future outcomes.

6.7.2 Depending on the sector

For FDI to have a positive impact on food security in food insecure developing countries it is critical that the impacts of FDI reach the most vulnerable. FDI in the primary sector seems to be less beneficial in terms of reaching food security for the most vulnerable groups. Studies show that FDI in the primary sector often

leads to displacement and in many occasions the affected communities receive no compensation for their loss. In cases where FDI in the secondary and tertiary sector trigger more negative than positive effects, it will potentially lead to a deterioration in food security in the food insecure target economy. When FDI in the secondary or tertiary sector, for example, leads to migration, demand for food in one area will increase and in case of low availability and high food prices, food insecurity will most like increase as less people have economic access. The abundance of workers in that area might also have adverse effects of wages with a dampening of the wage due to an increased supply of workers. In order to achieve food security in food insecure developing countries it is imperative that FDI inflow in any sector increases domestic real wages to the extent where people are able to buy sufficient amounts of food. In particular, the poor and hungry have to be the main beneficiaries of the inflow to establish national food security.

Nonetheless, increased productivity induced by foreign investors in primary and secondary food segments can also contribute to food security if it is ensured that the products are destined to the domestic market and the prices do not exceed poor people's income. However, increased availability and affordable prices in the food insecure target economy do not automatically result in food security. The national government must ensure that everyone in the country benefits from the surplus. If the national government does not channel FDI to the most important areas of the country, increased availability may not result in increased access and the gap between rich and poor can increase. The fact that more food is available on the market does not necessarily ensure food security. In case the physical infrastructure of the country is still insufficient to ensure a promptly transfer of food to the food insecure population without great losses, even increased availability will not help the country to become food secure.

6.7.3 Depending on environmental repercussions

It also depends on whether the foreign investor leads to a major or long-term

degradation of the environment in the host country. If FDI, especially in the primary sector, has negative impacts on the local biosystem by, for example, destroying forests and negatively affecting soil or water quality through the introduction of toxins, FDI can lead to a significant increase in food insecurity. FDI in the secondary sector can also have negative environmental impacts, by contributing to increased air-, water-, or soil pollution. Moreover, increased production may add more waste, which has an adverse effect on the environment.

A common feature of developing countries is the significance of the agricultural sector in terms of the proportion of the population employed in that sector. Negative impacts on the environment therefore affect a greater number of, generally poorer, people and could be detrimental for their food security. In case soil or water are polluted to the degree that they can no longer be used to grow food, it can be expected that these conditions lead to an aggravation of the food situation in the target economy.

Governments of food insecure developing countries must ensure that investments do not contribute to further national food insecurity. Nevertheless, developing economies are advised to exercise caution when it comes to accepting FDI. They have to weigh whether FDI will have a positive impact on national food security and should introduce FDI policies that specifically seek to improve food security. As Mihalache-O'Keefe and Li (2011) cite, not every investment is beneficial (ibid.). However, theoretically, the same standards apply for national investment.

6.8 FDI Policy

This sub-section addresses the third research question - What is the impact of FDI policies on food security in food insecure countries?

6.8.1 National FDI policies

From the national FDI policies that are accessible, it seems that they do not

directly prioritize food security. Recently, the Indian government released their FDI policy and their main objective is "*to attract and promote foreign direct investment in order to supplement domestic capital, technology and skills, for accelerated economic growth*" (India, 2015: 1), but even if this policy is not explicitly aligned towards food security, the policy may still contribute to food security if the most vulnerable section of the population benefits from the positive effects which might occur. When policies are designed to attract FDI in non-food sectors, positive ramifications from this objective may still translate to food security.

When countries allow foreign investors to develop their physical infrastructure, food security may be achieved through better connectivity. Entrepreneurs in rural areas are who are not connected to any market, profit from FDI in infrastructure since it provides them with improved access. Food or non-food items can now be transported from rural to urban areas or *vice versa*, resulting in economic growth and food security. When rural farmers have the opportunity to access markets, they can increase national food availability and their income due to higher coverage. In addition, market access may allow rural entrepreneurs to acquire technologies that leads to increased production.

6.8.2 National sectoral food security policies

Besides national FDI policies which are not directly targeted at food security, governments have the option to prevent further national food insecurity by implementing food security policies. South Africa for example, created a strategic plan to develop a modest biofuel sector, but in order not to exacerbate the countries level of food insecurity, the government issued a policy which prohibited the use of maize for bioethanol production as long as food inflation and underutilization of arable land threatens food security for food insecure households (South Africa, 2007). "*First, the threats need to be controlled through a code of conduct for host governments and foreign investors. Second, the*

opportunities need to be facilitated by appropriate policies in the countries that are the targets of these foreign direct investments" (IFPRI, 2009). The way national food security policies are constructed have a significant impact on the outcome of FDI.

6.8.3 International Agencies

There are several international organizations that present FDI and food security guidelines to limit possible negative effects on national food security caused through FDI. These guidelines, however, are neither mandatory for the investors nor national governments. They are purely recommendations in order to remind stakeholders of negative impacts. When global biofuel production increased from less than 20 billion litres per year in 2001 to over 100 billion litres per year in 2011, the Committee on World Food Security (CFS) recommended governments to review their biofuel policies. In order not to endanger food security or even exacerbate food insecurity, biofuels should only be produced in countries, "*where it is socially, economically and environmentally feasible to do so*" (CFS, 2013: 8).

However, there are also international agents that bind their 'recommendations' to conditions and unintentionally contribute to food insecurity. As the IMF and World Bank introduced their 'Structural Adjustment Program' (SAP) they encouraged governments in developing countries to gradually reduce import tariffs in order receive futher loans and debt relief. These measure however, led to increased poverty and further food insecurity in Indonesia. Before Indonesia initiated the SAP the rice sector was extremely protected against imports. National rice production increased by nearly 150 per cent between 1968 and 1989 which resulted in accomplished self-sufficiency in rice in 1984. After the government followed the recommended actions of the IMF and World Bank, and reduced import tariffs on rice, cheap imports inevitably increased national poverty and food insecurity, since a large part of the population was directly or indirectly connected to rice production. Farmers in Indonesia had higher production costs

and could not compete against cheap rice import. Only after the government reversed the strategy and reinstated protection policies, self-sufficiency in rice could once again be reiterate and national poverty rates and insecurity in food reduced (UN, 2009). In case food items are cheaper on the international market, the national government must estimate if import is beneficial or rather harmful for the majority of the population. If the majority of people is employed in the food production segment and cheap food imports results in high unemployment rates, then national policies may have to counteract this development. Indonesia for example, had to protect their rice farmers against cheap rice imports.

6.8.4 Conclusion

Governments of food insecure developing countries must ensure that investments do not contribute to further national food insecurity. However, international food security policies are also important since we live in an interdependent world. In order not to endager food security and exacerbate food insecurity in food insecure countries, governments and investors should only engage in investments where they are socially, economically and environmentally feasible. International policies have to ensure that powerful investors from developed nations do not take advantage of weak governances in developing countries and exploit lax environmental-, porperty- and labor laws in the target economy. Furthermore there is need for reforms in national policies in countries where social and environmental safeguards are weak. Empowerment of local landholders and marginalized groups – poor, women, children – is a key measure to prevent FDI having a negative impact on food security. However, policies alone are not sufficient. The authority of the state must ensure that legislation is put into practice (Cotula, 2011). The way national policies are constructed have a significant impact on the outcome of investment, may it be domestic or foreign. However, international food security policies are also important since we live in an interdependent world. In order not to endager food security and exacerbate food insecurity in food insecure countries, governments and investors should only

engage in investments where they are socially, economically and environmentally feasible.

7. Conclusion and Recommendations

7.1 Conclusions

The concept of food security has developed over the years and was decisively shaped by international agencies. It was recognized that food insecurity is not a problem of insufficient availability, but that food insecure people lack physical, social or economic access to food. It is apparent that food insecurity is primarily centered in developing economies, where either the government or citizens lack financial capital in order to initiate operational measures to trigger or accelerate an economic development process. International agencies therefore highlight the importance of FDI for food insecure developing countries. FDI is considered a viable means to fill the financial gap with positive implications on economic growth, which is perceived a key prerequisite to reduce national poverty and achieve food security.

In recent years, more and more scientists and researchers have evaluated and observed the direct and indirect ramifications of FDI on economic growth in the target economy. The reports were predominantly influenced by the two polarizing theoretical foundations of modernization and dependence. One side argues that countries with insufficient equity are in no position to generate economic growth and therefore highlight the positive outcomes of FDI. The opposition, however, focus on the negative impacts of FDI on the target economy and brings forth arguments against it. The selected approach results in studies presenting conflicting conclusions. Yet, both theories seem to omit the motivations of investors and the different types of investments when analyzing the impact of FDI on economic growth. While the theories either project positive or negative outcomes of FDI in developing economies, empirical research is significantly influenced by these theories and tries to find evidence to support of refute one of them. However, the motives to enter into an economy and the type of investment may have a significant influence on how FDI affects the direction of economic

growth in developing countries.

At first, studies and reports limited their focus of FDI on economic growth in the target economy until it was recognized that even if FDI contributes to economic growth, not everyone in the society benefits from this progress. Therefore, more and more studies that analyze the impact of FDI in the target economy focus on microeconomic variables such as food security. Despite the fact presented results and suggested recommendations are not only numerous but in some cases even contradictory, they still instigate a further debate across all systems.

7.2 Recommendations

While some studies find that FDI has a positive impact on economic growth in the target economy, others have been unable to confirm these findings. One reason for these differing results is mainly caused by the research design. Görg and Strobl (2001) found that empirical studies investigating the correlation of FDI and productivity spillovers present positive spillover effects when applying cross-sectional studies, while panel-data studies found negative effects (Görg and Strobl, 2001; Görg and Greenaway, 2003). Future studies should further avoid the use of aggregated cross-national datasets in order to investigate the impact of FDI on the target economy. By utilizing aggregated data of economies in different stages of development, the researchers risk to present incorrect results, since starting conditions between developed and developing economies are significantly different and positive ramifications of FDI in one economy do not necessarily have the same effect in economies at different development stages. The analysis of aggregated intersectoral FDI data in one economy can also present erroneous results. If the impact of FDI is analyzed with intersectorial data, it can lead to skewed conclusions, since FDI inflow in one sector may have positive impacts on the target economy, while the inflow in other sectors causes negative effects. It would also be of particular importance to expand future FDI and food security research by including political systems. Politics and politicians in food insecure

developing countries have arguably a significant influence on how FDI affects national food security. If this variable gets ignored, presented results may draw wrong conclusions.

For national policy makers in food insecure countries it might be beneficial to align FDI policies on food security. They have to ensure that FDI does not lead to an exacerbation of national food insecurity. While having separate FDI and food security policies, food insecure developing countries run at risk to favor one policy over the other with possibly detrimental outcomes for the food insecure population. By including food security specifications into the FDI policy, foreign investors are informed that their investment must not exacerbate national food insecurity and if it does they can be held accountable for any damage.

The different agencies which measure food security on various levels should also try to syntonize their methodology in order to avoid presenting significantly different results. Policymaker in food insecure developing countries are decisively influenced by the published results, but if every agency values different indicators to measure food security, it is almost impossible for national policymakers to implement feasible policies.

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Appendix – Food Security Metrics

TABLE 1 Food security metrics, their measured domains, and the purposes for which they are commonly used

Metric	Measurement	Scale	Domains/loci measured	Date source	Purpose(s)	Recall period
Prevalence of undernourishment	Calculates food availability using nationally aggregated food supply and food utilization data	National	Physical availability or access	Food balance sheets	Monitor hunger Millennium Development Goal Provide cross-national comparisons Facilitate global and regional governance of food security Serve as advocacy tool	1 y
Share of food expenditure by the poor[1]	Average share of total expenditures spent on food by households belonging to the lowest income quintile	National	Economic access	HCESs	Provide cross-national comparisons Facilitate global and regional governance of food security Serve as advocacy tool	Variable
Relative dietary supply index[1]	Ratio of the dietary energy supply in the country (per capita), normalized by the country's average dietary energy requirement (i.e., the average caloric needs of the population based on age, sex, and height distributions)	National	Physical availability or access	Food balance sheets	Provide cross-national comparisons Facilitate global and regional governance of food security Serve as advocacy tool	1 y
Domestic food price volatility[1]	Index of observed variability in the annual food price level index	National	Economic access	FAO/ILO food price data	Provide cross-national comparisons Facilitate global and regional governance of food security Serve as advocacy tool	1 y
GHI	Ranks countries on a 100-point scale using 3 equally weighted indicators: *1*) undernourishment; *2*) child underweight; and *3*) child mortality	National	Physical availability or access Nutritional status	Food balance sheets WHO Global Database on Child Growth and Malnutrition Demographic and Health Survey data Multiple Indicator Cluster Survey data	Compare differences in hunger across countries	Variable

(Continued)

TABLE 1 (*Continued*)

Metric	Measurement	Scale	Domains/loci measured	Date source	Purpose(s)	Recall period
GFSI	Index of 30 indicators within 3 domains of food security: affordability (6 indicators), availability (10), and quality and safety (14)	National	Physical availability or access Economic access Food quality Food quantity Food safety	Quantitative (e.g., food consumption as proportion of total household expenditure, micronutrient availability) Qualitative (e.g., government commitment to increasing nutritional standards, existence of adequate crop storage facilities) Expert consensus	Provide cross-national comparisons of food security status, determinants, and outcomes	Variable
FEWS NET	Monitors a variety of information including data on long-term and real-time satellite rainfall records, the NDVI, temperature, agricultural production, prices, trade, economic shocks, political instability, and local livelihoods	National Regional	Physical availability or access Economic access	Various (e.g., weather, climate, agriculture production, prices, trade, political stability, economic shocks)	Serve as early warning system (scenario development to forecast food emergencies 6–12 mo in advance) Assist governments and food relief agencies in planning for food emergencies Monitor changes over time via monthly reports on current and projected food insecurity	Variable
CFSVAs	Combines secondary data analyses with collection of primary data from 13 core modules to assess food security status and examine underlying causes of vulnerability	National Regional	Physical availability or access Economic access Food quantity	Household surveys Secondary data	Assess baseline food security status of country or region to inform intervention planning Examine underlying causes of food vulnerability	Variable
HCESs	Collect data on all foods acquired by household, including food purchases, foods from own production and foods received in kind; often limited to monetary value of these foods	National Regional Household	Economic access Food quantity Food quality	HCESs	Measure income, consumer price indices, socioeconomic status, and food and non-food expenditures Provide complementary data to food balance sheet data to facilitate cross-national comparisons and subnational analyses	Variable (e.g., 1 wk, 1 mo, 12 mo)

(Continued)

TABLE 1 (*Continued*)

Metric	Measurement	Scale	Domains/loci measured	Date source	Purpose(s)	Recall period
FCS	FCS = $a_1x_1 + a_2x_2 + \ldots + a_8x_8$, where 1…8 = food group, a = frequency (7-d recall), x = weight. Weight: meat, milk, and fish = 4, pulses = 3, staples = 2, vegetables and fruits = 1, sugar and oil = 0.5). Cut-off values: poor FS = 0–21, borderline FS = 21.5–35, acceptable FS = >35.	National Regional Household	Food quality	CFSVAs WFP Emergency Food Security Assessments Household surveys	Establish prevalence of food insecurity Monitor changes in food security Assist in determining food needs to calculate food rations	7 d
HDDS	Sums equally weighted response data on the consumption of 12 food groups; score obtained from 0 to 12	National Regional Household	Food quality	Household surveys	Serve as a FS impact indicator for USAID Title II funded programs Help establish prevalence of FS Assess household-level dietary diversity Assess changes in DD/FS over time	24 h
CSI	Locally adapted list of coping strategies and the frequency of their use is generated through focus group discussions with stakeholders; severity weightings are assigned to each strategy	National Regional Household	Economic access Food quantity Food quality	Focus group interviews and discussions	Target food aid and monitor its impact Identify vulnerable households (original) Facilitate comparisons across contexts (comparative) Estimate long-term changes in FS	30 d
HEA	Broadly assesses livelihoods using geographic patterns of shared livelihood strategies, and wealth and assets	Regional Household	Physical availability or access Economic access	Rapid rural appraisal techniques (e.g., semistructured interviews, focus group discussions) Review of various secondary data sources	Assess poverty and livelihood vulnerabilities Identify appropriate, context-specific interventions	Variable
HFIAS	Sums responses to 9 questions related to four domains of food security including 4-level frequency response questions; a score from 0 to 27 is obtained and may be categorized into a 4-level variable	Regional Household	Anxiety Food preferences Economic access Food quantity	Household surveys	Assess FS status within regions or households Monitor and evaluate the impact of FS interventions	30 d

(Continued)

TABLE 1 (*Continued*)

Metric	Measurement	Scale	Domains/loci measured	Date source	Purpose(s)	Recall period
HHS	Sums responses from three questions related to hunger and lack of food including 3-level frequency response questions; a score from 0 to 6 is obtained and may be categorized into a 3-level variable	Regional Household	Economic access Food quantity	Household surveys	Assess hunger status within and across contexts Target interventions Monitor and evaluate the impact of interventions on household hunger	30 d
Months inadequate household food provisioning	Sums total number of months in the past year the household did not have enough food to meet the family's needs	Regional Household	Economic access Food quantity	Household surveys	Evaluate impact of interventions to improve food access (e.g., program to improve agricultural production, storage, and household purchasing power) Measure seasonal differences and/or changes in households' abilities to address food vulnerability	12 mo
Anthropometry	Examples include height, recumbent length, weight, MUAC, and skinfold measurements (combined with age and sex data to create anthropometric indices)	National Regional Household Individual	Individual nutritional status	Demographic and Health Survey data Multiple Indicator Cluster Survey data Household surveys	Assess prevalence of malnutrition Identify at-risk populations or individuals Monitor changes in nutritional status over time Evaluate nutritional impact of interventions	N/A

[1] See also an analysis by the National Academy of Sciences examining the strengths and limitations of 3 food security indicators (i.e., prevalence of undernourishment, household consumption and expenditure data, and anthropometry) [Table I 1–1, p. 14 (36)] as well as the suite of FAO food security indicators [Table A2.2, p. 54 (1)]. Part of FAO suite of complementary indicators (1). CFSVA, Comprehensive Food Security and Vulnerability Analysis; CSI, Coping Strategies Index; DD, dietary diversity; FCS, Food Consumption Score; FEWS NET, Famine Early Warning Systems Network; FS, food security; GFSI, Global Food Security Index; HCES, Household Consumption and Expenditure Survey; HDDS, Household Dietary Diversity Score; HEA, Household Economy Approach; HFIAS, Household Food Insecurity Access Scale; MUAC, mid-upper arm circumference; NDVI, Normalized Difference Vegetation Index; USAID, United States Agency for International Development; WFP, World Food Program.