

# China in Zambia:

*Aid, investments and poverty reduction*

Pia Kristine Østvold



Master's thesis  
Department of Political Science  
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# Abstract

In this thesis I examine the extent to which Chinese aid and investments in the agricultural sector reduce poverty in Zambia. I address this topic by focusing on three inter-related sets of questions related to land acquisition, skill and technology transfer and employment generation. Overall my findings suggest that there are both benefits and challenges for the local population arising from China's aid and investments in Zambian agriculture. However, it is difficult to measure the extent of poverty reduction as a result of China's involvement. My findings indicate that China is currently not engaged in any large-scale land acquisitions in Zambia. And China's aid and investments can generally be viewed to help the local population by more efficient use of land and increasing food production, which is positive for poverty reduction. However, Chinese interventions can also increase the vulnerability of small-scale farmers who risks displacement and reduced income from increased competition at the local marketplaces. In terms of skill and technology transfer, Zambia Agricultural Technology Demonstration Center teaches participants new farming techniques, which in turn provides an opportunity to diversify and improve farming practices. There is also some transfer of skill and technology to the local population at Chinese farms and in cotton production, but not all the techniques are useful for Zambian small-scale farmers. The final question involves employment and my findings show that employment can provide rural households with additional income, but there are complaints about poor working conditions and low salaries.



# Acknowledgements

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## **Abbreviations**

AATF: African Agricultural Technology Foundation

AGRA: Alliance for a Green Revolution in Africa

BRIC: Brazil, Russia, India, China

CSFAC: China State Farm and Agribusiness Corporation

CSO: Civil Society Organizations

DAC: Development Assistance Committee

DFID: Department for International Development

FAO: Food and Agriculture Organization

FOCAC: Forum on China Africa Cooperation

FSRP: Food Security Research Project

GDP: Gross Domestic Product

IRIN: Integrated Regional Information Networks

IIED: International Institute for Environment and Development

JICA: Japan International Cooperation Agency

LED: Local Economic Development

MDG: Millennium Development Goals

NGO: Non-Governmental Organization

ODA: Official Development Assistance

OECD: Organization for Economic Co-operation and Development

SNDP: Sixth National Development Plan

SOE: State-Owned Enterprises

UN: United Nations

UNDP: United Nations Development Programme

UNZA: University of Zambia

ZNFU: Zambia National Farmers Union

# 1 Introduction

In recent years, the Western view on development and foreign aid has been challenged by the so-called “emerging countries” in global politics. These emerging countries – including China, India, Brazil and South Africa – consist of rapidly industrializing countries which seek increased influence in the international arena through their aid and investments. They challenge the conventional aid paradigm by providing alternatives to the traditional aid. The West, however, is often critical of these new donors, especially China, for their interest in exploiting the rich natural resources available in the developing world. They also fear that China’s non-intervention policy will undermine their efforts towards creating good governance in developing countries. China, on the other hand, argues that countries have the right to choose their own development path and that the aid it provides is more effective and efficient.

China’s presence in Africa is on the rise, both in terms of aid and other economic engagement. This creates new opportunities for African countries, but it also leads to questions on how this involvement will affect development and poverty reduction. Much has already been written on China’s growing presence in Africa, but what has not been explicitly focused on is the impact of Chinese aid on poverty reduction (Banik, 2013). In this study, I focus on a single case that can illustrate some of the possible effects of China’s aid and investments. More specifically, I wish to examine the extent to which Chinese aid and investments in the agricultural sector helps reduce poverty in Zambia.

This study aims to shed light on two interrelated issues. First, it explores and analyses the dynamics behind the rise of the Chinese presence in Africa. Second, it goes deeper into the relationship between foreign aid and agricultural development, with the aim of teasing out particularly Chinese characteristics of agricultural aid and investments to Zambia. The aim of the thesis is both descriptive and explanatory. I wish to describe the context of China’s involvement in Zambia as well as explain its impact on poverty reduction.

## 1.1 Background

China has experienced rapid economic growth in recent years, and has lifted millions of its inhabitant out of extreme poverty. One important component of its growth strategy has been

the “Going Global” policy that began in 1995 with the intent of establishing better contact between China and the rest of the world. All over the globe the Chinese involvement increased. Sino-African trade is estimated to have grown from US\$ 4 billion to US\$ 40 billion between 1995 and 2005 (Chidaushe, 2007: 115). In terms of Foreign Direct Investments (FDI) to Africa, China invested US\$ 317.43 million in 2004, while in 2010 the amount had increased to US\$ 2111.99 million (Ministry of Commerce, 2010). As a result of the increased cooperation, a platform for collaboration has been established between China and African nations called the Forum on China-Africa Cooperation (FOCAC). Taylor (2011: 1) writes that “The existence of FOCAC might best be seen as the institutionalization of Sino-African relations at a time of intensified interactions and following a period of exponential growth in such linkages”.

One important area for the Sino-African relations is agriculture. China has always been engaged in agricultural aid and throughout the years it has entered into numerous agricultural agreements and Africa has profited the most from this agriculture assistance (Mahmoud, 2010: 201). More than 40 countries have benefitted from pilot-farms and experimental station built with help from China; 200 cooperation programs in agriculture have been carried out by 2010; and China has sent over 10 000 agro-technicians to Africa (ibid).

However, analyzing China’s relationship with Africa as a whole is too comprehensive. I have, therefore, chosen an in-debt study of a single case. Zambia is a land-locked country in Sub-Saharan Africa that was colonized by Britain in the 1800s and governed as a part of Rhodesia until 1964 (BBC News Africa, 2012). Zambia has a long history of Chinese involvement, with the first aid agreement established in 1967 (Chileshe, 2010: 7). Traditionally bilateral relations between Zambia and China have been among the strongest in the region (Taylor, 2006: 164). Over the years China has established over 35 aid projects in the country, including infrastructural development projects and agricultural initiatives (Chileshe, 2010: 7).

Zambia is a developing country, with high levels of poverty and low life expectancy. In 2011, Zambia was ranked number 163 on the Human Development Index (UNDP, 2013b). In order to deal with the economic difficulties and the high poverty rates, the government produces National Development Plans, with the aim of promoting economic growth and development. One of the prioritized growth areas in the Development Plans is agriculture. According to the Sixth National Development Plan (SNDP, 2011: 108), “Agriculture remains the priority sector in achieving sustainable economic growth and reducing poverty in Zambia”.

I have chosen to focus on China's involvement in Zambia's agricultural sector, since the potential for poverty reduction in this sector is considerable. Moreover, rising global food insecurity is a growing concern, with a phenomenal increase in food prices and corresponding environmental challenges. And Zambia has its fair share of problems related to food production and food security. More than 40 per cent of the children under the age of five were malnourished in 2007,<sup>1</sup> and the problem can be further exacerbated if a combination of drought and other factors further reduces food production and makes it even more difficult for vulnerable groups to access food.

## 1.2 Research questions

The main focus of the study is to examine *the extent to which Chinese aid and investments in the agricultural sector reduce poverty in Zambia*. The study will address this topic by focusing on three inter-related sets of questions.

1. *What are the main characteristics of Chinese land acquisition in Zambia?*
2. *To what extent has the transfer of skills and technologies from China improved farming practices in Zambia?*
3. *How, and to what extent, has China contributed towards creating new employment opportunities and thereby additional income for rural households in Zambia?*

Together these questions can say something about poverty reduction in Zambia, by focusing on improved agricultural production and additional sources of income. In terms of the first question on land acquisition, there is a lot of concern about large-scale land grab by China in Africa. I wish to explore whether this is the case in Zambia and also what the effects of land acquisition might be for the local population. With regards to the second question, China has experienced growth and development in its agricultural sector in recent years. It is, therefore, interesting to examine whether the transfer of skill and technology from China can help improve farming practices in Zambia and possibly increase agricultural production. In terms of the third question, China is accused of hiring mostly Chinese workers and there are

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<sup>1</sup> Prevalence of child malnutrition is the percentage of children under age 5 whose height for age (stunting) is more than two standard deviations below the median for the international reference population ages 0-59 months WORLD BANK. 2013. *Health* [Online]. World Bank. Available: <http://data.worldbank.org/topic/health> [Accessed 08.04 2013]. However, if one looks at the percentage of child malnutrition in terms of weight for age, the number is 14.9 per cent in 2007.

complaints of poor working conditions and low salaries at Chinese companies. I wish to examine if China generates employment in agriculture for the local population and whether this lead to additional income opportunities for rural households.

## **1.3 Methodology**

### **1.3.1 Case study and data collection**

China's increased involvement in Africa raises questions with regard to the consequences of its engagement. In order to answer such questions, I have found it useful to focus on China's activities in a single country. I have, therefore, chosen a case study approach. According to Stake (2000: 436), a case study involves both the process of investigating a case and the product of the investigation. Yin (2003: 13-14) defines a case study as an empirical inquiry that "investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident." While there is available information on China's involvement both in Africa and Zambia, the information is often of a general character and seldom specifically on agriculture and poverty reduction. It is difficult to obtain any reliable data on activities and location of Chinese farms as well as on farmers involved in cotton production and record on income distribution and production patterns are practically non-existent. This prohibits a quantitative assessment of poverty as a result of Chinese involvement. A case study can therefore be useful, since case studies have a natural advantage in research of an explanatory nature (Gerring, 2007: 39). According to Gerring (2007: 41), "It is the very fuzziness of case studies that give them an advantage, for a single-case study allows one to test a multitude of hypotheses in a rough and ready way". The results can then be used to test the relevant hypothesis or theory in other cases. In this thesis I look at different theoretical perspectives in order to shed light on an empirical case. According to Levy's (2008: 4) typology of case studies this can be described as a theory-guided case study. By using the different theories, I hope to get a better understanding as to whether Chinese aid and investments in agriculture contribute to poverty reduction in Zambia.

The pragmatic reasons for choosing this particular case can be found in the next section, where I explain that Zambia is an appropriate case for studying Chinese aid and investments in agriculture. However, there are also strategic reasons for choosing a case. Gerring (2007: 88) writes that a single case is part of a larger universe or population of cases. A case is



chosen from a larger population and “the reasons for this choice hinge upon the way in which it is situated within that population” (ibid: 88-90). The population in this study is Sub-Saharan Africa in which Zambia has several commonalities. The most important similarities, in relation to this study, are the involvement by China in countries throughout Sub-Saharan Africa as well as the commonalities in the countries agricultural sector. However, it is important to remember that Sub-Saharan Africa is also a heterogeneous population and making generalization based on a single case is problematic. Qualitative research is often criticized for its limited scope (Bryman, 2004: 284). It is argued that one cannot generalize to the whole population based on a few cases or on some unstructured interviews conducted in a certain location (ibid). With one case study I cannot make any qualified generalizations to other countries in Sub-Saharan Africa, but it is possible to make tentative generalizations if one takes proper caution. Looking at Chinese aid and investments in Zambian agriculture can help shed some light on China’s involvement in agriculture in other Sub-Saharan countries. However, further research is needed to make any qualified generalizations.

George and Bennett (2005: 9) point out that “case studies are generally strong precisely where statistical methods and formal models are weak”. While generalization and reliability can be problematic, case studies do provide insight into complex mechanisms and help develop concepts and hypotheses. According to Gerring (2007: 43) “case study research is better at internal validity, since it is often easier to establish the casual relationship in a single case or a small number of cases”. Andersen (1997: 24) has written that empirical knowledge and many empirical indicators is the strength of case studies and provide validity. One way to further improve the validity of a case study is through triangulation. Stake (2000: 443) writes that “triangulation has generally been considered a process of using multiple perceptions to clarify meaning, verifying the repeatability of an observation or interpretation”. By collecting data from different sources, I attempt to improve the internal validity of the study and avoid internal errors in the research design that can produce false conclusions.

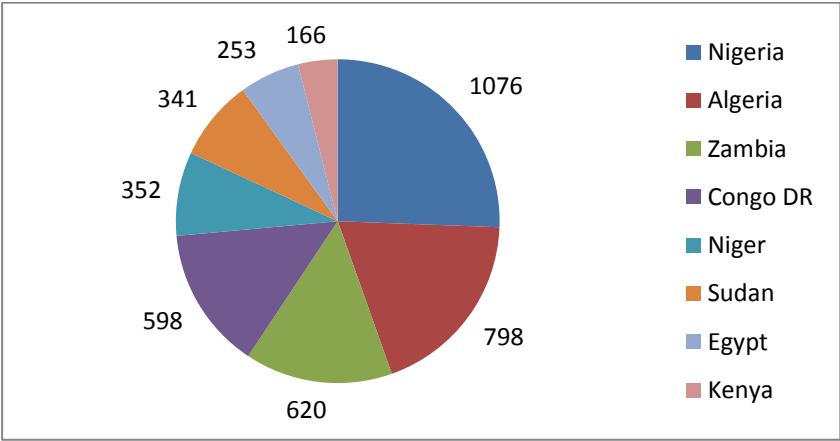
The method I have used for data collection is a combination of interviews and observations, along with literature, newspaper articles and reports collected in Norway and Zambia. The collection of data through fieldwork and interviews will be discussed in section 1.3.3. The secondary literature I have collected is used to confirm and supply the information I gathered during my fieldwork. When using secondary sources, it is easy to spot the arguments in support of your claim and overlook or distort data that contradict it (Booth et al., 2008: 84).

This requires us to be careful and critical when using secondary sources (ibid: 85). I have been aware of this when searching for and reading secondary sources, so I have tried to use all the information I could find without distorting data that can contradict my claims.

### 1.3.2 Case study

Zambia has been chosen as a case for several reasons: It has a long relationship with China dating all the way back to independence; it is one of the most important destinations for Chinese FDI in Africa; and you can find Chinese companies in almost every sector of the economy. Figure 1.1 provides an overview of Chinese outwards investments to some of the major recipient countries in Africa.<sup>2</sup> Zambia is clearly one of the favored destinations, with about US\$ 620 million given in the period of 2004-2010. However, in recent years there has been a growing resentment among the Zambian population against the Chinese presence in the country. According to French (2011), Zambia was one of the first countries in Africa where issues regarding China and its involvement in the country became potent political issues.

**Figure 1.1: Major Chinese FDI destinations in Africa from 2004-2010 (in US\$ million)**



Source: Ministry of Commerce People’s Republic of China (2010).

All together these factors make Zambia a very interesting case to study. Unfortunately, a study of all the Chinese involvements in Zambia is too comprehensive, considering the time and resources I have at my disposal. I have, therefore, decided to focus on China’s aid and

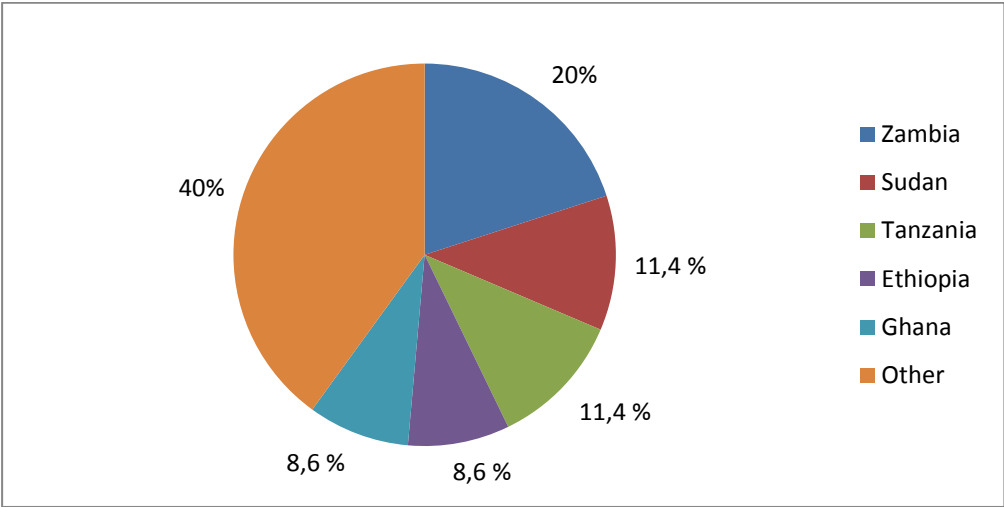
<sup>2</sup> South Africa is, by far, the country in Africa that has received most investments from China in the period of 2004 to 2010, but it is to a large extent based on one huge amount given in 2008, so I decided to leave South Africa out of the comparison.

investments within the agricultural sector. Agriculture is often regarded as very important in reducing poverty: "...agriculture does deliver more poverty reduction than other sectors, especially in the lower-income countries, because it has strong link with other sectors and because poor people participate more in growth in agriculture than growth in other sectors" (Christiaensen and Demery, 2007: vii).

Both before and after independence, Zambia has relied heavily on mining for economic growth, but despite the important role of mining and the relative high degree of urbanization, a majority of the population remains engaged in the agricultural sector (Jenkin, 2011: 8-9). The most recent estimate puts the percentage of total employment attributed to agriculture in excess of 70 percent (World Development Indicator, 2013). More than 65 per cent of the poor are in rural areas working with subsistence farming (Govere et al., 2009: 9). It appears that agriculture occupies a very important position in terms of contributing to economic growth and human well-being (ibid). According to Ziobro (2008: 45), "investments in Zambian agriculture show greater promise for producing in-country development than traditional investments in natural resources". Zambia is, therefore, a good case for studying the effects of aid and investments in agriculture.

In addition to the potential for development in agriculture, it is also a sector that receives substantial aid and investments from China. According to numbers from Zambia Development Agency, China has invested US\$ 12 572 556 million in the agricultural sector in Zambia between 1993 and 2009. However, compared to the amount of investments in mining and to a certain extent in manufacturing, the agricultural sector remains small. Even so, in relation to other foreign investors, China is one of the largest contributors to the agricultural sector in Zambia. China is the fourth largest investor, with Britain as the only Western country to invest more in Zambian agriculture (see figure A.1 in the appendix). China also invests quite a lot in Zambian agriculture compared to investments in other African countries. In figure 1.2, Zambia is compared to other African countries in the Congo Basin and southern African woodlands. Zambia accounts for 20 per cent of the investments in agriculture, a much higher percentage than any other single country.

**Figure 1.2: Major Chinese agriculture investment approval destinations in Africa (1998-2010).**



Source: Wenbin and Wilkes (2011: 6).

In order to analyze the impact of Chinese aid and investments, I have decided to focus on three areas in agriculture where China is involved. The three areas include Chinese farms, the Zambia Agricultural Technology Demonstration Center provided by China and, finally, Chinese cotton production. While gathering information, I found these areas to be most prominent in China’s agricultural aid and investments in Zambia. By focusing on three areas I can also narrow the analysis, which makes it easier to explain the possible impacts on certain groups in the society.

The first focus area is Chinese farms in Zambia. Zambia was an early trial destination for Chinese agricultural investments (Brautigam, 2009: 254). The China-Zambia Friendship Farm was established by the China State Farm and Agribusiness Corporation (CSFAC) in 1990 (ibid). Today there are several Chinese-owned farms in Zambia and according to Li et al. (2012: 249) they are not very different from farms set up by other investors. The Chinese farms are usually either livestock-based, crop farms or vegetable farms (ibid). The farms are similar to local small and medium-sized farms when it comes to their structure and business-model (ibid). More information on Chinese farms in Zambia can be found in table 3.1. I will discuss these farms in relation to Chinese land acquisition and employment as well as transfer of skill and technology.

The second focus area is Zambia Agricultural Technology Demonstration Center. Establishing Demonstration Centers is a part of China’s overall agricultural development

strategy for Africa. Zambia Agricultural Technology Demonstration Center is the result of cooperation between the University of Zambia (UNZA) and the Jilin Agricultural University in China (Ministry of Agriculture, 2012). It is located 15 km east of Zambia's capital, Lusaka, in the Chongwe District (ibid). More specific information on the Demonstration Center can be found in table 3.2. According to Braütigam and Xiaoyang (2009: 701), the agricultural demonstration centers build by China have primarily three requirements: First, they have to attract interest and demonstrate the technologies. Second, they have to have a training component for local farmers. Finally, the centers have to be sustainable. The first two are not so problematic, but the issue of sustainability is more difficult (ibid). This is connected to the general problems of success and sustainability in agricultural projects in Africa, which will be further discussed in the theory chapter. I will examine the Zambia Agricultural Technology Demonstration Center in relation to transfers skill and technology to local farmers.

Finally, I will focus on China's engagement in cotton production in Zambia. Since Zambia began liberalization in 1994, the country has shown both the strengths and weaknesses of a concentrated market-based cotton sector (Tschirley and Kabwe, 2009: v). The number of smallholder farmers receiving inputs has continuously expanded and the lint quality has improved drastically. However, while experienced farmers have increased their yields, the continual entry of new farmers has only created a modest yield growth (ibid). My focus is on the number of smallholder farmers that receive inputs from investors. According to information from the Cotton Board of Zambia, there are four Chinese companies involved in cotton production in the country (see table 3.3). All four companies hire local farmers to produce the cotton for them and provide inputs, such as seeds and fertilizers, to the farmers (out-growing scheme). I will discuss China's involvement in cotton production in relation to employment and to a small extent transfer of skill and technology.

### **1.3.3 Fieldwork**

An important part of my data was collected during a fieldwork in Zambia in November and December of 2012. I spent about five weeks in the Zambian capital, Lusaka, where I visited different agencies and conducted interviews with relevant stakeholders. When I arrived in Lusaka I quickly discovered the magnitude of the Chinese presence in the country. Travelling around in the capital city, one could see all the new buildings constructed or being constructed by Chinese companies. When talking to local Zambians they had a very clear understanding

of the Chinese presence, both in terms of construction, mining and Chinese products at the local market. During my first days in the country I began to ask questions about Chinese involvement in agriculture and the three projects I had decided to focus on. I quickly discovered that their involvement in agriculture was not as prominent as their presence in construction, mining or trading. While people seemed to be aware of their presence in agriculture, few people had first-hand information about any of the projects I wanted to explore.

After this first overview of the situation, I found out that I did not have the time or resources to visit the Chinese cotton companies who are located in the Eastern Province of Zambia. Instead I decided to focus on collecting all the available information in Lusaka. Most national organizations as well as all the relevant state agencies and departments are located in the capital. While the Agricultural Technology Demonstration Center and the Chinese farms are located in the vicinity of Lusaka.

Before going to Zambia I got in touch with the Norwegian Embassy in Lusaka and asked if they knew anyone I could contact in order to learn more about my topic. The embassy was very helpful and sent out an email to all their relevant contacts and some of them responded positive. Together with help from my supervisor, I then had some contacts and interviews arranged before I arrived in Lusaka. I used these connections to find other informants. At the end of my interviews I also asked if the informant knew anyone else who could provide me with relevant information. This way of selecting informants is called snowballing and is based on expedience and not representativeness (Johannessen et al., 2006: 107). It is a useful technique for selecting respondents with certain characteristics, when information on these people are lacking (Overton and van Diermen, 2003: 43). One weakness with this selection method is that you risk consistency or too much likeness between your informants (Valetine, 1997: 116). I have tried to avoid that by having different entry points. In addition to contacts received from my supervisor and the Norwegian Embassy, I approached relevant organizations and institutions in Lusaka that I believed could provide useful information.

Apart from interviews, I collected other empirical evidence in the form of statistics, budgets, policy briefs and reports. I also decided to look at the local media coverage of China's involvement in the country. To do this systematically, I focused on one national daily newspaper, The Post, which allowed me access to their archives. There was, however, a lot of material to go through, so I decided to focus on the newspapers from 2010-2012. I

documented all articles written about Chinese aid and investments in the country. Searching through the newspapers I focused on the headlines and introductions, to narrow down the relevant articles. There was a lot of information about China's involvement in copper mining as well as articles concerning China's aid and investments in the country in general. The newspapers were useful since they gave me an indication on the typical attitudes towards China's engagement in the country. However, I was not able to find many articles on China's involvement in agriculture. The articles on agriculture were mainly about a Chinese cotton company called Mulungushi Textiles (I will return to this in section 3.3.2).

When conducting fieldwork one is often faced with different challenges. One issue I had to consider was the ethical aspect. Norway is a big donor country in Zambia and at almost every interview I was asked what organization I worked for, even though, I had approached them as a student. The response was positive when I explained that I was independent from all organizations and that I was only collecting data for my own study. Another challenge was cancellations and postponing of interviews. I did manage to meet most of the people who agreed to an interview, but I used a lot of time waiting for my informants.

The biggest challenge was to get in contact with Chinese officials or Chinese farmers. Before travelling to Zambia I had done all necessary preparations, but in general, it is very difficult to get in contact with Chinese individuals and with only five weeks in Zambia, I was unable to get the right connections. This means that I was unable to talk to some of the important actors and I only got to visit one Chinese projects. This reduces the possibility to make any definite conclusions. However, I was aware of the difficulties beforehand and I was able to collect some interesting information in Zambia, despite the problems I faced. In terms of Chinese officials, I sent several emails and also tried to show up in person at the Chinese Embassy and at the Chinese Center in Lusaka. At the Chinese Center I approached the Economic and Commercial Counselor's Office, where I was only able to talk to the secretary who told me to send them an email in order to arrange a meeting. I have not received a response to this email. Since I was unable to collect any first-hand information from Chinese officials, I have to rely on other sources, like official statements from the Chinese Embassy in Zambia. There is quite a lot of information to find through these secondary sources, so I think the official Chinese view will be well represented, even though, I did not manage to conduct any interviews.

In terms of Chinese farms, I spent a lot of time trying to arrange a visit to one of the farms in the area around Lusaka. This turned out to be very difficult, since no one I talked to have any

contacts working at Chinese farms. A research fellow from the University of Zambia went with me to a farm he knew about, but they refused to talk to us and we were not let in on the premises. This illustrates some of the difficulties I faced in trying to approach Chinese farmers. It also questions the representativeness of my case. I have to rely on the information provided by other informants as well as secondary literature. There are some researchers, with more extensive fieldworks, who have been able to get in contact with Chinese farmers and I can use this first-hand knowledge. I did, however, get to visit one Chinese project, the Agricultural Technology Demonstration Center, where I talked to the Chinese director. This provided me with some knowledge on how Chinese aid projects are conducted and it gave me detailed information on the Demonstration Center.

## **Interviews**

During my stay in Zambia I conducted 20 interviews with different stakeholders, including government agencies, NGOs and university professors. From those interviews 14 were semi-structured and lasted from 45 minutes to one and a half hour, while the other six were more unstructured conversations. My informants wished to be anonymous, so there is no list of interviews in the appendix. I have, instead, referred to the interviews throughout the analysis, with the relevant information (occupation, place and date of the interview). In the semi-structured interviews I had an interview guide (see appendix), but I went back and forth following the answers of the interviewees. I interviewed four professors from the University of Zambia (UNZA). Three of them were from the Department of Geography, while one was from the School of Agriculture. I also interviewed four representatives from government agencies or departments, including the Zambia Development Agency and the Ministry of Agriculture. In addition, I interviewed seven people from different NGO's or farmers organizations located in Lusaka as well as the director at Zambia Agricultural Technology Demonstration Center. I also visited four Zambian farms, where I conducted informal interviews with local farmers. However, most of the interviews were conducted at the informants offices, which gave me the opportunity to ask for additional reports, statistics etc., but it also resulted in some interruptions from phone-calls and colleges.

In both semi-structured and unstructured interviews the focus is on the interview objects perspectives and context is important (Bryman, 2004). These interviews can be used to gather descriptions and values along different predefined variables, which is exactly what I want to



do in my study. However, both reliability and validity is much criticized in both semi-structured and unstructured interviews. There is often inadequate information about selection of participants, transcription and processing of data. I have, therefore, been conscious about the choices I made and the process of gathering and transcribing the information I received, so that my thesis will be as transparent as possible. Further, in-depth interviews are often criticized for not being objective and that the interviewers bias can affect the respondents answers (Valetine, 1997: 111). I was aware of this and tried to keep it in mind when conducting the interviews. It is, however, difficult to attain complete objectivity in social science research. Some argue that all research is “explicitly or implicitly informed by the experiences, aims and interpretations of the researcher” (ibid: 112).

When conducting interviews it is common to use a tape recorder, since writing while people talk can be off-putting (Brockington and Sullivan, 2003: 58). Not using a tape recorder can also reduce the possibility to replicate the study, since a tape recorder produce more detailed and accurate record of the conversation. Nonetheless, I decided not to use a tape recorder when conducting interviews in Zambia. There are two reasons for this. First, I have previous experience with taking notes during interviews and have found that I manage to write down the important information and at the same time create a relaxed atmosphere where the informants feel free to talk. Second, some of my informants, like the representative from the School of Agriculture and the representative from Zambia National Farmers Union (ZNFU), came with quite harsh critique of the Chinese presence in the country. If I had used a tape recorder I am afraid some of the critical opinions would have been left out. In order to make it easier to replicate my study and improve the reliability, I sat down shortly after every interview and wrote out my notes and everything I could remember from the interview.

## **1.4 Outline of the thesis**

This thesis is divided into four chapters, where I explore Chinese aid and investments in Zambian agriculture. By looking at three inter-related questions concerning land acquisition, transfer of skill and technology, and employment, I examine whether Chinese aid and investments can contribute to poverty reduction. The structure of the thesis is as follows:

Chapter 2 lays out the theoretical framework. The first part provides a brief overview of foreign aid as well as a general discussion on aid, economic growth and poverty reduction,

before I give a short introduction to aid in agriculture. Then I proceed with a discussion on China's foreign aid, with a focus on Africa, before I examine China's aid to agriculture. Further, I explore the possibilities for poverty reduction in agriculture, by focusing on three areas where Chinese aid and investments can have an impact on poverty reduction: land acquisition, transfer of skills and technology and employment. Finally, I present the operationalization of my research questions.

Chapter 3 presents the analysis of the research questions. I begin by looking at the extent of Chinese land acquisition in Zambia and the possible consequences on food security. I will examine whether land acquisition results in efficient land utilization and/or displacement of farmers, as well as the impact on marketplace competition between Chinese and Zambian farmers. I then continue by looking at whether Chinese aid and investments result in transfer of skill and technology and, henceforth, improved farming practices and increased production. Finally, I will discuss whether Chinese engagement in agriculture leads to employment generation and increased income or whether the employment opportunities resulting from such activities are inadequate and results in abusive working conditions.

Chapter 4 summarizes my findings and presents some concluding remarks with regard to the research questions. In addition, I provide some reflections around further research on China's involvement in Africa.

## **2 Theoretical perspectives**

The issue of aid effectiveness and the impact of aid on recipient countries are long standing discussions in the field of foreign aid. There are many different perspectives on how foreign aid should be given and how aid can or cannot contribute to poverty reduction. In recent years the debate has also been influenced by the new emerging countries, often referred to as the BRIC-countries (Brazil, Russia, India and China). They provide foreign aid in a way that deviates from Western donors, and China, in particular, has received a lot of criticism for its foreign aid policy. However, few studies focus on the effectiveness of Chinese aid and the possible impacts on poverty. By looking at theories on foreign aid and aid to agriculture in particular, I hope to create a theoretical framework that shows the potential benefits and challenges that can arise from China's aid and investments in agriculture.

### **2.1 A brief overview of foreign aid**

Foreign aid can be defined in many different ways, from the wide and simple to more complex and technical. In its most simple form, the concept refers to recourses and processes through which one or more governments give donations to another government without having universal goals justifying this practice. Seen from this perspective, foreign aid can be traced back to the 19<sup>th</sup> century (Hjertholm and White, 2000: 81). In a more strict definition, foreign aid is seen exclusively as development aid which can and should be separated from humanitarian aid or relief aid (Mahmoud, 2007: 50). Development aid aims at generating long term solutions while the latter aims at alleviating human suffering in the short term. In most Western countries, the strict definition of foreign aid is used. One common definition is from the Organization for Economic Co-operation and Development (OECD), which defines Official Development Assistance (ODA) as "Flows of official financing administered with the promotion of the economic development and welfare of developing countries as the main objective and which are concessional in character with a grant element of at least 25 per cent" (DAC, 2003). Most of China's aid, however, falls outside the ODA definition and I will return to this in the section on China's foreign aid.

Regardless of definition, foreign aid has changed several times over the years. Mahmoud (2007: 49) writes that "it is important though to acknowledge that foreign aid is far from being a homogenous enterprise: its variation over space and time is sometimes drastic". A

reason behind this can be the relationship between foreign aid as an instrument of foreign policy and as a development doctrine (see for example Pearce, 2001). Adelman (1999: 2) argues that the changes in development theory and policy making comes from five main sources: the learning process, the ideological changes, changes in international environment, changes in domestic institutions and the culture of the discipline. Going through the history of foreign aid one can see several important changes taking place.

Before the Second World War, the social and economic development of the third world was not a policy objective for colonial rulers (Thorbecke, 2000: 17). But the end of the Second World War marked a new beginning, where countries began to introduce foreign aid to finance development in their colonies (Pronk, 2004: 1). In 1949, President Truman launched his Point Four Program making it “the policy of the United States to aid the efforts of economically underdeveloped areas to develop their resources and improve their living conditions” (ibid). This program is often considered the beginning of foreign aid. The 1950s was marked by a strong belief in industrialization and foreign aid focused on large-scale resource transfers in order to trigger the Rostovian industrial “take-off” (Mahmoud, 2007: 51). Aid was principally seen as a source of capital and was supposed to trigger economic growth through higher investments (Thorbecke, 2000: 23). By the 1960s foreign aid became more sector and program orientated, and it focused on new matters such as education and the role of agriculture (ibid: 24). A new shift occurred again in the 1970s when issues related to rural-urban migration, unemployment and mass poverty became central to foreign aid (Lipton, 1977, Todaro, 1969). During the economic stagnation in the developing world in the 1980s it became hard to ignore the fact that different political regimes were unable to recover from the economic troubles. The world turned to the Asian economies and based on the Asian success, foreign aid became more conditional and focused on structural adjustment programs that intended to discipline the political and economic system (Thorbecke, 2000: 35). This focus lasted until the late 1990s when it became obvious that if foreign aid were to continue it had to refocus to the 1970s objectives of poverty reduction and basic needs issues (Mahmoud, 2007: 52).

Today the focus is on the Millennium Development Goals (MDGs). According to Mahmoud (2007: 52), “this series of ‘get-rid-of-poverty-quick’ schemes are being proposed and endorsed by many political leaders in the West in a quasi-frantic way”. He argues that there are several inconveniences with regards to racing towards high quantities of ODA. First, it

may imply that the problem with foreign aid has been too little aid. And second, it fails to be precise about issues of distribution and quality (ibid). Olivier De Schutter (2010), UN special rapporteur on the right to food, argues that the MDGs only address the symptoms of poverty and ignore the deeper causes. However, many have argued that the issue of foreign aid is not whether it works or not, but how it works and in what circumstances it can have a positive effect on development (Arvin, 2002, Nijman and Grant, 2000, Tarp and Hjertholm, 2000). It is therefore meaningful to look into how Chinese foreign aid and investments can affect development in a specific case. But to approach these issues I find it useful to unravel some of the basic grounds upon which foreign aid is given-the motivations behind foreign aid.

An important question to ask in the development debate is what drives foreign aid? Why do some countries provide aid for others? Different justifications for foreign aid have been articulated over the years. Some argue that foreign aid is driven by altruism and that it is humanitarian concerns that motivate donors (Robinson and Tarp, 2000: 2). Lumsdaine (1993: 29) is a proponent of this view and he argues that “foreign aid cannot be explained on the basis of the economic and political interests of the donor countries alone, and any satisfactory explanation must give a central place to the influence of humanitarian and egalitarian convictions upon aid donors”. Others argue that aid is dictated by political and economic interests (Lancaster, 1999, Robinson and Tarp, 2000). Yet, another justification can be economic development, which has been used as a goal in itself, but also as a condition for realizing other development goals (Robinson and Tarp, 2000: 2). The justifications behind Chinese foreign aid will be discussed in section 2.3.

## **2.2 Aid and development**

### **2.2.1 Definition of poverty**

A key word in this study is poverty, which is used in the overall research question and forms the basis for the analysis. Poverty is a broad concept, with many possible definitions, so in order to analyze whether Chinese aid and investments have had an impact on poverty in Zambia, I have to narrow down to a definition. Krishna (2010: 164) writes that “Poverty has a complex, multi-faced reality, and it is not feasible to examine all of these facets within a single study”. Based on the definition I chose, I will include certain assumptions and exclude others, which will affect the end result.

There are two principal ways in which poverty has usually been defined. One is conventional, which uses income or other social indicators to measure welfare, and another is participatory, which allows for flexibility in perceptions of poverty and views it in both physical and non-material terms (Wratten, 1995: 32). The conventional definition is often used in quantitative measurement and individuals and households are ranked along a common, externally defined scale which functions as a surrogate measure of poverty (ibid). This is useful when one wants to understand the general patterns of deprivation and compare different countries or groups. The World Bank (1990: 26) defines poverty as the “inability to attain a minimal standard of living”. This definition focuses mainly on income, while other conventional definitions also include social indicators, like life expectancy, nutrition, infant mortality rate, literacy, school enrolment rates and so on (Wratten, 1995: 14). The Human Development Index is an example of the latter, where different indicators are used to make a single measure of both social and economic development (UNDP, 2013a). An issue much discussed in defining poverty is whether it should be understood as absolute or relative. Sen (1983: 159) argues that “there is...an irreducible absolutist core in the idea of poverty (...) If there is starvation and hunger then – no matter what the relative picture looks like – there clearly is poverty”. Townsend (1993: 36) on the other hand argues that people are relatively deprived if they are unable to obtain the conditions of life that are necessary to take part in the customary behavior in society. He says that “If they lack or are denied resources to obtain access to these conditions of life and so fulfill membership of society they may be said to be in poverty” (Ibid).

However, poverty can also be viewed as an inherently subjective concept, which means that not everyone holds an identical view of poverty. The participatory definition recognizes the diversity of perceptions and enables us to build up an understanding of its many dimensions for particular poor groups (Wratten, 1995: 16-17). It highlights two concepts, vulnerability and entitlement, that enhance the conceptualization of poverty and extend our understanding of the process by which people become and remain poor (ibid). This way of defining poverty is more common in qualitative studies and will be more in line with the way I understand poverty in this thesis.

Sengupta (2005: 8) defines poverty as a composite of income poverty, human development poverty and social exclusion. Sengupta’s definition and the participatory definition are both multidimensional and when one uses this type of definition, the words poverty reduction and development can be used interchangeably, since they are regarded to entail more than just

economic growth. Melber (2010: 215) argues that “While economic growth might be seen as a necessary condition for poverty reduction, it is in itself certainly not enough to secure it”. There are also other key factors in creating development and poverty reduction, like employment, the level of inequality, the pattern of growth, the nature of politics and public policies and the extent of state intervention. Amartya Sen (1999: 87) writes that development can be seen as a process of expanding the real freedoms people enjoy. In other words, development is the capability to achieve the kind of life one wants to live – the freedom to choose one’s life. According to Sen “poverty must be seen as the deprivation of basic capabilities rather than merely as lowness of incomes, which is the standard criterion of identification of poverty” (ibid). However, the two perspectives are connected, since income can be an important means to capabilities and enhanced capabilities can lead to higher income (ibid: 90).

In this thesis I will look at three different ways to reduce poverty. While one is concerned with income and greater financial resources, the two others focus on improving farming practices and increasing food production. All of them can help reduce poverty by focusing on the causes of deprivation and ways to improve the conditions. They are all based on a participatory view of poverty, where vulnerability and entitlement is important, and poverty cannot be measured with a single indicator. Some of the problems with a participatory approach are the complexity of the concepts and the diffuse applicability of the approach. Poverty is a very complex concept which makes it difficult to decide what aspects are necessary to achieve poverty reduction. There are numerous aspects that can contribute to poverty reduction, such as good health, education and financial resources, and I can only consider some of them. In addition, the three aspects I want to explore are highly arbitrary and context related and this makes it difficult to measure the effects.

### **2.2.2 Aid, economic growth and poverty reduction**

There is a large and diverse literature on the impact of foreign aid on economic growth and poverty reduction. But only some of the different perspectives will be discussed in this section to indicate the location of this study in the broader foreign aid discourse. Sachs (2009: 70) believes that there are three main disagreements that shape the debates on foreign aid: First, whether aid is simply an instrument of foreign policy and not actually intended to improve the lives of those in need. Second, which type of aid that is most beneficial in combating poverty,

regardless of motivation. Finally, the role and importance of aid compared to other forms of economic activity, such as trade, in raising living standards. All of these disagreements will be touched upon when I now focus on the relationship between aid, economic growth and poverty reduction.

Foreign aid has existed for many years and large amounts of money have been given to poor recipient countries, but still there is no compelling evidence of aid actually promoting economic development and welfare (Mahmoud, 2007: 48). Other factors are seen as more crucial for the impacts of foreign aid. Dollar and Levin (2005: i) find that high-quality institutions in a recipient country is an important factor in order to raise the probability of aid being used effectively. Moss, Petterson and van de Walle (2006: 1) review evidence regarding aid dependency and its potentially negative effects on state institutions and they “conclude that states which can raise a substantial proportion of their revenues from the international community are less accountable to their citizens and under less pressure to maintain popular legitimacy”.

Essentially the arguments against aid is that it is not, or has not been, effective in promoting economic growth (Morrissey, 2006: 78). Three common arguments are that (1) most aid goes to the governments and support the public sector rather than the private (the implicit argument is that trade supports the private sector and is preferable), (2) aid alleviates the need for governments to impose fiscal and budgetary discipline, (3) governments will tend to misuse aid (ibid: 78-79). The proponents of aid, on the other hand, argue that aid has a positive impact on growth, even though the magnitude of the effects is low (ibid: 80). Further, they argue that aid can contribute to appropriate economic policies and that conditionality can influence policy. According to the English Department for International Development (2006: 13), “aid helps reduce poverty by increasing economic growth, improving governance and increasing access to public services”.

The disagreements continue in terms of how the donor community should proceed in the future. Some underline the potential opportunities that lie in an increase in foreign aid (Saxena, 2005, Schneider, 2005, White, 2005), while others underline the dangers and negative effects that this might have (Killick, 2005, Kitabire, 2005, Lahiri and Raimondos-Møller, 2004). The ones who see the potential “claims that with an increase in the amounts offered, less intrusive policies from the donors’ side, and a harmonization of donor efforts, foreign aid can speed up the absorptive capacity and diminish recipient countries’ aid



dependency” (Mahmoud, 2007: 48-49). White (2005: 8) dismisses important arguments against doubling aid and concludes that there are no serious constraints to increase aid, but the type of aid matters and one needs to pay attention to the government’s commitment to reduce poverty. The results from Schneider’s (2005: 96) analysis support the argument that increased aid and better donor behavior can support improved governance in aid recipients, but only as long as it does not undermine state accountability to citizens. In opposition to this view are the ones who suggest that more foreign aid will lead to increased dependency. The capacity to mobilize resources, create national economic basis and compete internationally, will diminish (Mahmoud, 2007: 49). Killick (2005: 14) argues that a huge increase in aid will give disappointing results since further increase in Africa’s dependence on aid will have negative effects for the continent and that an emphasis on quantity will override previous efforts to raise the quality or effectiveness of aid.

The disagreements can be illustrated with one of the well-known arguments in the field of foreign aid, between William Easterly and Jeffrey Sachs. Easterly (2008: 6) is an avid critic of foreign aid and argues that aid is administered by “planners”, which is bad news for the poor, since historically poverty has not been ended by central “planners”.<sup>3</sup> In his opinion poverty can be reduced by “searchers” who explore different solutions by trial and error. “Searchers” find out what actually works and take responsibility for their actions in comparison to “planners” who has good intentions but do not motivate anyone to carry out their plans (ibid: 6-8). While “planners” apply global blueprints, “searchers” adapt to local conditions. Easterly criticizes Sachs and others who believe that the key to progress on poverty is a grand international effort at collective actions (ibid: 7).

Sachs disagrees with Easterly and argues that we know how to help the poor (Sachs, 2006b: 1309). He states that “By neglecting to hone in on what has worked and failed in the past, Easterly conveys a misplaced sense of helplessness in the face of massive but solvable problems” (ibid). Sachs argues that it is easier to end the poverty trap than it appears because “The know-how and technologies exist to save lives each year by the millions, and to improve livelihoods by the tens or hundreds of millions, but only by expanding beyond piecemeal approaches and applying knowledge at scale” (ibid). He believes that our generation has the

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<sup>3</sup> “Planner” and “searcher” are words introduced by Easterly in order to explain his argument. A “planner is someone who thinks he knows the answers and then tries to apply it at a large scale. Easterly criticizes this type of foreign aid. He believes that “searchers” are better at providing aid since they look for opportunities to solve problems and do not believe they have the answers to everything (Easterly, 2008: 6)

power to end poverty. The key is to create a global network of cooperation and we need a strategy of scaling up the investments that will end poverty (Sachs, 2006a: 242-243).

Others have focused on donor inefficiencies and incapacities (Conyers and Mellors, 2005, de Renzio, 2005, Saasa, 2005). After doing a study on eight major donors in Africa, Lancaster (1999: 3-4) concluded that “contrary to widely held views ... the main problem is the lack of capacity on the part of aid agencies to undertake the kind of interventions they have attempted”. Alesina and Dollar (2000) conducted a study on whether the patterns of aid giving contributed to the waste of foreign aid. They found that the pattern of aid giving is dictated by political and strategic considerations. Factors like voting patterns in the United Nations and colonial past explain more about the distribution of aid than the economic policy or political institutions of recipients (*ibid*). This indicates that aid can function as an instrument of foreign policy. However, they also found that states going through a democratization process received an increase in aid. This indicates that donors support democratization regardless of colonial past or alliances.

The arguments presented here show some of the diversification in the aid literature as well as some of the main disagreements. It is within this field of research I will look at the effects of Chinese aid and investments. My focus will be on agriculture and how aid and investments in this sector can contribute to poverty reduction.

### **2.2.3 Aid and development in agriculture**

Agriculture is an important part of the economy for many developing countries and it continues to be important for sustainable development and poverty reduction. With aid and investments from local and international levels, agriculture can offer new opportunities for millions of people worldwide. According to Fan et al. (2010: 1), “a consensus is building up on the importance of agriculture and rural development as an engine of growth in Africa and as a viable response mechanism to new challenges for growth and food security such as the global recession, volatile food prices, and climate change”. African countries have different potential for agricultural growth, but growth in agriculture is essential for poverty reduction. Growth driven by agriculture consistently contributes more to poverty reduction than growth driven by non-agriculture (Diao et al., 2006). According to the World Bank (2008: 6) “cross-country estimates show that GDP growth originating in agriculture is at least twice as effective in reducing poverty as GDP growth originating outside agriculture”. The English

Department for International Development (DFID, 2005: 9) report that “there is a mass of evidence that increasing agricultural productivity has benefited millions through higher incomes, more plentiful and cheaper food, and by generating patterns of development that are employment-intensive and benefit both rural and urban areas”. While agriculture alone is not enough, it has proven to be uniquely powerful for the task (World Bank, 2008: 1).

The belief in agriculture as an important component for development is not new. In 1988 Timmer (1988) argued that where agriculture exists, no sustainable long-running pattern of economic growth and development has been achieved without a fundamental transformation of agriculture. Johnston and Mellor (1961) also argued along the same lines. They identified five important means by which agriculture can contribute to growth and they stressed the importance of promoting agricultural and industrial development simultaneously. The five means include; (1) providing increased food supplies; (2) enlarged agricultural exports; (3) transfer of manpower from agriculture to non-agricultural sectors; (4) agriculture’s contribution to capital formation; and (5) increased rural income as a stimulus to industrialization (ibid: 572-580).

Based on the information above, one would think that agriculture was a key priority in foreign aid, but the picture has been quite different. A central finding in the World Bank study on assistance to Sub-Saharan Africa, is that agriculture has been neglected by both governments and the donor community, including the World Bank (World Bank, 2007: xxiii). Funding for agriculture in aid agencies like the World Bank fell from 23 percent of loans in the early 1980s to only 5 percent in the late 1990s (Brautigam, 2009: 235). It is clearly a contradiction between the recognized importance of agriculture on the one hand and the declining recourse directed at them on the other (FAO, 2006: 15). In 2006, the Food and Agriculture Organization (FAO) found it alarming that there was a declining trend in resources for hunger reduction as well as agriculture and rural development (ibid: 21).

Eicher (2003: ii) explained this apparent paradox by looking at NGOs and their role in foreign aid. He argues that agriculture has been dethroned from the agenda of many donors as a result of effective NGO pressure to broaden the aid agenda. NGOs believe that aid should be people-centered instead of sector or activity-centered, leading to less focus on the agricultural sector and more focus on people living in rural areas. There are also those who argue that agricultural economics is not necessarily the key discipline in understanding the economics of rural income and poverty. Gardner (2005: 39) questions the correlation between agricultural

GDP and GDP per capita, saying that agricultural development is not necessarily responsible for stimulating the increase in income. Based on these types of arguments several researchers support a Local Economic Development (LED) approach, where the importance of agricultural development is downplayed and it is only one of several relevant factors. Another reason for declining aid to agriculture can be the problems surrounding these projects. In an internal study conducted by the World Bank they found that agricultural projects were more expensive, riskier and generally more contentious than other projects (Brautigam, 2009: 235). Between 1965 and 1986 the World Bank reported a 50 per cent failure rate for its African rural development projects (cited in Eicher, 2003: 9-10). This is similar to China's experience with agricultural projects. Despite the political importance of agriculture, China has learned that it is difficult to achieve sustainability for its projects (Bräutigam and Xiaoyang, 2009: 689).

Nonetheless, today it seems like the downward trend in agricultural aid and investments are slowly turning as the donors once again see the potential in agricultural development. The World Bank realize that it is time to place agriculture in the center of the development agenda, 25 years after the last World Development Report on agriculture was completed (World Bank, 2008: 1). It is encouraging that several donors are changing their priorities and coming to the conclusion that "rural social services, food aid and post conflict aid may keep people alive but they do not increase crop yields and earnings capacity – the keys to mass poverty alleviation" (Eicher, 2003: iv). And with the recent increases in food prices and the large scale investments made in overseas agriculture, it is even more important to focus on how agriculture can contribute to poverty reduction.

### **2.3 China's foreign aid: with a focus on Africa**

China's foreign aid to Africa has a long history, with its first aid program introduced in 1956 (Söderberg, 2010: 122). Back then an important aim was to knit African and other developing countries into an alliance with China, to counterbalance the developed North (Tjønneland et al., 2006: 8). China is seen as a different donor and partner because it is also a developing country and together with its economic success, it has credibility as a partner with relevant recent experience (Brautigam, 2009: 11). In 1964 the basic principles of China's foreign aid was formulated in the Eight Principles for Economic Aid and Technical Assistance to Other Countries. The core content featured equality, mutual benefit and no strings attached

(Information Office of the State Council, 2011). These features continue to be an important part of Chinese foreign aid, while other parts have been adjusted in accordance with changing economic and political situations.

From the early 1980s, Deng Xiaoping introduced new guidelines for aid and the policy was one of “giving moderately and receiving a lot” (Tjønneland et al., 2006: 8). Aid was supposed to be beneficial not only for the recipient countries, but also for China. The basic features of China’s foreign aid policy today is adhering to equality, mutual benefit and common development; imposing no political conditions; helping countries build their own self-development capacity; remaining realistic while striving for the best; and keeping pace with reform and innovation (Information Office of the State Council, 2011). However, academic research on China’s foreign aid often highlights other characteristics. It focuses on areas where China is different from Western donors. This includes: no political strings attached and non-interference aid policy; emphasizing bilateral aid projects rather than multilateral; and a strong focus on hardware projects such as physical infrastructure construction rather than software projects like research and capacity building (but China has become more involved in software projects in recent years) (Wenping, 2010: 146-155). China’s foreign aid has also certain commonalities with other Asian donors. Söderberg (2010: 130) summarizes these commonalities saying “there is a belief in a strong state, a weak role for NGOs in the planning and provision of aid and a considerably smaller element or conditionality, especially compared with the World Bank’s approach”.

While I have described the basic features of China’s foreign aid, it is also interesting to know what forms of aid China delivers and what areas it focuses on. According to China, it offers foreign aid in eight different forms: “complete projects, goods and materials, technical cooperation, human resource development cooperation, medical teams sent abroad, emergency humanitarian aid, volunteer programs in foreign countries, and debt relief” (Information Office of the State Council, 2011). Its foreign aid projects are oriented towards “agriculture, industry, economic infrastructure, public facilities, education, and medical and health care” (ibid). My focus will be on agriculture and the different projects carried out in this sector.

In terms of China’s aid system, the State Council continues to have an oversight role for aid (Brautigam, 2009: 107). However, the Ministry of Commerce is at the center of the aid system, by issuing grants and zero-interest loans as well as coordinating with China

Eximbank on concessional loans (ibid: 105). By the end of 2009, China had spent a total of 256.29 billion Yuan (about US\$ 38bn) on foreign aid (Information Office of the State Council, 2011). More than 106.2 billion Yuan (about US\$ 17bn) was spent on grants while 60 per cent was distributed fairly evenly between concessional loans and zero-interest loans (see figure A.2). Regarding the distribution of foreign aid, China makes great effort to ensure that the aid benefits as many needy people as possible. In 2009, 45,7 per cent of the foreign aid funds went to Africa (ibid). Brautigam (2009: 156) calculates that between 1956 and 2006, Africa received US\$ 6 billion from China.

So far, I have presented a brief overview of China's foreign aid. However, there are many who are critical of the way China provides aid and I will present some of the main arguments against China's aid policy. In terms of the characteristics of China's aid provided by Wenping (2010), they are all in contrast to Western donors' aid policy. They are usually positive to interference, give aid both bilaterally and multilaterally and focus on software projects. The West identified the problem of African underdevelopment as "poor governance" and the solution was of course "good governance" or democratization (Abrahamsen, 2000: 25). Therefore, an important aspect of international relations and foreign aid became "state-building" and aid is often given with conditionality that relates to "good governance". China's non-interference policy has naturally received a lot of criticism from Western countries. According to Lagerkvist (2010: 180), China's focus on effectiveness can turn into bad governance, if they continue to neglect embezzlement and corruption, and this is perhaps the greatest lacuna in Chinese aid strategy to Africa. China usually provide aid through discrete projects, arguing that such projects are less prone to corruption and they deliver quick results (Tan-Mullins et al., 2010: 860). This might make it more effective and efficient, but the downside is that it comes to the expense of human rights, governance and the environment (ibid: 860-861).

China contends that it has no political strings attached, as opposed to Western donors. Nonetheless, it refuses to provide aid to countries supporting Taiwan (Brautigam, 2009: 150-151). This may be a small claim compared to what many Westerns donors demand, but even so it is a form of conditionality. It also indicates that Chinese aid can function as an institution of foreign policy as discussed in section 2.2.2. However, I also believe there are other justifications or motivations behind China's aid. According to Brautigam, China's strategy in Africa is long-term and well-thought-out and it addresses three central political and economic

challenges in China (ibid: 78). First, rapid growth increases the need for natural resources; second, China need to establish itself as a rising but responsible power (a political challenge); third, China's embrace of globalization and the need to expand into new markets (ibid). Others who argue that aid can be driven by economic and political interests are Lancaster (1999) and Robinson and Tarp (2000).

When it comes to the type and amount of aid provided, China is also a bit different from other donors. With a mixture of aid and investments most of China's officially supported finance does not fall under ODA (Bräutigam, 2011: 752). Aid is often loosely defined within a framework of South-South cooperation that also includes other types of collaboration, such as commercial (Söderberg, 2010: 125). This makes it difficult to decide what is to be considered development assistance and what is not, since the boundaries between aid and investments are not always clear (ibid). This is one of the reasons why I have decided to focus on both aid and investments in this study. At the same time, numbers and statistics on country level are often kept away from the public, so it is difficult to analyze the amount and extent of Chinese involvement (Tan-Mullins et al., 2010: 862).

China defends its aid strategy, arguing that it is of mutual benefit, effective and quicker in reaching its targets. It criticizes the West for interference and conditionality, arguing that recipient countries have the right to choose their own path of development (Information Office of the State Council, 2011). According to local sources, China has, through foreign aid, "consolidated friendly relations and economic and trade cooperation with other developing countries, promoted South-South cooperation and contributed to the common development of mankind" (ibid). However, the lack of transparency makes it difficult to evaluate China's foreign aid and the possible consequences for poverty reduction. According to Banik (2013: 19), the lack of transparency in Chinese aid has led to numerous misunderstandings in the Global North. Despite the difficulties in evaluating Chinese aid, my aim in this thesis is to examine the impact of China's aid and investments in agriculture.

### **2.3.1 Chinese aid to agriculture**

China has been active in African agriculture since the 1960s, when it began as an instrument of diplomacy, countering Taiwan's agricultural aid program, Operation Vanguard (Bräutigam and Xiaoyang, 2009: 688). In the beginning, China focused on large state-owned farms, but the strategy soon changed to support for African smallholders. While agricultural aid from

traditional donors declined during the 1980s, China continued to be engaged in rural Africa and they entered into a period of consolidation and experimentation (ibid: 689).

From 1995 until today China has pursued a policy of “Going Global”, which includes using both domestic and foreign markets and resources (Freeman et al., 2008: 12). There are five trends that emerged during this period. First, based on the poor result of previous aid projects it was decided to foster a principle of integrating aid and Chinese enterprises (Bräutigam and Xiaoyang, 2009: 693). One believed that productive aid projects would have a better chance of sustainability if Chinese partners with a profit motive were involved (ibid). Aid for agriculture would have to “guarantee economic profits for China, create jobs in Africa, and help resolve African food supply problems, i.e. it would need to be of *mutual benefit*” (Brautigam, 2009: 240). Second, “Going Global” has created new opportunities for Chinese firms in agriculture, by making it easier to invest abroad (Smaller et al., 2012: 4). Third, new tools and instruments are used to promote Chinese business engagement in Africa. For example, the China Development Bank and the Chinese Ministry of Agriculture has agreed to work together to encourage projects using water and land resources overseas (Bräutigam and Xiaoyang, 2009: 694). At the same time, the China Export Import Bank promises full support for agricultural projects in Africa. Fourth, there was a belief in agriculture and aid to serve the needs of diplomacy and it was promoted in international summits, including in the Forum on China Africa Cooperation (FOCAC) (ibid: 695). Finally, there was a backlash against the idea of large overseas farms and the notion that China invested overseas primarily to ship the products back home. Even though agricultural investments were encouraged under the “Going Global” strategy, Chinese officials denied that they had a policy of promoting large-scale investments overseas to grow products for the Chinese market (ibid: 698). However, China continues to invest in land overseas, even though, they produce for other markets than their own.

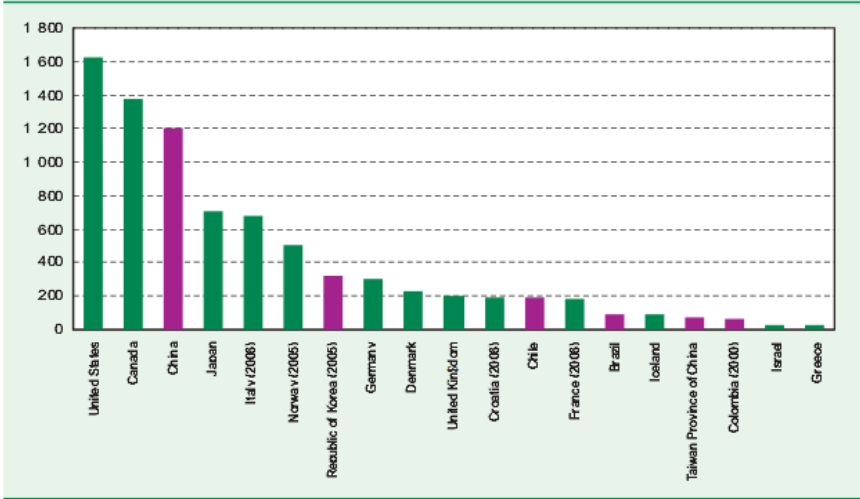
The context for Chinese involvement in agriculture is complex. Chinese farmers continue to produce nearly 95 percent of the nation’s consumption, but the country is approaching a point called the “red line” for food security, which is set by the government at 120 million hectares of arable land (Bräutigam and Xiaoyang, 2009: 687). While China has a fifth of the world’s population, it only has 9 percent of the arable land (Brautigam, 2009: 253). Hence, Freeman et al. (2008: 8) argue that “while economic reform has increased output of the agriculture sector, the land shortage is and will continue to be a major factor in determining the degree to



which China will be a net agricultural importer”. Millions of Chinese farmers have been pushed off their land by growing Chinese cities. These new pressures explain some of the obvious attraction posed by Africa. Agricultural assistance can also produce diplomatic benefits as well as increase global food supplies, which is beneficial for China who became a net food importer in 2003 (Freeman et al., 2008: 10). At the same time, the African continent has also been a food importer for a long time, so assistance to agriculture is very welcome (Bräutigam and Xiaoyang, 2009: 687).

Today, agriculture is a fast growing arena for Chinese economic engagement in Africa. Both imports and exports of agricultural raw materials and food have quadrupled from 2000-2008 (Fan et al., 2010: 9). Chinese investments in overseas agriculture are significant when compared to other countries. In 2007 China’s total investments in agriculture was roughly US\$ 1.2 billion, making it the third largest source. This is shown in figure 2.1, where you can see the total amount of FDI in agriculture among some selected countries. China is behind the United States and Canada, but has more outward investment in agriculture than both the United Kingdom and France.

**Figure 2.1: Outward FDI stock of selected economies in agriculture, 2007 or latest year available (US\$ million).**



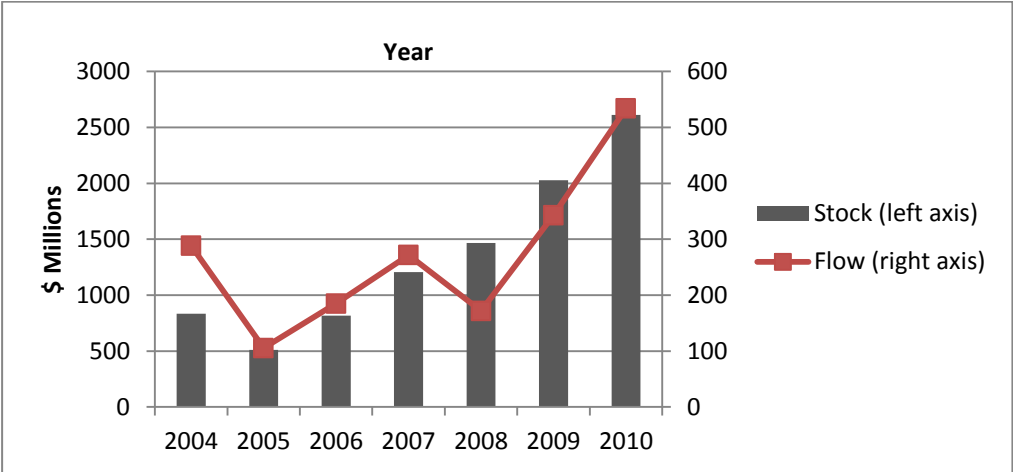
Source: UNCTAD [http://unctad.org/en/docs/wir2009\\_en.pdf](http://unctad.org/en/docs/wir2009_en.pdf)

Note: Data for Taiwan Province of China are on an approval basis.

The amount of investment is also growing, with China’s Ministry of Commerce reporting that the stocks had grown to US\$ 2.6 billion in 2010 (Ministry of Commerce, 2010). The increase in agricultural investments is depicted in figure 2.2. There is clearly an increase in both the

FDI stock and flow, with the stock increasing from US\$ 500 million in 2005 to US\$ 2.6 billion in 2010. Except from a small downturn in 2005 and 2008, the FDI flow has grown steadily from 2004 to 2010.

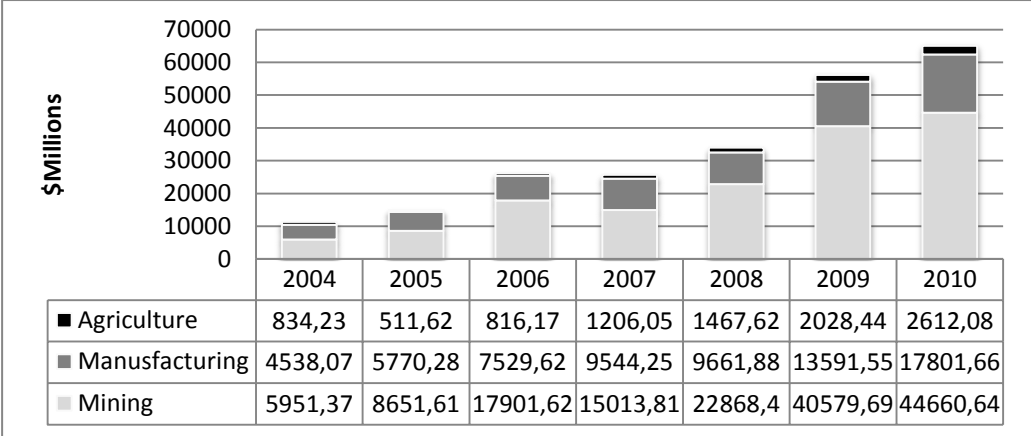
**Figure 2.2: China’s flow and stock of agricultural investments from 2004-2010.**



Source: Ministry of Commerce People’s Republic of China (2010).

Nevertheless, investments in agriculture remained small compared to other sectors, like mining and manufacturing (Brautigam, 2009, Fan et al., 2010, Freeman et al., 2008, Smaller et al., 2012). In figure 2.3, there is a comparison of the amount of investments in the three sectors from 2004 to 2010. It is not easy to see the investments in agriculture, especially in the first years, so I have included the amount of investments in numbers below the diagram. The figure illustrates the difference in the amount of investments made and it is clear that mining and manufacturing receives far more than agriculture. In 2010 agriculture accounted for 1 percent of the total Chinese FDI stock. Smaller et al. (2012: 5) writes that “China is one of the biggest investors abroad, but when it comes to China’s overall investment stock, agriculture is still only a fraction (although growing steadily)”.

**Figure 2.3: A comparison of Chinese investments in agriculture, manufacturing and mining from 2004-2010.**



Source: Ministry of Commerce People’s Republic of China (2010).

In sum, China’s demand for agricultural products can generate more investments and revenues, but reckless investment aid might threaten impoverished farmers in Africa and Asia (Freeman et al., 2008: 3). China’s aid and investments in agriculture today does reflect lessons from past failures. However, these lessons are incomplete (Bräutigam and Xiaoyang, 2009: 687). While the hopes are to foster sustainable agricultural projects, there is little evidence that China incorporates lessons from the political and social context shaping agricultural practices in Africa (ibid). The focus on profit is often welcomed by the political elite, who see both public and private gains, but it can increase the vulnerability of traditional smallholders and subsistence farmers (ibid). In the next part I will explore the possibility for poverty reduction through agricultural aid and investments as well as the possible complications that can arise.

**2.3.2 Poverty reduction through agriculture**

There are many different arguments concerning investments and foreign aid in agriculture and the consequences of such involvement. According to a research brief from the African Development Bank (Castel and Kamara, 2009: 2), foreign investments in African agriculture can have potential benefits for the economy. Foreign investments can expand production opportunities, create employment, provide access to technology, connect them to market opportunities and utilize unexploited land (ibid). A study conducted by the World Bank have similar suggestions on how local communities can benefit from foreign investment in agricultural land: provision of public goods and services associated with land compensation;

employment generation; access to technology and markets for smallholders; and payment of taxes to local and central governments (World Bank, 2011: xxxiii).

According to Eicher (2003: iv), donors should “increase their investments in prime movers (human capital, technology, and institutional innovations) to increase farm production and accelerate agricultural growth.” This is similar to other research conclusions on the topic. Diao et al. (2006: viii), for example, argue that for African farmers, poverty reduction and growth depends on “improving infrastructure and education, distributing key technologies and inputs, and promoting producer and marketing organizations that link small farmers to new market chains.” In 2006 the Alliance for a Green Revolution in Africa (AGRA) was established by the Bill and Melinda Gates Foundation and the Rockefeller Foundation. AGRA argues that what Africa needs is better farming practices, water control systems, improved seeds and fertilizers, and networks of small shops to sell them (Brautigam, 2009: 250). Therefore, their focus areas include providing better quality seeds to African farmers, improving soil health, providing better access to markets and building partnerships to change policies (AGRA, 2012).

At the same time there is a growing apprehension that agricultural investments and associated land acquisition may actually hinder poverty alleviation and food security. Castel and Kamara (2009: 2) argue that “Even though foreign investment in agriculture in Africa offers opportunities for business partnerships and technology transfer, it can jeopardize the livelihoods of the poorest, notably by increasing food insecurity”. African governments need to insert mechanisms that make them benefit from foreign investments in agriculture and at the same time preserve the interests and livelihood of the local population (ibid: 3).

The question then is how Chinese aid and investments, specifically, can help African farmers. China has been very successful in agriculture-led broad-based development and many believe that lessons from their own experience can be used to help agricultural development in Sub-Saharan Africa (Fan et al., 2010: 1). In terms of agriculture and rural growth, reforms need to provide smallholders with incentives to increase productivity and production (ibid). Another argument is that the increase in agricultural productivity in China occurred largely through scientific and technological innovations (AATF, 2010: vii). These technological innovations can now be transferred to Africa and help increase agricultural productivity. However, not everyone agrees that China’s own experience can be applicable to Africa. Hairong and Sautman (2010: 321) argues that China has a techno-centric approach to agricultural aid,

while China's own agrarian reform involved changes in relation to production, with land redistribution at its core.

While there are small disparities in the strategies aimed at promoting agricultural development, there are also some commonalities. Based on a careful review of the literature there appears to be three areas where aid can contribute to improved production and China can have an impact on poverty reduction. These areas include land acquisition, transfer of skills and technology and employment. According to the literature these factors can improve farming practices, increase food production and create additional income opportunities and potentially reduce poverty. At the same time it is important to remember that aid and investments in agriculture can be problematic and the consequences are not always beneficial for the recipient country.

### **Land acquisition**

Farmland has become an important target for a growing number of investors over the last few years. In 2012, an analytical report based on the Land Matrix Database could report of 1217 agricultural land deals, covering 83.2 million hectares (Anseeuw et al., 2012: vii).<sup>4</sup> They found that the most targeted region for investments is Africa, with 754 deals covering 56.2 million hectares. This is an area equivalent to 4.8 percent of Africa's total agricultural area, or the territory of Kenya (ibid). The majority of the reported acquisitions are concentrated in a few countries. While 84 countries have reported being targeted by foreign investors, 70 percent of the reported targeted land can be found in just eleven countries, with Zambia being one of them (ibid). The interesting question then is how many of the land deals are made by China? China is often accused of buying large amounts of land in Africa, but according to Smaller et al. (2012: 1) the rumors are exaggerated. In terms of China's involvement, the authors of the Land Matrix found reports of 86 projects covering 9 million hectares of land, but Smaller et al. (2010) have only been able to confirm the existence of 55 projects covering 4.9 million hectares of land.

Some of the critique against land acquisition is concerned with the assumption that most of the products are exported from the producer countries. China refutes all claims that it is buying up land in Africa to meet a growing demand of imports to the country, as discussed in

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<sup>4</sup> The Land Matrix is an online public database of large-scale land deals. For more information visit: <http://landportal.info/landmatrix>.

section 2.3.1. But, even if China is not buying land with the intent of sending the products back home, it is still buying land abroad, which can have an impact on the local population. One argument is that foreign investments in land can help utilize land for agricultural production and in that way contribute to increase food production. This argument is based on the premise that there are large parts of agricultural lands in Africa not in use, despite the fact that many countries have to import most of the food they consume (Castel and Kamara, 2009: 2). By using the land for agricultural purposes, foreign investors can increase food production or create more employment for the local population.

However, land acquisition has also become very controversial and have been criticized on several grounds, including their economic, environmental and social impacts (Freeman et al., 2008: 3). A large body of evidence demonstrates the seriously negative effects of the current model of investments in land, not only from Chinese investments, but from investors all over the world (Smaller et al., 2012: 9). Jenkin (2011: 2) also disputes the claim that Africa is an abundant and ready source of land to be consumed by foreigners. Fan et al. (2010: 13) writes that one of the incentives to increase productivity and production in farming is by securing land rights. Access to land is central for the well-being of poor farmers (Brautigam, 2009: 271). Hence, when land is sold or leased to foreign investors it increases local farmers' vulnerability. Jacques Diouf, the director-general of the Food and Agricultural Organization (FAO) has observed that: "The race by food importing countries to secure farmland overseas to improve their food security risks creating a neo-colonial system" (cited in Freeman et al., 2008: 3). Braütigam and Xiaoyang (2009: 687) argues that "large-scale concessions of land have the potential to do more to change the face of rural Africa than all the oil wells and copper mines that have often been the focus of China's renewed interest in Africa."

According to Anseeuw et al. (2012: vii), most foreign investors end up competing for land with local farming communities. Further, "Investors have a tendency to target land with high yield gaps, good accessibility and considerable population densities" (ibid: viii). This can lead to displacement of local farmers from areas suitable for agricultural production. The Oakland Institute (2011) has written a report on the possible consequences of foreign investments in land in Zambia. So far, most communities have not yet seen widespread food security impacts as a result of commercial agricultural activities. There were many examples of displacement that interrupted food production, but only for a short time since, currently, there is enough land and water available, so displaced people have somewhere to go (ibid: 40). However,

people are worried about long-term food security should foreign investments continue to increase. As land pressure increases, displaced farmers will have to move to more and more marginal lands (ibid). The possible impacts of the displacement are many, including interruption of growing season, inadequate infrastructure at the new place, connections to the land is lost and yields drop (ibid: 44). In the forthcoming analysis, I will explore the extent of Chinese land acquisition in Zambia as well as the possible consequences on the local population.

The second issue I want to explore is how China can affect marketplace competition. Africa has become an outlet for Chinese consumer goods, creating new competition at the marketplace. For some consumers the availability of cheap Chinese products has given them access to goods they previously could not afford (Rupp, 2008: 69). However, for others, the cheap Chinese products are seen as an enemy; displacing local products and destabilizing African industries (ibid). In this thesis, I want to see how China's involvement in agriculture can affect the competition at local marketplaces. In relation to agricultural products, the process is a bit different from manufactured products. Instead of selling cheap food produced in China, they sell foodstuffs produced at the Chinese farms in Zambia. Nevertheless, the Chinese products may still displace products from local farmers. According to Braütigam and Xiaoyang (2009: 705), there is some sensitivity surrounding the competition between Chinese and African farmers at the markets. If Chinese farmers are able to sell their agricultural products at a cheaper price, they are likely to take customers from local farmers. This leaves local farmers with less income and increases their vulnerability in relation to cost of production and price fluctuations. At the same time, there will be an expansion in the production of foodstuffs (ibid). This means that the rest of the population will gain access to cheaper food, which helps increase food security. In the upcoming analysis, I will focus on the role Chinese farmers have at the market places in Lusaka and how they can affect local food security.

### **Skill and technology transfer**

Another area where Chinese aid and investments can have an impact on agricultural production and food security is in transfer of skill and technology. Agriculture has been very important for development in China and constant improvement in technology has contributed to growth in agricultural production. Based on this experience, some believe that China can be

valuable in terms of improving farming practices and agricultural production in Africa. There are some policymakers who believe “that China’s agricultural technology, seeds, and expertise can be a central part of the “win-win” pattern of engagement in Africa” (Brautigam, 2009: 234).

The emphasis on agriculture and technology was intensified with the establishment of the Forum on China-Africa Cooperation (FOCAC) in 2000. In terms of agriculture, FOCAC has focused on agriculture-facilitating infrastructure, agricultural/agro-processing projects and the creation of agricultural technology demonstration centers (Edinger and Sandrey, 2010). The latter focuses on skills and technology transfer specifically and have become an important strategy in Chinese aid to agriculture. In 2006, 40 Chinese and international experts developed the Africa investment roadmap, where they pointed to agricultural technology and seed cultivation as two areas where China could be competitive (Brautigam, 2009: 247). The experts recommended that China establish agricultural technology demonstration centers across Africa (ibid). At the fifth FOCAC conference in Beijing in 2012, President Hu Jintao announced five priority areas, where one of them involved continuing to increase assistance to promote development (Yuxiao, 2012). This included “building more agricultural technology demonstration centers as necessary to help African countries increase production capacity and facilitate food security” (ibid).

However, some argue that the transfer of skills and technology to Africa has not brought the same benefits as it has elsewhere (Lancaster, 1999: 53). While new technology has led to dramatic increases in agricultural production in much of Asia and Latin-America, it has not produced the same increase in Sub-Saharan Africa (ibid). Lancaster argues that one of the main reasons for that relates to organizational capacity. For technological advances to be successful they must adapt to local conditions and that requires local capacity capable of research (ibid: 54). The idea behind the agricultural technology demonstration centers is to help develop local knowledge and capacity. I will, therefore, explore whether the Agricultural Technology Demonstration Center in Zambia can contribute to the country’s organizational capacity and teach technology adapted to local conditions and needs.

Apart from agricultural technology centers, transfer of skills and technology can happen through the Chinese farms operating in Zambia and through Chinese cotton production. According to Li et al. (2012: 249), Chinese farms can play an important role in terms of transferring technologies. They believe that a large number of farm workers and surrounding



small farmers have learned practical and advanced technologies from their experience with Chinese farms (ibid: 250). Castel and Kamara (2009: 2) say that investments in land may benefit local farmers by giving them access to technology, connecting them to market opportunities, and enabling them to benefit from foreign experience”. However, it is also possible that the technologies are not suitable for the local production system and, hence, the population may not benefit from the transfers after all. Based on interviews with communities, farmers and CSOs in Zambia, the Oakland Institute (2011: 38) concludes that very few believed there would be any transfer of technology from large-scale land investments. They argue that it is unclear how large-scale mechanized agriculture would trickle down to a Zambian farmer that uses very simple technologies. There might be some knowledge transfer provided to out-growers in cotton production, but they argue that this is a fairly limited transfer of skills and technology (ibid). Zambia Land Alliance goes even further, saying that “Skill/technology transfer does not really happen. That idea is like a fourth year university project. I know it just happens on paper. In reality that never happens” (cited in The Oakland Institute, 2011: 38). In the forthcoming analysis I will examine whether transfer of skill and technology takes place at Chinese farms and in cotton production in Zambia.

## **Employment**

Besides providing new technology and skills, another way to help reduce poverty is through employment creation in the agricultural sector. Lipton (2001) has argued that no other sector has such a huge potential for employment creation and poverty alleviation. Both in China and Africa, agriculture is the main sector of the economy for labor absorption, with respectively 64 per cent and 54 per cent of the people engaged in agricultural economic activities (Li et al., 2012: 25). The World Bank argues that employment generation is a key avenue for local people to benefit from foreign investments (World Bank, 2011: 38). Castel and Kamara (2009: 2) writes that investments in land can create employment particularly for the rural population. However, there is also evidence suggesting that investments in land can fail to generate employment. The World Bank (2011: 61) found in their study of global interest in farmland that the amount of new employment generated by large-scale land acquisition are often well below expectations. While the data available on employment generation is often very limited, it does suggest that investments produce fewer jobs than expected and also promised (ibid: 63-64). Reasons for this can be that the project was not viable economically,

that the new jobs will mostly benefit those with higher education and not necessarily the poor rural population and finally that the job-related benefits may be reduced if the jobs are only seasonal or taken by migrant workers (ibid: 68-69).

While employment provides an income for the local population, factors like salary and working conditions can also affect poverty alleviation. Chinese companies are criticized for underbidding local firms, not hiring Africans (mostly Chinese workers) and there are concerns about the lax safety standards around hazardous jobs, especially in mining (Moyo, 2011: 111). Human Rights Watch (2011) has reported about abuse in Chinese-owned mines in Zambia. They argue that Chinese mining companies routinely ignore labor laws and regulations designed to protect workers and their right to organize (ibid). The Africa director at Human Rights Watch said that Chinese investments in mining could be beneficial, “But the miners in Chinese-run companies have been subject to abusive health, safety, and labor conditions and longtime government indifference” (ibid). Similar critique is depicted in local media in Zambia, where China is accused of not abiding local law, having poor employee safety and low wages (Chanda, 2011, Chaponda and Kapembwa, 2011, Kapembwa, 2010, Nkonde, 2011). I want to see whether the critique raised here is relevant in the case of China’s involvement in agriculture.

In Zambia most farm laborers are protected by the Minimum Wages Conditions Act (The Oakland Institute, 2011: 39). The minimum wage used to be around 260 000 kwacha a month (about US\$ 50), but in 2012 the government introduced a new minimum wage at 419 000 kwacha a month (about US\$ 80) (Mywage Zambia, 2013). However, there is little enforcement of these regulations; so many laborers are not protected by this law or any other legislation (The Oakland Institute, 2011: 39). This leaves many workers without any job security. Government officials in Zambia contend that involvement in the wage economy makes it possible for people to buy food, so it is no longer necessary for them to produce their own (ibid: 41). However, experience has shown that there is no substitute for one’s food sovereignty. Workers and farmers need to control their food security and not depend on the goodwill of employers, who may not provide wages big enough to live on (ibid). Data from the World Bank indicates that smallholder cultivation has advantages over wage labor, with smallholders income being two times to ten times what they could have obtained from wage employment only (World Bank, 2011: 35). In the forthcoming analysis, I will examine employment at Chinese farms as well as employment in cotton production.

## 2.4 Operationalization of the research questions

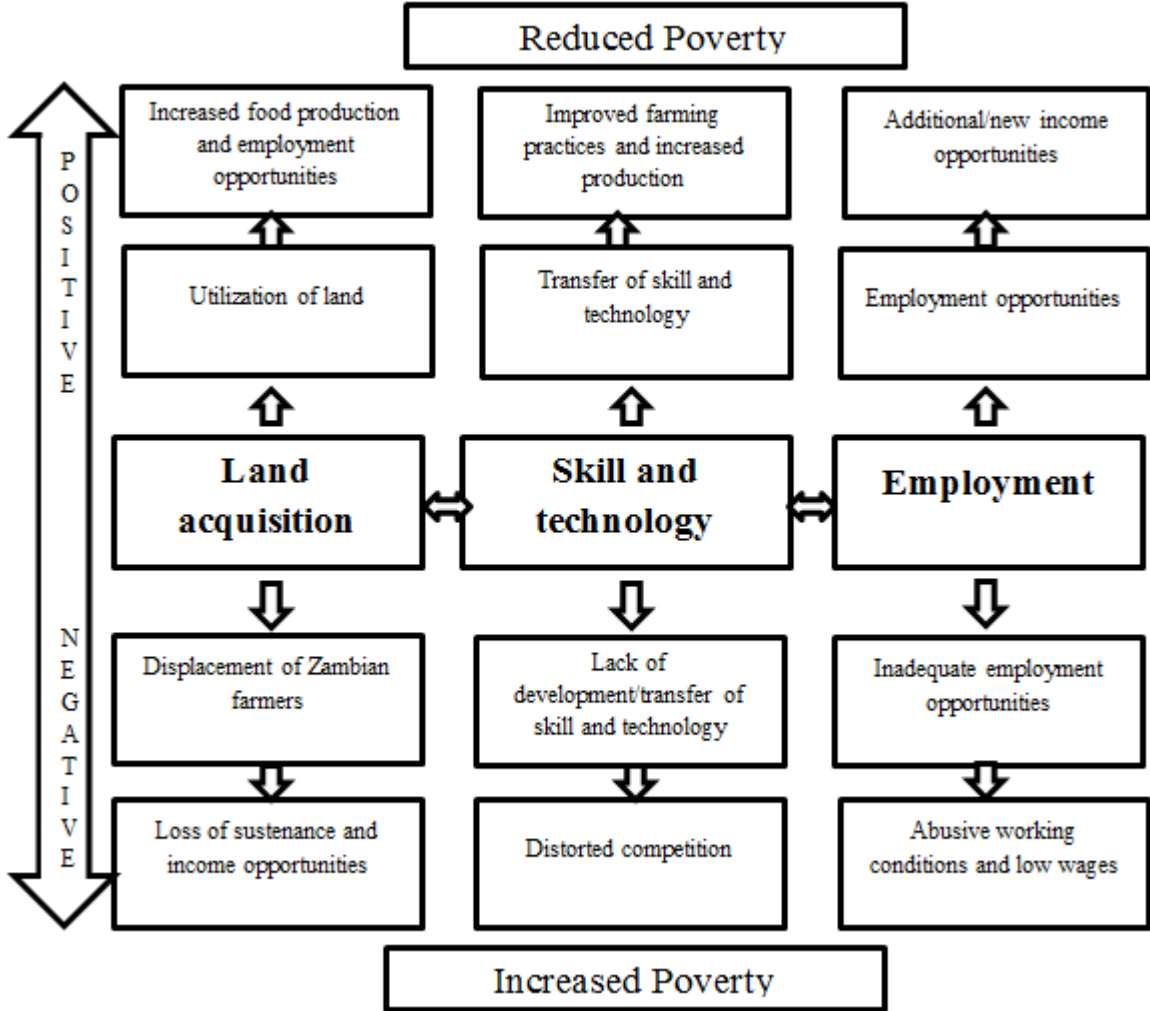
There is potential for poverty reduction in the African context through improved agricultural practices and new sources of income. I will address this topic by focusing on three inter-related sets of questions regarding possible implications of Chinese aid and investments in agriculture. The first question looks at the impact of rural land acquisition by the Chinese. The second question examines to what extent the transfer of skill and technologies from China has improved farming practices in Zambia. While the third question focus on whether Chinese aid and investments contributes to employment generation and thereby provide additional incomes for rural households.

My main focus will be on farmers and workers at the Chinese projects, who are directly affected by Chinese aid and investments. In terms of land acquisition, I will also look into the effect on the general population in areas where Chinese farmers sell foodstuffs at the local marketplaces. This is because the Chinese presence at the local marketplace can also affect their food security. With a narrow focus I will be able to find more coherent answers and make more accurate predictions about the effects of China's involvement. The aim of this thesis is to see if China's aid and investments in agriculture has contributed to poverty reduction for the groups I have mentioned. I want to see if they are better off after they have participated in or been affected by the Chinese projects.

In order to say anything about the implications of Chinese aid and investments, I have to operationalize the factors or variables into useful indicators. By using components of the theories presented in section 2, I have created a poverty sensitive framework (Figure 2.4). In accordance with the theories and the questions I want to answer, this framework shows potential benefits and risks coming from Chinese aid and investments in agriculture. In the middle of the figure are the three inter-related factors I want to explore in this study: land acquisition, skill and technology and employment. Above the middle are boxes representing potential benefits coming from Chinese aid and investments, which in turn can lead to reduced poverty. Below the middle are boxes representing potential risks coming from Chinese involvement, which can lead to increased poverty. In an ideal case, aid and investments from China would lead to better utilization of land, transfer of skill and technology and new employment opportunities, which would result in increased food

production, improved farming practices and additional income opportunities. The aim of this study is to examine whether this ideal case is taking place in Zambia.

Figure 2.4: Conceptualizing the theory to a poverty sensitive framework.



Before I explain how I want to answer my research questions, it is important to consider how well these factors capture the dynamics of poverty. This refers to the study’s concept validity. My analysis does not provide an exhaustive discussion on how China’s activities can impact poverty in Zambia. As I have already mentioned while discussing the definition of poverty, the concept is very complex and it is difficult to address all the different aspect of poverty in one study. There are also many possible impacts resulting from aid and investments in agriculture, like loss of cultural identity, migration, deforestation, climate change, loss of biodiversity and so on. However, it is impossible to focus on them all. Based on my perception of poverty and the theoretical perspectives presented in the previous sections, I

have decided on some key aspects or indicators that I believe capture the three research questions. This enables me to draw inferences from the indicators to the research questions.

The first research question involves Chinese land acquisition in Zambia. I wish to test the rumors of Chinese land grabbing in Africa (Smaller et al. 2012), by exploring the extent of Chinese land acquisition in Zambia. In addition to this, there are also some possible consequences I wish to examine. First, the study will see whether Chinese land acquisition has resulted in more efficient use of land and/or displacement of farmers. According to Castel and Kamara (2009), investments can result in more efficient use of land. Jenkin (2011), however, claims that Africa is not an abundant source of arable land. Anseeuw et al. (2012) and the Oakland Institute (2011) argue that investors end up competing for land with local communities, which can lead to displacement of the local population. I wish to see which of these perspectives is present and to what extent, in the case of land acquisition in Zambia. Second, the study will explore the effects of the competition between Chinese and Zambian farmers at the marketplace. The empirical material will be particularly analyzed in relation to the perspectives presented by Braütigam and Xiaoyang (2009). Their argument is that competition at the marketplace will be negative for local farmers competing with cheap Chinese products, but it will be positive for the local population who gain access to cheaper food products.

The second research question involves transfer of skill and technology. Based on the discussion presented in section 2.3.2, I will examine whether China's involvement in agriculture results in transfer of skill and technology and if it leads to improved farming practices or distorted competition. Brautigam (2009) argues that China can transfer skill and technology through agricultural demonstration centers, while Li et al. (2012) and Castel and Kamara (2009) argue that investments in land and Chinese farms can transfer skill and technology to local farmers. The above arguments believe in the positive attributes of China's aid and investments in agriculture. Lancaster (1999) and the Oakland Institute (2011), on the other hand, argue that transfer of skill and technology has not brought the same benefits to Africa as it has elsewhere and that the techniques used at Chinese farms would not benefit local small-scale farmers. I wish to examine which of these perspectives accurately depicts the situation in Zambia.

The third research question focuses on employment. Chinese employment in Zambia has received criticism from both international and local media (see section 2.3.2), and I want to

see whether this criticism is valid in the case of agriculture. I will explore whether Chinese aid and investment in agriculture generates employment and new income opportunities or if the employment creation is inadequate and result in abusive working condition and low wages. The theoretical perspectives show both scenarios. Castel and Kamara (2009) argue that investments in land can create employment. The World Bank (2011) has a similar argument, but they also believe that the employment generated is below expectations. The Oakland Institute (2011) argues that many workers are not protected by any regulations and that farmers lose control of their own food security when they depend on an employer. I want to see which of these perspectives is true in the case of Chinese employment in Zambian agriculture.

### **3 Analysis: China's Aid and Investments in Zambian Agriculture**

China is on the rise in Africa, with an increase in trade, aid and investments. This has caught the attention of Western countries who wonder what this new development will mean for Africa. Will it provide new opportunities for economic growth and poverty reduction? Or is it just another form of neo-colonialism, where Africa is used for its natural resources? In this study I wish to explore how China can affect poverty reduction. I focus on one case, Zambia, and examine the impact of China's aid and investments in agriculture. Agriculture is the main source of income for many Zambians and it is an important sector for poverty reduction.

Zambia is a sparsely populated country with the most of population concentrated in the developed areas along the railway, from the Copperbelt in the north, through the capital, Lusaka, and to the town of Livingstone in the South (Encyclopedia Britannica, 2013). In terms of poverty and life expectancy, calculations made by the UNDP (2013b) shows that 68.5 per cent of the population survive on less than US\$ 1.25 per day. Life expectancy in 2011 was 49 years, which is below the 2010 average of 54 years in Sub-Saharan Africa (World Bank, 2012). These estimates illustrate some of the problems that continue to affect Zambian society. Economic growth and development is important for further progress in the country.

Zambia's economy, however, is very dependent on mining and particularly copper mining (Encyclopedia Britannica, 2013). It is therefore important to broaden the economic base. But neither agriculture nor the manufacturing industry in the country is very developed (ibid). A study conducted by the World Bank presents a picture of an agricultural sector in Zambia producing well below its potential (World Bank, 2011). Based on their assessments, Zambia is in group 4 in the World Bank's farmland typology (ibid: xxxvi). Group 4 consist of countries with suitable land available and a high yield gap, which in theory suggests that Zambia has significant scope for improvements in the agricultural sector and can be considered a good candidate for FDI in the sector (Jenkin, 2011: 10). The Zambian government is also hoping to attract foreign investments to agriculture. Aid and investments by China to the country's agricultural sector is therefore welcomed by the government.

However, not everyone is positive towards China's increased involvement in the country. This was made clear in the 2006 presidential election campaign, where then opposition leader Michael Sata was very critical of the Chinese presence in the country. He denounced the Chinese for "bringing in their own people to push wheelbarrows instead of hiring local people" (French, 2011). He also made statements like "Zambia has become a province of China" and "The Chinaman is coming just to invade and exploit Africa" (ibid). Sata lost the 2006 election, but became President after the election in 2011. Naturally, many people were anxious about the future relationship between the two countries once Sata was elected into office. So far in his presidency, President Sata has toned down his criticisms and welcomed Chinese investments, even promising to strengthen their relationship (Lusaka Times, 2011). Whether this good tone continues is difficult to say, but it seems to indicate the importance of Chinese investments in the country as well as the tension that surrounds it.

### **3.1 Land Acquisition**

In the last few years there has been an increased awareness, in media and in academia, about global trade in land for both farming and other purposes. The term "land grab" has frequently been used to illustrate large-scale trade in land that often takes place in underdeveloped countries. The term usually awakes negative connotations of rich countries grabbing agricultural land from poor countries to assure their own food security. Based on the theoretical discussion on land acquisition, I explore the extent of Chinese land acquisitions in Zambia and the impacts on the local population

#### **3.1.1 Land utilization and displacement of farmers**

Before I explore the extent of Chinese land acquisition, I wish to briefly discuss the features of Zambia's tenure and land administration. This is critical for examining the possibility for foreign investment in land and smallholders' vulnerability in the process of land acquisition. In 1991 Zambia had a change of government and the country began to implement far-reaching economic reforms, including a liberalization process (Rakner, 2003). This led to a new and controversial land law that was passed in Parliament in 1995 (Lands Act of 1995), where the aim was to stimulate investments and agricultural productivity (Brown, 2005: 80). This land law is still in use and constitutes the principles of land tenure and administration in Zambia.



The land law recognizes two categories of land tenure: private titled land and customary (communal) land (ibid: 81). Titled land is owned by individuals who possess registered leasehold title and the individuals can sell and buy the land as he or she pleases. Customary land may indirectly be held, but the allocation and use of the land is administered by chiefs on behalf of the community (Ibid: 81). Customary land entails 94 percent of all land in Zambia, while titled land can only be found in and around Zambia's big cities (Adams, 2003: 10, Brown, 2005: 82). With the new land act, titleholders' property rights on private land were strengthened and it became easier for foreigners to own land (Brown, 2005: 85). The new law also made substantial changes to the administration of customary land, making it easier for both foreigners and indigenous Zambians living on customary land, to acquire private title to the land (ibid). Henry Machina and Carol Sorensen (2011: 255) state that after the act was passed "customary land can be said to be treated as a 'pool' from which private sector accesses land for conversion to leasehold, with tenure rights of customary land holders being inferior to the tenure rights of leaseholders". However, the new law states that no land should be allocated "without consulting any other person or body whose interest might be affected by the grant" (Government of the Republic of Zambia, 1995).<sup>5</sup>

The new Land Act appears to promote the conversion of customary land into private land and the strengthening private ownership. Brown (2005: 86) argues that "Although the 1995 Act ostensibly recognizes and protects customary land rights, the Act is designed to permanently diminish the amount of land held under communal tenure and to open up more land for investment". Following the new Act, it has become easier for foreigners to lease land in Zambia and in practice it has led to some foreign investments in agriculture as well as some tourism, but not as much as anticipated (ibid: 100). Brown's study shows, however, that the Act has created social and economic exclusion in some parts of the country, since the Act has accrued to local elites and foreign investors, not the local villagers (ibid: 100).

Another factor that makes it attractive to invest in land is that the rent on land is quite low (Li et al., 2012: 247). In the vicinity of Lusaka the annual rent is US\$ 5 for below one hectare of land, while 250 hectares costs US\$ 230 (see table A.3). If you want to rent land 20 km from Lusaka, 250 hectares will cost you US\$ 74. In sum, it seems the new Land Act has increased smallholders vulnerability in the land acquisition process, while it has made it easier for

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<sup>5</sup> The Lands act of 1995, Cap. 184, Part II, Section 4(c)

foreign investors to rent land. With this knowledge I will now turn to the question concerning the extent of Chinese land acquisition in Zambia.

It is often difficult to know the exact amount of Chinese aid and investments, as discussed in section 1.3. This is also the case in agriculture and, consequently, it is difficult to know the exact number of Chinese farms operating in Zambia. In the literature, one article can write that there are 12 Chinese farms in Zambia, while another can write that there are 30 farms (Hairong and Sautman, 2010: 314). Freeman et al. (2008: 16) writes that “according to Chinese reports, there are now 15 farms established in Zambia by six different state-owned enterprises with a total of 10,000 hectares”. In 2008 a British researcher found 23 Chinese farms in Zambia, with a total investment of US\$ 10 million (Marks, 2008). A year later, China’s ambassador to Zambia reported of US\$ 15 million-plus invested in more than 30 Chinese farms (Hairong and Sautman, 2010: 314). None of the reports on China’s involvement in agriculture provides a complete list of Chinese-owned farms. In order to present the most correct picture on the amount of farms, I have gathered information from different sources. This information is presented in table 3.1.

**Table 3.1: Chinese farms in Zambia**

| Farm                           | Size    | Products  | Total investment amount US\$ | Employment <sup>6</sup> |
|--------------------------------|---------|---|------------------------------|-------------------------|
| China-Zambia Friendship Farm   | 667 ha  | Wheat, maize, soybeans                          | 317,500                      | 134                     |
| Zhongken Estate Ltd            | 3573 ha | Wheat, maize, chicken, eggs                     | 1,089,218                    | 188                     |
| Zhongken Friendship Farm       | 2600 ha | Initially maize and wheat, later animal produce | 1,840,000                    | Unknown                 |
| Xiyangyang                     | 40 ha   | Wheat, maize, cabbage                           | Unknown                      | 34                      |
| Yangguang Farm                 | 80 ha   | Maize, wheat                                    | Unknown                      | Unknown                 |
| Zhonghua                       | 1400 ha | Maize, cattle                                   | 129,200                      | Unknown                 |
| Danhui Investments Limited     | Unknown | Unknown   | 300,000                      | 30                      |
| Sunlight limited company       | 80 ha   | Unknown   | 700,000                      | Unknown                 |
| China-Jiangsu Prospect Company | 40 ha   | Unknown   | 300 000                      | Unknown                 |

Sources: Compiled by author from Zambia development Agency (ZDA), Brautigam (2009: 254), Braütigam and Xiaoyang (2009: 696), Hairong and Sautman (2010: 315-318), Li et al. (2012: 248-249).

<sup>6</sup> The number of employment presented here consists of both Chinese and Zambian workers. However, based on information from farms that separated between Zambian and Chinese workers, it appears that the farms mostly hire Zambian workers. For example, in the case of China Zambia Friendship Farm; 130 workers are Zambian, while 4 are Chinese.

Based on this information, I have been able to confirm the existence of nine Chinese-owned farms operating in Zambia. Together the farms cultivate an area of approximately 10,000 hectares, which is consistent with Chinese statements. Many scholarly articles mention a higher number of farms operating in Zambia, but I have not been able to confirm their existence. I have a list of more Chinese companies involved in agriculture (see appendix), but there is not enough information to determine what activities they are involved in and I am thus unable to confirm whether they are farms or other agricultural enterprises. Most of the reports concerning China in agriculture discuss a few well-known examples of Chinese-owned farms, providing a glimpse of how Chinese farms operate. China State Farm Agribusiness Corporation (CSFAC) took a leading role in many of the agricultural experiments in Africa and naturally also in Zambia. In 1990, CSFAC provincial subsidiary Jiangsu State Farm Agribusiness Cooperation bought land in Zambia and established the China-Zambia Friendship Farm (Bräutigam and Xiaoyang, 2009: 691). Later CSFAC also established the Zhongken Estates Ltd and then again in 1999 they established Zhongken Friendship Farm (ibid: 697). The initial effort by CSFAC influenced other Chinese companies to invest in Zambia, so now there are more Chinese farms in Zambia that are partly state-owned or entirely private. Today, the Chinese farms focus on profit and can be seen as examples of the “Going Global” strategy, where China integrates aid and Chinese enterprises. This strategy is discussed in section 2.3.1. The problem with this approach is that it can be difficult to separate aid from investments, as argued by Söderberg (2010). In the case of Chinese farms in Zambia, the Chinese state provides financial help to several farms, but apart from that there are few similarities with traditional aid projects.

While I have been unable to confirm the existence of more Chinese farms, there are rumors circulating in media saying that China is involved in large-scale land acquisitions in Zambia. An article in the *Economist* wrote about a Chinese deal to grow biofuels on 2 million hectares of land in Zambia (The Economist, 2009). An Israeli land issue website, Land News, has stated that “Chinese farms control most of Zambia’s agriculture” and “Food that is produced in Zambia is eaten in China” (cited in Hairong and Sautman, 2010: 322). A Canadian journalist has written that “Another cause of friction is Chinese companies buying or acquiring vast tracts of agricultural land to grow crops to feed the burgeoning population at home and then importing Chinese labor ... to work the farms (Manthorpe, 2009). Another

story of Chinese involvement in African agriculture is the “Baoding Villages”,<sup>7</sup> where the first one was allegedly set up in Zambia in 1998 (Hairong and Sautman, 2010: 327). It consisted of Chinese farmers from Baoding, a city in Hebei province, who due to the Asian financial crisis were encouraged, by the Baoding City Bureau of Foreign Trade Promotion, to travel to Africa in order to promote farming and also gain profits (Aliyu, 2012, Brautigam, 2009: 266). According to the head of the Baoding City Bureau of Foreign Trade Promotion, there has been at least 28 “Baoding Villages” set up in 17 African countries since 1998 (Bräutigam and Xiaoyang, 2009: 704). Despite the large amount of villages set up in Africa, there is no actual evidence to support the story. The Chinese Embassy in Zambia had no knowledge of the Baoding farmers (Brautigam, 2009: 268). A survey was also conducted among Chinese migrants to Africa, to see if anyone had heard of or seen the “Baoding Villages“, but nobody had (Hairong and Sautman, 2010: 327).<sup>8</sup>

According to Hairong and Sautman (2010: 308), China is mostly engaged in agro-capitalism, which began in the early 1990s and consists of state-owned and private farms producing for the local market. The “Going Global” strategy presented in section 2.3.1 also highlights the fact that China is not interested in producing products overseas for the Chinese market. This is consistent with the information I have found on the nine farms presented in table 3.1. They mostly produce food products that they sell at the local market and none of the farms are larger than 4000 hectares. Based on the stories presented in the media, people get the impression that China is involved in neo-colonialism in Africa. But, looking into China’s activities in Zambia, I have found no evidence to support that any large-scale “land grab” is underway for the time being. Thus, in the case of Zambia it appears that the rumors regarding China’s big land acquisitions are exaggerated.

There seems to be other, more active countries involved in large-scale farming in Africa and in Zambia. In 2009 a UK-based NGO stated in a report on land grabs that while the media often focus on Middle Eastern and East Asian investors, they found that key investors are in Europe and Africa as well as the Gulf and South and East Asia (IIED, 2009: 2). While China does invest in farms in Zambia they have not prioritized the sector to the same extent as developed countries and some developing counterparts, in terms of aiding farms or making investments. There are 3000 modern farms in Zambia that are run like businesses and the

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<sup>7</sup> In Zambia the «Baoding Village» is supposedly a small colony-a gathering of Chinese farmers in a remote area.

<sup>8</sup> The survey was conducted by Chinese migrants to Africa on a website that discuss their lives. The website is now shutdown, but the site can still be visited at: <http://www.baodingcun.org/uploads/>

main investors come from Europe, the United States, South Africa, India and Pakistan (Li et al., 2012: 248). This suggests that so far, the extent of China's land acquisition in Zambia is limited to small-scale commercial farms selling on the local market, while other countries have been more active in large scale farming for export.

However, Hairong and Sautman (2010: 307-308) believe that we can get another form of Chinese investment in the future. They call it the agro-imperialist mode where Chinese firms join in the large-scale, export-oriented land grabs that have occurred since the food crisis began in the developing world in the late 2000s (ibid). They argue that it can become a feature of Chinese investments if Chinese leaders decide that the practice of buying large areas of land is an international standard that they are entitled to follow (ibid: 309). The issue of Chinese investments in land was also explained to me by a professor from the Department of Geography at the University of Zambia in Lusaka. He said that financial backing from China makes it possible for Chinese farmers to invest in farms overseas, and even though they are only concentrated on the local market for now, they do have the potential to grow.<sup>9</sup> The agro-imperialist mode is only a speculation of what might happen in the future, so Hairong and Sautman (2010) are unable to provide any definite evidence to support the claim. So far, there are only congestions, but considering that the Chinese state is not opposing its citizens to buy large areas of land and that the Zambian government supports Chinese investments in land, I will not rule out the possibility that China can move from small-scale farms to large scale farming. China would only follow in the footsteps of other countries, both developing and developed, who have already bought large areas of land for export farming.

Nevertheless, while China is not engaged in large-scale land grabbing in Zambia for the time being, its involvement can still have an impact on the local population. China's aid and investments in agriculture can have an effect on the efficient utilization of land and displacement of farmers. Castel and Kamara (2009) argue in the theory section that Africa only uses a portion of its arable land and investments by foreign countries, like China, can help utilize the land for agricultural production. This can also be the case in Zambia, which according to Scott (1995: 1) has a significant amount of arable land and a low usage rate. Investments in land can increase food production and at the same time create employment for Zambian workers. Chinese small-scale farms operating in Zambia today produce for the local market and in that way help increase the overall food production in the country (see table 3.1).

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<sup>9</sup> Interview, professor 1 at the University of Zambia (UNZA), Lusaka, 05 November 2012

Hence, the small-scale farms contribute to more efficient use of land, by increasing agricultural production and then sell the foodstuffs at the local market, instead of exporting it. The table also shows that the Chinese farms generate employment and I will come back to this in the employment section of the analysis.

There are, however, also problems connected with land acquisition. Foreign investments in land can lead to displacement of local farmers, who otherwise could have used the land for their own purposes. A large portion of the Zambian population depends on farming, making them vulnerable for displacement. This was also pointed out by a professor at the Department of Geography at the University of Zambia in Lusaka, stating that Chinese engagement in agriculture can become a challenge if people in rural areas end up losing their land.<sup>10</sup> The problem of displacement is more acute when foreign countries invest in large areas of land, making it more likely to affect rural villages and consequently their livelihood and food security. Since China is not investing in large areas of land it is less likely that it will lead to displacement of farmers. However, a policy synthesis from the Food Security Research Projects (FSRP) in Zambia has stated that “Despite having relatively low population densities, inadequate access to land is one of the major causes of rural poverty in Zambia” (Jayne et al., 2009: 1). There are areas of unsettled land, but it is often in remote areas with poor production prospects and in that sense unattractive for farming (ibid: 4). Following this line of argument, it may not be necessary with large-scale land investments to affect the rural population. According to information I have gathered, most Chinese farms in Zambia are located close to urban areas and mainly in the vicinity of Lusaka. This means that they settle in areas with a high concentration of farms, increasing land pressure. In the map of Zambia presented on page XI, I have marked the areas with Chinese farms with a circle. This illustrates the concentration of Chinese farms close to urban areas.

The number of Chinese farms is not overwhelming, but the location, attractive areas close to market places, might lead to displacement of some Zambian farmers who has to settle in areas unattractive for farming. This is in accordance with the argument made by Anseeuw et al. (2012) that investors have a tendency to target land with good accessibility and considerable population densities. Hence, Chinese farmers can contribute to more efficient utilization of land, but their involvement might also lead to displacement of farmers from good quality land

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<sup>10</sup> Interview, Professor 2 at the University of Zambia (UNZA), Lusaka, 13 November 2012.

to more remote areas. However, while there is evidence that Chinese farmers settle in these areas, there are only indications as to whether they cause displacement of local farmers.

In sum, it seems that large-scale land grabbing is not particularly common among Chinese investors in Zambia. While there are rumors about big areas of land being bought by Chinese firms or Chinese nationals creating “Baoding Villages” in Zambia, it has not been possible to confirm any of these accusations. For now, Chinese farmers are small-scale, producing for the local market. However, it is worth contemplating the possibility of increased Chinese presence in agriculture, since both the Chinese and Zambian governments are open to further Chinese land acquisition. All the same, it is worth noting that other foreign investors are already buying larger areas of land in Zambia and China would only be following an international trend. In terms of more efficient utilization of land and displacement of farmers, there is little concrete evidence to support either the argument of Castel and Kamara (2009) or the arguments of Anseeuw et al. (2012) and the Oakland Institute (2011). Based on the information I have presented it seems that Chinese farmers efficiently utilize the land for agricultural purposes, producing food for the local market and in that way help increase food production. At the same time the Chinese farms are concentrated in areas with good infrastructure and access to marketplaces, where they risk displacing Zambian farmers, who are left with less attractive land for agricultural purposes, further away from the marketplace.

### **3.1.2 Marketplace competition**

Most foreign investors in Zambia chose to produce agricultural goods for export, but Chinese farmers usually focus on the local market. Agricultural products from Chinese farms include maize, cabbage, wheat and chicken (see table 3.1), all of which is also sold by most small-scale Zambian farmers. According to statements made by a Chinese official, Chinese farms can help increase domestic production by selling their products locally instead of exporting (People's Daily Online, 2011). Similar opinions were raised by one of the managers at the Friendship Farm and at the Zhongken Estate, who said that they do not export any products because Zambia has a deficient production of agricultural food products (Bastholm and Kragelund, 2010: 132). This indicates that China is mostly concerned with local food security when it comes to investments in Zambia’s agriculture. This might have been the case up until the 1980s, but aid and investments in agriculture today is more characterized by “win-win” and “mutual benefit” (see section 2.3). Food security for the local population may be one

reason for selling their products at the Zambian market, but they also have other considerations, like access to the international market, the cost of exporting and the possibility for profit. Such considerations were mentioned by the managing director at Zhongken Estate, when she was asked why they did not export any products to China. She said China is too far away and there were no market for their products (Bastholm and Kragelund, 2010: 132). Hence, in addition to local food security, it seems that small-scale Chinese farmers believe they can make profit at the local market and see no need to venture into exports.

While it is intriguing that most Chinese farmers decide to sell their products locally, it is even more interesting to ask what the consequences might be for the local population. The answer appears to be two-fold, where the Chinese presence can be positive for the general population, but negative for Zambian farmers in direct competition with Chinese farmers. A professor at the University of Zambia explained that it is the people who compete with the Chinese directly that mostly complain about them.<sup>11</sup> Zambian farmers have expressed some concern about Chinese farmers selling their foodstuffs at the local marketplace. Brautigam (2009: 270) writes about the concern surrounding Chinese competition in the African market. She interviewed a national coordinator of Zambian Women in Agriculture who expressed her frustration and said that they would prefer if Chinese farmers stayed at the wholesale level and left the retail to local farmers (ibid: 271). A similar opinion was expressed by an informant at the Poultry Association of Zambia, who said that the Chinese should be in processing or export, not competing on the local market.<sup>12</sup> It seems a lot of the frustration stems from the feeling that Zambian farmers are unable to compete with Chinese farmers. Hence, Chinese farmers should concentrate on export and leave the local market to Zambian farmers.

There can be several reasons why Chinese farmers are able to produce at a lower price than Zambian farmers. The Chinese state provides financial assistance and incentives to farms operating in Africa, making such enterprises more competitive. A professor at the University of Zambia (UNZA) explained that Chinese investors are motivated because they get support from their government.<sup>13</sup> Further, she said that they have access to capital from China and they are able to get loans from Chinese banks. This has also been corroborated by a senior official from the Zambia-China Friendship Farm, according to whom some Chinese

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<sup>11</sup> Interview, professor 2 at the University of Zambia (UNZA), Lusaka, 13 November 2012.

<sup>12</sup> Interview, informant at the Poultry Association of Zambia, Lusaka, 19 November 2012.

<sup>13</sup> Interview, professor 1 at the University of Zambia (UNZA), Lusaka, 05 November 2012.



agricultural companies would have a difficult time without support from the Chinese government (in Bastholm and Kragelund, 2010: 133). It seems that involvement from the Chinese state is important for some of the farms to succeed. Bastholm and Kragelund (2010: 133) argue that “The support from the Chinese state is of paramount importance for the existence of Chinese agriculture in Zambia, and of crucial importance for its further progress”. In addition to financial assistance and other incentives from the Chinese state, there can also be other factors, like better technology and management systems, that make Chinese farms more competitive. The point is that Zambian farmers lack access to such benefits. This can lead to distorted competition in favor of Chinese farmers vis-à-vis Zambian farmers. The result can be loss of sustenance and income for Zambian farmers. Unable to compete with the lower Chinese prices, Zambian farmers risk losing customers and consequently their source of income. However, it is difficult to measure the exact consequences of the competition.

While Zambian farmers are concerned by the Chinese presence at the marketplace, there might also be something positive coming from the increased competition. Chinese farms can play an important role in balancing the prices on food and increasing the overall supply (Li et al., 2012: 249). Zhongken Estate, for example, is reported to produce 10 percent of all eggs sold in Zambia (Freeman et al., 2008: 17). The China-Zambia friendship Farm has over ten years supplied 2,900,000 trays of eggs, 2,810,000 chickens and retired layers and 2,730,000 liters of fresh milk to the food markets in Lusaka (Li et al., 2012: 249). These numbers indicate that Chinese farms contribute to local food supply and at the same time help stabilize or lower the prices, by creating more competition. A woman from a suburb in Lusaka thanked the Chinese farms, saying that she could now buy cheap and good cabbage all year around (ibid). Arguably, Chinese engagement in agriculture can increase food production and create more competitive prices.

Chinese competition has been particularly challenging in poultry production. According to a representative from the Poultry Association of Zambia, poultry production is a major source of income for Zambians.<sup>14</sup> In addition to this, poultry is an important source of protein for the rural population in Zambia (Songolo and Katongo, 2000: 43). In 2000 poultry production in Zambia was estimated at around 12 million broiler birds, 3 million commercial layers and 11 million village chickens (ibid). But the industry was estimated to grow. According to the executive manager at Poultry Association of Zambia, processed products has increased from

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<sup>14</sup> Interview, a representative from the Poultry Association of Zambia, Lusaka, 19 November 2012.

16 million birds in 2000 to 26 million birds in 2007 (Times of Zambia, 2007). While the increase in production is positive for the consumers, Zambian chicken farmers continue to worry about their future and many blame Chinese farmers for running them out of business. The conflict arises because Chinese chicken farmers are able to produce chickens at a lower price than most Zambian farmers, making Chinese farmers more competitive at the marketplace. One explanation for this is that Chinese farmers can produce at a larger scale and have better techniques than Zambian farmers. People critical of Chinese chicken production, on the other hand, argue that they are cheaper because the Chinese inject their chickens with growth hormones making them mature faster, but leaving the chickens tasteless (Sayila, 2006).

A representative from Zambia's National farmers Union (ZNFU) explained that they do not know how the Chinese can make their chickens grow so fast.<sup>15</sup> Some people suspect that they use GMO technology, which is illegal in Zambia. Further, he says that ZNFU is trying to lobby the government to scrutinize Chinese chicken producers. They want the government to check the health of Chinese chickens and see if the techniques they use are in conformity with local standards. The representative from ZNFU could not provide any evidence of foul play by Chinese farmers. However, similar attitudes have been expressed in newspaper articles and in the World Poultry journal. The case of Chinese chicken farmers in Zambia has even made international news, with an article and a short video presented by BBC. The titles were "Chinese chicken farmers ruffle Zambian feathers" and "Zambian chicken farmers lose trade to Chinese", and the case was made that Chinese farmers produced chickens at such low prices that the local Zambian farmers were unable to compete (BBC News Africa, 2011, Rowlatt, 2011). Zambian chicken traders were concerned that Chinese competition had destroyed local businesses (BBC News Africa, 2011). They also worry about the Chinese production and marketing practices, claiming that they are unfair (Sayila, 2006: 10). The farmers question how China can sell their chickens so cheap if they use local resources and management techniques (ibid). This is similar to the arguments made by the ZNFU representative. There is clearly a lot of suspicion surrounding Chinese chickens, but there is no concrete evidence to support or refute these allegations. Many of the Zambian chicken farmers are clearly upset and they truly believe that Chinese farmers use illegal methods, but there are also other more plausible explanations.

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<sup>15</sup> Interview, a representative from Zambia National Farmers Union, Lusaka, 20 November 2012

A representative from the Poultry Association of Zambia argued that Chinese farmers have a slightly higher number of chickens, which gives them an advantage over Zambian farmers.<sup>16</sup> Both Chinese and Zambian chicken farmers are considered small-scale, but Chinese farmers usually have between 3000-5000 chickens per batch while Zambian farmers only have 250-500 chickens per batch. Having a large production gives certain benefits, like concessions on feeds and this gives Chinese farmers an advantage. Another explanation can be that Chinese farmers have a lot of experience from farming in China and finds it easy to compete in the Zambian market (Sayila, 2006: 10). Both arguments presented here can help explain how Chinese farmers can sell their chickens at a lower price, without using harmful chemicals or growth hormones. However, the problems still remain for the Zambian farmers unable to compete with the Chinese.

In sum, the effects of market competition on food security are two-fold, similar to the arguments made by Braütigam and Xiaoyang (2009) in the theory section. The competition between Chinese and Zambian farmers at the market is most likely distorted due to the competitive advantage of Chinese farmers. This can lead to reduced income for Zambian farmers unable to compete with the lower Chinese prices, which is particularly visible in chicken production. At the same time, Chinese farmers help increase production and lower the price on certain foodstuffs, which is positive for the non-farming population who are able to buy more food. When it comes to land acquisition, there is not one definitive conclusion to draw about the consequences for the local population. It appears that China contributes positively with efficient utilization of land and by increasing food production. At the same time land acquisition may lead to displacement of farmers and loss of income for Zambian farmers who are unable to compete with lower Chinese prices.

## **3.2 Skill and technology**

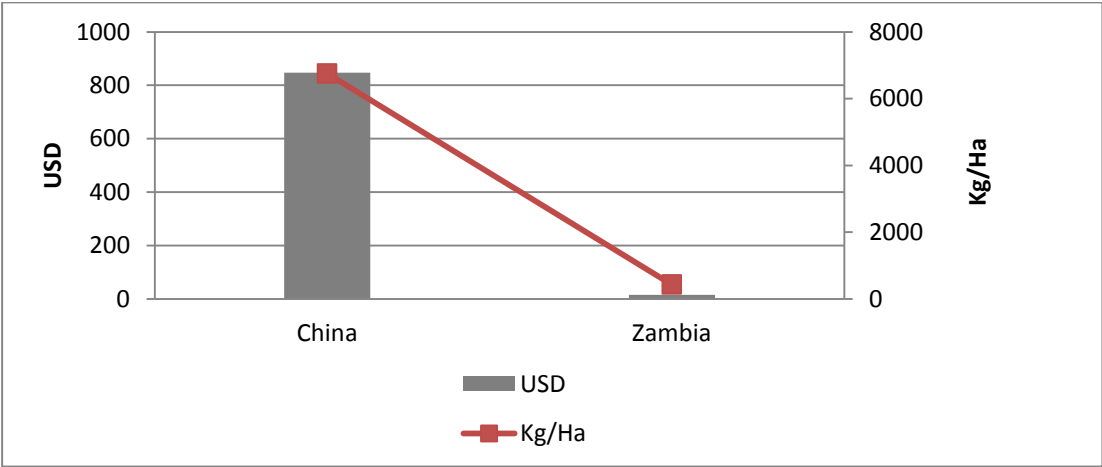
China is aware of the important role of agriculture for development and has, therefore, always focused on agricultural teaching and training components as an integral part of their foreign aid strategy. This has included visits by agricultural experts from China to Africa, scholarships for foreign students to study in China and agricultural demonstration centers set up in recipient countries. In Zambia there has been an increased focus on agriculture as an important component for poverty reduction. The government has looked for new ways to

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<sup>16</sup> Interview, a representative from the Poultry Association of Zambia, Lusaka, 19 November 2012.

improve agricultural production, including foreign aid and investments. In figure 3.1 there is a comparison of input-output ratio of maize production between China and Zambia. It shows that China’s productivity is 6,750 kg/ha, while Zambia’s productivity is only 430 kg/ha. This indicates the importance of improved farming techniques and the need for new technology in Zambia, to help improve production. Transfer of skill and technology from China can be one way to help improve agricultural production.

**Figure 3.1: Comparison of input-output ratio for maize planting between China and Zambia (Unit: USD; kg/ha).**



Source: Li et al. (2012: 197)

Before I turn to the discussion on transfer of skills and technology, I want to provide a short overview of Chinese aid to agriculture. According to a representative from the Ministry of Agriculture, China does not provide much aid in agriculture, except from some technical assistance, capacity building and the new Agricultural Technology Demonstration Center.<sup>17</sup> This is in accordance with arguments made by Wenping (2010) in the theory section, that China is mostly engaged in hardware projects, like infrastructure, rather than software projects, like capacity building. However, China has started to focus more on software projects in recent years. The most extensive aid project is the Agricultural Technology Demonstration Center. The Demonstration Center is supposed to be a permanent teaching facility, while the capacity-building and technical assistance consist of Zambians going to China for 2-3 weeks to learn or that China provides scholarships for Zambian students. According to the representative from the Ministry of Agriculture, there was another attempt at cooperation in agriculture through the South-South Cooperation, which is a project in the UN

<sup>17</sup> Interview, a representative from the Ministry of Agriculture, Lusaka, 03December 2012.

Food and Agricultural Organization (FAO).<sup>18</sup> However, China's proposal was not beneficial for Zambia. The suggestion was to send agricultural experts from China, but Zambia had to provide accommodation and medical care as well as pay for the travel expenses. The government found it difficult to accommodate these conditions. Even so, the Ministry of Agriculture continues to believe that China can contribute in agriculture. Over 70 percent of farmers in Zambia still use their hands and horse to tilt the land, so new technology and machinery can help improve production. The representative suggested that China could set up a plant to help repair machinery. A lot of the equipment brakes down and the since farmers are unable to fix it, they do not derive all the benefits from the new equipment.

### **3.2.1 Agricultural Technology Demonstration Center**

The Agricultural Technology Demonstration Center in Zambia is one of fourteen centers planned to be set up in Africa. The idea is that the centers will provide sustainability for agricultural projects and help agricultural businesses (Brautigam, 2009: 248-249). The Demonstration Center in Zambia is a cooperation project between The University of Zambia (UNZA) and the Chinese Jilin Agricultural University (Ministry of Agriculture, 2012). A Memorandum of Understanding was signed by the two partners in July 2009. The Center is located 15 km east of Lusaka city in Chongwe District, where they received 120 hectares from the University of Zambia, Liempe Farm (ibid: 1-2). In general the Chinese Ministry of Commerce supports the demonstration centers for three years before the respective countries takes over, unless an agreement is made where they commit to support the center for a minimum of five to eight more years (Brautigam, 2009: 249). The Chinese director at the Demonstration Center in Zambia was not sure when the Center will be handed over.<sup>19</sup> He believed it will take a few years, because Zambia is not able to manage it alone for the time being. The equipment already belongs to the Zambian government, but China will continue to manage the Center.

When I visited the Demonstration Center outside Lusaka, I talked to the director about the purpose behind the center, future goals and the different programs they provide. According to the director, the main purpose is to help the local population with more knowledge and new

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<sup>18</sup> Ibid.

<sup>19</sup> Interview, the director at the Agriculture Technology Demonstration Center, Chongwe District, 05 December 2012.

agricultural techniques and increase the production of crops by introducing high-yield crops.<sup>20</sup> An overview of the focus areas and the contents of the Demonstration Center are provided in table 3.2.

**Table 3.2: China’s Agriculture Technology Demonstration Center in Zambia**

| China’s Responsible Agency    | Date of Construction | Date of Completion | Focus Areas  | Contents of Construction  |
|-------------------------------|----------------------|--------------------|--|---|
| Jilin Agricultural University | November 2009        | April 2012         | Farming techniques, high yield crops, operating machinery (in the future: soil testing, computer programs) | Training center buildings, offices, laboratories, computer lab, production demonstration area, equipment and agricultural machinery |

Source: Compiled by author based on interviews conducted in Zambia, policy brief from the Ministry of Agriculture and Li et al., 2012: 235.

According to the director, the programs offered at the Center are open for Zambian farmers as well as university students and, so far, the Center has also trained quite a few Chinese/Zambian farmers. Since the opening in April 2012, the Center has all together trained 200 farmers and students. The plan is to train approximately 300 students each year and considering the amount of students they have trained since the opening in April, this seems very feasible. The Center has programs in vegetables, mushrooms, maize, soya and wheat, as well as classes in how to operate the machinery. In the future they also want to have programs in computers and soil testing for the UNZA students. The programs are short term, with the program about mushrooms lasting one week and soya two weeks. There are 12-15 people in each class. The manager group at the Center consists of Chinese nationals and they are eight in total. The group is obliged to stay in Zambia until the project is completed or handed over to the Zambian government. In addition to the Chinese teachers, there are some courses held by Zambians from the University of Zambia (UNZA) and the Ministry of Agriculture.<sup>21</sup>

Based on the information given by the director at the Demonstration Center, the aim of the Center is to provide Zambian farmers and students with new knowledge and technology that can help improve farming practices. The same information was provided in a policy brief

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<sup>20</sup> Ibid.

<sup>21</sup> Ibid.

from the Ministry of Agriculture (2012), where they stated that the Agricultural Technology Demonstration Center aims to provide modern and previously unpracticed farming techniques in Zambia. Further, it aims to boost human resource quality by providing innovative farming technologies to small scale farmers (ibid). The interesting question to ask then is what are the effects of the Demonstration Center on local farmers and on food production?

The Ministry of Agriculture (2012) claimed that through their practices “the Centre will contribute to national food security through improved agricultural productivity thereby improving the welfare of farmers”. In 2011, then Zambian president Rupiah Banda, was very positive of the Center saying that it would increase agricultural production and contribute to economic growth (Zambia Daily Mail, 2011). In his opinion the Center would provide small-scale farmers with more knowledge that could translate into increased production and in the end also poverty reduction, since there would be more food in rural areas. The Center would expose small-scale farmers to new and high-yielding crop varieties and Zambia could possibly record more bumper harvests (ibid). It seems that government officials in Zambia believe in the Demonstration Center and the benefits deriving from transfer of skills and technology, supporting the arguments presented by Brautigam (2009) in section 2.3.2, on the potential transfer of Chinese technology. The problem with the statements presented here is that they express hopes for the future, but no concrete evidence of what is actually taking place.

It is also the case that not everyone is positive to the new Demonstration Center. I interviewed a professor at the School of Agriculture at the University of Zambia, who provided me with his opinion on the process of establishing the center and the cooperation between the Center and the School of Agriculture.<sup>22</sup> The professor was skeptical of the decision-making surrounding the project, saying that the Chinese came in with a plan and that the School of Agriculture was not consulted. The Center is supposed to teach new techniques, but in his opinion it is an old model of doing things that is not viable. He questioned where the technology comes from and what techniques they are supposed to teach. He also asked whether the techniques are suitable for Zambia. The professor was clearly very skeptical to Chinese involvement in Zambia and particularly when it came to their engagement in agriculture. While his opinion on Chinese aid and investments is too one-sided, he does remark aspects that are worth discussing. First, Chinese aid is usually provided from

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<sup>22</sup> Interview, a professor at the School of Agriculture (UNZA), Lusaka, 20 November 2012

government to government and the people affected by the project are not always involved in the process. The issue of aid delivery was discussed in section 2.3 and Tan-Mullins et al. (2010) argued that Chinese aid is efficient but it can come at the expense of governance. However, this is not only a problem related to Chinese aid. Also, it might be that the process of establishing the Demonstration Center was conducted without the involvement of the School Agriculture, but they are cooperating on the project today. Second, he questions if a Demonstration Center is the best way to transfer skills and technology. Previous agricultural projects may have suffered from a lack of sustainability, as discussed in the theory section, but the Demonstration Center seems to be executed in an attempt to ensure sustainability. China will be in charge of the project as long as necessary and the cooperation with the University of Zambia (UNZA) ensures that the Center can remain a training facility after China withdraws from the project.

Finally, it is the question of whether Chinese techniques are suitable for Zambian farmers. According to a representative from the Poultry Association of Zambia, the Demonstration Center looks like it is involved in commercial production and not demonstration plots that would be more beneficial for small-scale farmers.<sup>23</sup> Most Zambian farmers are small producers and they do not use large equipment or machinery, which is common in commercial farming. However, the representative from the Poultry Association of Zambia had no evidence to support this statement. The director at the Demonstration Center explained that while the Center has equipment for commercial farming, they also have some equipment for small-scale farmers.<sup>24</sup> They often bring with them this equipment when they visit rural areas, to show local farmers. He also said that there is a lot of small-scale farming in China, so they have the experience to teach this form of farming. When I visited the Center, I was showed around on the grounds, where I could see both commercial machinery and more small-scale equipment. The director explained that many Zambians learn how to handle the machinery, but if the machinery brakes down they are not able to repair it. The end result is that the broken machinery just stands there. This problem was also mentioned by the Ministry of Agriculture when I interviewed them. The Demonstration Center has no programs for teaching Zambians to repair the equipment, even though, that type of knowledge would be

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<sup>23</sup> Interview, a representative from the Poultry Association of Zambia, Lusaka, 19 November 2012

<sup>24</sup> Interview, the director at the Agriculture Technology Demonstration Center, Chongwe District, 05 December 2012.



very valuable for sustainable development in agriculture. New technology is not of much help if the equipment needed to increase productions is not functioning.

In practice, the Demonstration Center is also adapted to local conditions and teaches techniques requested by farmers and students. The director explained that the Center's vision is to become a platform that can be used by everyone.<sup>25</sup> He said that Zambia is not a developed country and people need a place for learning. He hopes that the center can become a place for learning and producing more knowledge on agriculture. Therefore, the Center focuses on crop variety and high-yield crop protection as well as suggestions from Zambians on possible research. So far, Zambian farmers have asked for training in chicken feeding and cage fishing. In December 2012, they had a course in cage fishing at the Center, with Zambian teachers. In terms of research, they get a lot of students from UNZA who can use the facilities for their master research. All this helps build local capacity and makes the Center an important place for learning.

According to the director, most Zambian farmers come to the program to learn new techniques that they later use in their businesses.<sup>26</sup> Until now, the Demonstration Center has focused on courses in mushrooms, where they have trained 130 people. The director argues that the effect of the program is already visible in the market, where you can see people selling different types of mushrooms. Hence, new technology learned at the Demonstration Center has led to a diversification of products sold at the market and possibly contributed to new sources of income for participating farmers. When I visited the Center in December 2012, there was a training group from there the Northern Province. They participated in programs on both mushroom and soya. According to the director, the Ministry of Agriculture will support these farmers with 5 hectares of land to grow soya and with a greenhouse for mushrooms. I have not been able to confirm this information, but it indicates that cooperation between the Center and the Ministry of Agriculture can provide new opportunities for farmers. However, since the Center opened so recently, it is not easy to confirm the information I gathered and it is difficult to measure the effects on farming practices.

In sum, the Agricultural Technology Demonstration Center seems to contribute to skill and technology transfer, which is in accordance with views presented by Brautigam (2009). It teaches farmers new techniques and provides the opportunity to learn in areas requested by

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<sup>25</sup> Ibid

<sup>26</sup> Ibid.

the farmers. The new technology provides opportunities to diversify and improve farming practices, which can make Zambian farmers more competitive and increase food production. However, I believe that courses in how to repair agricultural machinery would further contribute to sustainability in agriculture.

### **3.2.2 Chinese farms**

Another area where Zambian farmers can learn new techniques is at farms run by Chinese. There are several Chinese farms operating in Zambia and they mostly produce the same foodstuffs as Zambian small-scale farmers (see table 3.1). There is some disagreement about whether Chinese farms are the right arena for learning new technology. Some believe that working at a Chinese farm provides employees with new skills and technology that they can later use in their own farming (Castel and Kamara, 2009, Li et al., 2012), while others believe that the techniques used at these farms are to no use for local small-scale farmers (The Oakland Institute, 2011).

In accordance with the first view, one Zambian worker explains in an interview that she loves to work at a Chinese farm, because she is able to learn new techniques (Li et al., 2012: 250). She also hopes to travel to China in order to learn additional techniques (ibid). The manager at Zhongken Estate Ltd also claims that workers gain valuable knowledge working for them. She argues that with the experience of working at the Zhongken farm, many Zambians can work as foremen on other farms (Hairong and Sautman, 2010: 320-321). Zhongken has even sponsored the studies of a local Zambian worker to become a technician (ibid). In this way, they support the transfer of skill and technology in Zambia. This is of course very positive, but Zhongken has existed since 1994 and during that time they have only sponsored one local worker. This indicates that there is more potential for technology transfer.

In opposition to the view presented above is a representative from ZNFU who argued that there is little transfer of skills and technology.<sup>27</sup> He said that a lot of the suspicion surrounding Chinese products comes as a result of the secrecy surrounding their production. If they had showed people what they are actually doing, people would not be so suspicious. He argued that when it comes to agriculture, the application is done by the Chinese while the hard work is left to the local workers. There might be some transfer of skill and technology, but not in

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<sup>27</sup> Interview, a representative from Zambia National Farmers Union, Lusaka, 20 November 2012

terms of application, which includes what they feed the chickens, chemicals they use etc. These are the areas where local farmers need new and improved knowledge. He argued that it is good if the Chinese have new and healthy technology, but it is useless if no one knows. He said “Let us share information and Zambia can buy into their technology which can increase production”.<sup>28</sup>

The views presented above focus either only on the benefits of skill and technology transfer or the challenges. However, it is possible that China’s involvement includes both benefits and challenges. According to a representative from the University of Zambia in Lusaka, many of the Chinese farms are highly mechanized and in those cases there is not much transfer of technology and skill, because the workers could never afford that type of equipment.<sup>29</sup> But he says that it is possible with technology transfer in the small-scale farms and perhaps also in poultry, where the Chinese are more competitive than Zambian farmers. This view is similar to Hairong and Sautman (2010: 321), who says that large commercial farm activities have little relevance for the vast majority of small-scale Zambian farmers that rely mainly on hand held tools. However, they believe that the everyday work at Chinese farms has enabled some modest skill transfer (ibid). Arguably, there is some transfer of skill and technology, which can improve farming practices for Zambian farmers. However, the extent of transfer is reduced by the lack of correspondence between techniques used at Chinese farms and the ones used by Zambian small-scale farmers. In addition, transfer of skill and technology is not a priority for Chinese farmers, who are there to make profit, not educate Zambian farmers. It is, therefore, unlikely to be much conscious training of Zambian workers to help them succeed in farming outside work.

While my focus here is mainly on Chinese farms and the Demonstration Center, I did interview two representatives from the Cotton Board of Zambia who could tell me something about the transfer of skills and technology in cotton production.<sup>30</sup> The local farmers producing cotton for Chinese companies are usually a part of what is called an “outgrowing scheme”, where the Chinese company provides the fertilizers, seeds etc. and then purchase the cotton from the farmers. According to my informants, there is not much transfer of skills and technology through the outgrowing scheme, but there can be some basic training given to farmers in ginning and the production of oil coming from cotton seeds. While most of the

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<sup>28</sup> Ibid.

<sup>29</sup> Interview, professor 3 from the University of Zambia (UNZA), Lusaka, 27 November 2012.

<sup>30</sup> Interview, two representatives from the Cotton Board of Zambia, Lusaka, 28 November 2012

companies send the cotton out of the country for processing, one Chinese company, Chipata Cotton & Oil Company, produces oil in Zambia that they sell locally. They use Chinese machines at the ginneries and local workers have an opportunity to learn the new machinery. Thus, there is potential for some transfer of skill and technology in cotton production, but so far only one company does some of the processing in Zambia.

In sum, there are diverging opinions on the extent of skill and technology transfer from Chinese farms. Some believe that new technologies are transferred to workers and local farmers, while others argue that the technologies present at Chinese farms are not relevant for Zambian small-scale farmers or that either way, Zambian workers are not allowed insight into the technology. The fact that Chinese farmers are secretive and tend to keep to themselves, makes it difficult for outsiders, being researchers, organizations or government officials, to know exactly what they are doing at the farms. The result is different opinions on whether transfer of skills and technology actually takes place. However, based on the literature and interviews conducted in Zambia I have been able to gather some information about transfer of skills and technology at Chinese farms. My findings suggest that Li et al. (2012) and Castel and Kamara (2009) were right in that some skill and technology is transferred, but the Oakland Institute (2011) is also right in arguing that the transfer is limited. It seems there are some transfer of skill and technology from Chinese farms as well as from cotton production, to Zambian workers and farmers. This new knowledge can help improve farming practices and possibly increase agricultural production. However, since most Chinese farms are more mechanized than Zambian small-scale farms, local farmers have been unable to use all the new technology in their own production. It also appears to be more potential for transfer of skill and technology if Chinese farmers were more conscious about the role they can play in terms of improving local knowledge. Once again the conclusions I draw are mostly indications that need to be further tested.

### **3.3 Employment**

In 2012, the Chinese Charge D'affaires remarked that China's total investments in Zambia had reached US\$ 2.1 billion and created more than 50,000 job opportunities (China's Embassy in Zambia, 2012). However, most of the jobs created by China are in mining and construction, where the amount of investments is much higher than in agriculture. Consequently most of the attention regarding Chinese employment has focused on these areas. The Zambian

government is positive to new investments leading to more jobs for the local population, but China has been criticized by local and international media for abusing worker rights. The main critique is that wages are low, working conditions are bad and there is little safety protection.

Based on the theoretical discussion on employment, I explore the extent of Chinese employment generation in agriculture and whether it contributes to new income opportunities for rural households. I will discuss if the critique against Chinese employers is valid in the case of agriculture. The focus is on workers at Chinese farms as well as on farmers producing cotton for Chinese companies in Zambia. The registered number of employment at Chinese farms are 386 people, while the number of farmers taking part in out-growing schemes with Chinese companies are 71 214 people. The amount of employment in cotton is so high because of Chipata Cotton & Oil Company who according to the Cotton Board of Zambia employ over 60 000 people.<sup>31</sup> There is a complete list of all registered Chinese agricultural companies in Zambia in the appendix. The list includes the amount of employment where the information was available.

### **3.3.1 Chinese farms**

In 2012 the government introduced a new minimum wage in Zambia that can have a big impact on the lives of workers as well as the amount of foreign investments. However, the new minimum wage was so recently introduced that it is very difficult to say whether or how it has affected employment. Therefore, after giving a short introduction to the new minimum wage and the discussion surrounding it, I will analyze Chinese employment without including this aspect. The minimum wage was increased by 160 000 kwacha to a total of 419 000 kwacha a month.<sup>32</sup> Critics have said that the new minimum wage is too high; making it difficult for businesses and private people to hire workers and perhaps leading to more unemployment (IRIN, 2012, The Post, 2012). Higher wages can also make Zambia less attractive for foreign investors who are often looking for cheap labor as well as a good

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<sup>31</sup> The amount of employment comes from statistics given to me by the Cotton Board of Zambia. The number is much higher for the Chipata Cotton and Oil Company than any other company and I am therefore not sure whether the number is accurate. Even so, the statistics do provide an indication of the amount of employment in the sector.

<sup>32</sup> The minimum wage differs between groups. General workers get a basic pay of 419 000 kwacha, but including allowances the minimum wage is 767 100 a month. Domestic workers get 250 000 kwacha a month plus additional allowances (Mywage Zambia). Farm workers are not mentioned in any of the categories, so I am not sure what category they belong to.

investment environment. An informant at Japan International Cooperation Agency (JICA) explained that the Chinese are hesitant towards a minimum wage.<sup>33</sup> For China, labor costs are low in Zambia with a daily wage for a farm worker at only US\$ 1 to US\$ 2 (Li et al., 2012: 248). With an increase in minimum wage, the labor costs will rise and make businesses less profitable. At the same time, the new minimum wage is beneficial for Zambian workers who receive higher wages, if the employers can afford to pay.

Many of the Chinese farms in Zambia hire local workers, but most of the farms are small-scale, so the amount of employment generated is not substantial (see table 3.1). It is, however, possible that these numbers are only full-time or permanent workers and that there are more part-time and seasonal workers, as discussed in section 2.3.2. For instance, China-Zambia Friendship farm is reported to have 134 workers in table 3.1, however Li et al. (2012: 250) writes that the farm creates jobs for 7,000 people, but it is mostly temporary workers in the busy season. A problem with temporary work, as opposed to full-time jobs, is the lack of security for the workers. In terms of assessing the effect of employment it is, therefore, not enough to count the number of jobs created, the quality of the job is also important. Is it a full-time job? Is the salary adequate? The information I found on employment in agriculture do to a certain extent comply with Chinese employment in other sectors in Zambia, like in mining and construction. They generate employment which provides an income for rural households, but workers complain about low salaries and poor working conditions (see the discussion on Chinese employment in Zambia in section 2.3.2).

When I asked my informants about employment at Chinese farms, many of them began by saying that they do create jobs, but there are some general problems faced by workers in Chinese companies. The main issues in all cases are working conditions and salaries. According to a representative in the Poultry Association of Zambia, working conditions at Chinese enterprises are not good.<sup>34</sup> He argued that there is little protection given to workers in terms of employment conditions and safety regulations. There are some Zambian farmers that also hire workers, but they follow national regulations. Chinese employees, on the other hand, do not follow the regulations provided. In his opinion they cut corners to maximize profit. Similar arguments were made by a representative from Japan International Cooperation Agency (JICA). She said that the main issue is how the Chinese treat their workers and this

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<sup>33</sup> Interview, a representative from Japan International Cooperation Agency, Lusaka, 12 November 2012.

<sup>34</sup> Interview, a representative from the Poultry Association of Zambia, Lusaka, 19 November 2012.

involves payment, working conditions and labor laws.<sup>35</sup> This statement is supported by a representative from KASISI-Agricultural Training Center, who said that China has a bad reputation when it comes to how they treat their workers.<sup>36</sup> In his opinion some of the problem areas are salaries, clothing standards and safety conditions.

Based on the above statements it seems that China does create jobs for the local population, but working conditions, salaries and safety protections are unsatisfying. The information I gathered from my informants are similar to observations made by Li et al. (2012: 251). They also find that Chinese farms use alternative methods to save productions costs. One way of doing that is to hire a large number of part-time workers to avoid paying social insurance (ibid). Sometimes the number of part-time workers is substantially higher than the number of full-time workers. They also mention that wages and hours of labor are often specified in substantial overtime, which is not very common in Africa or Zambia and can easily lead to dispute (ibid). A professor at the University of Zambia in Lusaka (UNZA) also commented that the Chinese work ethics is very different from the Zambian.<sup>37</sup> He said that the Chinese often have long hours with only small breaks, while Zambians are used to work from 8 to 4:30 and not during the weekend. This difference in work ethic can easily create conflict and it has done precisely that in Zambia. The relationship does not improve by the fact that Chinese wages and salaries are often lowest in the area, despite the high amount of work they demand (Li et al., 2012: 250). According to the informant at the University of Zambia in Lusaka (UNZA), there have been some adjustments made in terms of work ethic and expectations on both sides. I believe that with more cooperation they can learn to adapt even more to each other's work culture. This way, the employment generated by Chinese investors can be more valuable for the Zambian population. While I agree with some of the criticism against Chinese employment in relation to salaries and working conditions, I also believe that there are positive aspects that deserve more attention.

A professor from the department of Geography at the University of Zambia in Lusaka (UNZA) argues that Chinese investments can be beneficial if they give something back to the communities.<sup>38</sup> This can be in the form of employing more people from the local community and/or through the transfer of skills and technologies. He believed that the problem is

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<sup>35</sup> Interview, a representative from Japan International Cooperation Agency, Lusaka, 12 November 2012.

<sup>36</sup> Interview, a representative from KASISI-Agricultural Training Center, Lusaka, 6 November 2012.

<sup>37</sup> Interview, professor 3 at the University of Zambia (UNZA), Lusaka, 27 November 2012.

<sup>38</sup> Interview, professor 2 at the University of Zambia (UNZA), Lusaka, 13 November 2012.

people's perception of China as a bad employer. In his opinion people overreact when they talk about Chinese investments. Local companies as well as other foreign investors can have poor working conditions and low salaries. But since China is already condemned, we mostly hear about them. According to a representative from Zambia Development Agency, China can assist the Zambian government by moving the agricultural sector forward and create a push towards employment in rural areas.<sup>39</sup> The argument here is that China can be valuable in terms of generating rural employment and hence help provide additional income for rural households. This is similar to statements made by Castel and Kamara (2009), that investment in land can generate employment for the rural population.

There is also evidence to suggest that some Chinese farms show initiative to follow local guidelines and cooperate with local organizations. According to Hairong and Sautman (2010: 318) there are at least three Chinese farms that are members of Zambia National Farmer Union (ZNFU) and pay workers according to ZNFU standards: China-Zambia Friendship Farm (Sino-Zam), Xiyangyang and Zhongken (Johnken). The standards are somewhat lower than the national minimum wage, even though it is a result of negotiations with farm workers union and approved by the government.<sup>40</sup> Officials from ZNFU explained that farm workers are different from workers in mining and manufacturing, since they are often provided with lodging and subsidized utilities. The salaries are therefore somewhat lower than the national minimum (ibid). The three farms that are members of ZNFU all provide lodging for long-term workers and their families as well as subsidize their use of electricity and water (ibid).

One Chinese farm has even taken it one step further and provided additional benefits. The term used to describe the initiative at Zhongken Estate Ltd is Corporate Social Responsibility. It includes contributing to local economic growth and job creation, caring for the environment, complying with local laws and making philanthropic donations to support schools and hospitals (Hao, 2012). The farm is committed not only to its workers but also the nearby villages. According to Hao, the farm has provided jobs for about 7000 people since its establishment as well as settled residence for about 4000 households and lifted about 14 000 people out of poverty (ibid). In addition, Zhongken provides housing materials for farmers to construct their own lodges on the ground, if the housing facilities are insufficient (Hairong and Sautman, 2010: 319). The farm also has a vehicle that transports the children to and from

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<sup>39</sup> Interview, a representative from Zambia Development Agency, Lusaka, 27 November 2012.

<sup>40</sup> At the time this was written, early 2010, minimum wage in Zambia was 260 000 kwacha per month or about US\$ 50. In 2012 the minimum wage was raised to 419 000 kwacha per month (Mywage Zambia).



school and provides transport for workers who need urgent hospital visits (ibid). The information provided here highlights the positive side of employment at Chinese farms. However, the article does not provide any detailed information about the consequences of the Corporate Social Responsibility. It is, for example, not clear how the farm has managed to lift 14 000 people out of poverty. In terms of Chinese farms operating in Zambia, there are also problematic issues, even at Zhongken farm.

Workers at Zhongken continue to strike at least once a year to demand better pay and benefits. In 2010 workers were paid either on an hourly basis, at 1020 kwacha (US\$ 0,20), with a daily wage of 8000 kwacha (US\$ 1,54) or with a monthly wage of 280 000 kwacha (US\$ 54) (Hairong and Sautman, 2010: 319). In the last strike, both long-term and casual workers took part in the strike. While long-term workers get paid a little more and have more benefits than casual workers, they are just as vulnerable to dismissals (ibid). Workers complain that their wages are too small, however, they did say that Zhongken is slightly better than other farms because of the vehicle available for the workers and that they can borrow money from the farm in emergencies (ibid: 320). There are at least two lessons to be drawn from this: First, Zhongken farm seems to treat workers better than other farms; and second, workers are, in general, not completely satisfied with their salaries or working conditions at Chinese farms.

In sum, similar complaints are made about employment at Chinese farms as with Chinese employment in other sectors, as discussed in section 2.3.2. Unsatisfying working conditions and low salaries are the most common criticism. However, there is also evidence to suggest that some of the farms provide extra benefits to their workers. Based on these findings it seems that Chinese farms generate employment and thereby provide additional income for some rural households, but workers complain about low salaries and poor working conditions. This reduces the positive attributes coming from employment.

### **3.3.2 Cotton production**

In this section I will discuss whether Chinese engagement in cotton production leads to employment generation and more financial resources for local farmers. At the moment, there are four Chinese companies involved in cotton production in Zambia. However, one company, CIF Cotton Company, has recently begun its operations in Zambia, so there is no available information on the amount of employment etc. The three other cotton companies are listed in table 3.3 with the amount of farmers employed, together with the number of hectares

financed by the Chinese investors, the average yield and ginning capacity. The statistic is provided by the Cotton Board of Zambia that keeps a record on all companies involved in cotton production in the country.<sup>41</sup> The number of farmers employed by the Chipata Cotton & Cooking Oil Company is much higher than all the other cotton companies. The total amount of employment by Chinese companies in Zambia figuring somewhere above 50 000, so it seems unlikely that this one company employs so many farmers. However, the statistics can be seen as a rough estimate on the amount of employment.

**Table 3.3: Chinese Cotton Companies**

| Company name                        | Number of Farmers | Hectares Financed | Avarage yield in kg/ha | Ginning capacity (metrcic tonnes) |
|-------------------------------------|-------------------|-------------------|------------------------|-----------------------------------|
| Chipata Cotton & Cooking Oil        | 64,413            | 61,500            | 450                    | 60,000                            |
| Agriculture Science & Tech. Co. Ltd | 6,395             | 7,157             | 651                    | Non                               |
| Zhonghe Investment Coproration      | 406               | 530               | Unknown                | Non                               |

Source: Statistics from the Cotton Board of Zambia.

A representative from the Cotton Board of Zambia explained that all Chinese companies take part in an out-growing scheme with local farmers.<sup>42</sup> An outgrowing scheme is when a company controls a certain area and the farmers in that area produce cotton for that specific company. The company provides the farmer with seeds, chemicals, sprayer and extensions and at the end of the year the farmer sells his cotton to the company. It is a type of employment relationship, between the Chinese company and the Zambian farmer. Another area where China could create employment is in manufacturing of cotton products, but there are no Chinese companies involved in this form of production in Zambia today (except some ginning in Chipata Cotton & Cooking Oil). The representative from the Cotton Board of Zambia said that China used to run a factory in Lusaka, called Mulungushi Textiles, where they produced clothes and other textiles. In his opinion the factory was very successful in the first 4-5 years, but then they started to reduce their investments in the out-growing scheme and buy more cotton instead. In 2008 they could not sustain the production and in 2010 they decided to close the factory. The factory employed 2000 workers and when it closed down all the workers lost their jobs (African Labour Research Network, 2009: 22). But the closure also

<sup>41</sup> The statistics were given to me when I visited the Cotton Board of Zambia in November 2012.

<sup>42</sup> Interview, a representative from the Cotton Board of Zambia, Lusaka, 28 November 2012.

affected cotton farmers, who used to sell their cotton to the factory. It is these farmers I will focus on in the following section.

The out-growing scheme creates safety for the Zambian farmers, since the Chinese company provides in-puts to produce the cotton and they also guarantee to buy the cotton once it is harvested. Statistics from the Cotton Board of Zambia shows that many Zambian farmers participate in an out-growing scheme with a Chinese company (see table 3.4). Hence, Chinese investments in cotton seem to contribute to employment generation in Zambia. Participating in an out-growing scheme can, therefore, result in a secure income for farmers and provide new incomes for rural households. According to an economist at the Paris-based Lipade Research Institute, the income from Chinese investors is very important for poor families, especially in rural areas, who otherwise lack opportunities for jobs with monthly salary (FOCAC, 2012). In addition to a more secure income, a representative from the Cotton Board of Zambia noted that the company and the farmer usually agree on a price for the cotton, but as all companies compete for the farmers the companies often offer some incentives for the farmers to join them.<sup>43</sup> They have to offer better services in either in-put or pricing. This provides additional resources for farmers involved.

The benefits of participating in an out-growing scheme have also been highlighted by the Forum on China Africa Cooperation (FOCAC). FOCAC (2012) argues that Chinese investments in agriculture benefits poverty-stricken families in Africa. They specifically mention a farmer from the Eastern Province in Zambia who has benefited from a Chinese project in cotton production (ibid). On 1.2 hectare of land the farmer harvested cotton that has helped him as well as his family to live a better life. He planted the cotton with free seeds, fertilizers and farming instruments from a Chinese investor and the same investor will also buy the cotton once it is harvested (out-growing scheme). The return will be approximately US\$ 800 per year, which is enough for the farmer to support his family and even pay part of the education fee for his children (ibid). This story shows the benefits of Chinese investments in cotton, but it is unlikely that this one farmer can represent all farmers participating in an out-growing scheme with a Chinese company. While employment can provide an income for farmers, there are also some problematic issues in terms of depending on a foreign investor, as illustrated in the case of Mulungushi Textiles.

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<sup>43</sup> Ibid.

The argument so far has been that Chinese investments can create a more secure income for rural households, but that is not always the case. There are also some challenges related to Chinese investments in cotton. The representative from the Cotton Board of Zambia said that the Chinese usually operate with minimal investment and maximal returns.<sup>44</sup> In the sense that they invest as little as possible in the farmers, but still expect big returns. The ZNFU president has also complained over the lack of value addition in the cotton sector, saying that investors buy the cotton and export it without adding much value to the cotton producers (Chanda, 2012). The ZNFU president did not, however, explain what he meant by value adding. I believe his statement can be interpreted in two ways. First, Chinese investors only buy raw cotton in Zambia and then process it in other countries, leaving little additional value in the country's cotton production. Second, his statement can be similar to the opinions expressed by the representative from the Cotton Board of Zambia; that the Chinese invest little in the local farmers and in that way add little value to the production. A possible consequence of the latest argument is that the local farmers are left with less financial resources, since the investor is more concerned with maximizing his own profit. The issue was well summarized by a representative from MUSIKA – Making Agricultural Markets Work for Zambia – who said that Chinese companies provide some inputs in cotton production, but they do not invest much in the farmers or in the value-chain.<sup>45</sup>

The representative from the Cotton Board also said that the Chinese want to be perceived as caring actors, but they have received criticism for their focus on profit.<sup>46</sup> Chinese companies are known to buy cotton from farmers outside the out-growing scheme. This is called out-buying and it leaves the farmers more vulnerable because they lack support from an investor. Out-buying makes it possible for investors to buy cotton without giving any in-put to farmers and without making agreements beforehand to buy the cotton once it is harvested. The result is insecurity for the farmers who have to take greater financial risks without the backing of an investor. When Chinese investors take part in out-buying they undermine the out-growing system and reduce farmers financial security. Chinese companies are not the only ones that are involved in out-buying, but it seems to be more common with Chinese investors. The

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<sup>44</sup> Ibid

<sup>45</sup> Interview, a representative from MUSIKA, Lusaka, 22 November 2012

<sup>46</sup> Interview, a representative from the Cotton Board of Zambia, Lusaka, 28 November 2012

Cotton Board wants to put an end to this practice, in order to make sure that Zambian farmers are well taken care of.<sup>47</sup>

Another challenge is with the out-growing scheme itself. Farmers in an out-growing scheme can become very dependent on the foreign investor, as argued by the Oakland Institute (2011) in section 2.3.2. If the investor decides to not buy the cotton, local farmers are left with no income and no food production of their own, since the land is used for cotton production. This can reduce farmers' financial resources and increase their vulnerability. One example of this is Mulungushi Textiles. When the factory shut down, many farmers were left without an income since there where no one to buy the cotton they had produced. In the Eastern Province there would be huge consequences if the Chipata Cotton & Cooking Oil Company shut down, considering the amount of farmers employed by the company. However, it is worth noting that this can happen with other foreign companies involved in cotton as well, not only the Chinese.

In sum, Chinese investments in the cotton sector help generate employment in Zambia and the out-growing scheme provides farmers with additional income opportunities. However, Chinese investors often operate with minimal investments in the farmers and participate in out-buying, increasing farmers' vulnerability. These findings support Castel and Kamara's (2009) argument that investments in land generate employment. But it also support the arguments made by the Oakland Institute (2011); that with wage employment, farmers and workers become dependent on the goodwill of employers, which makes them more vulnerable.

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<sup>47</sup> Ibid.

## 4 Conclusion

China is the second biggest economy in the world and it is exceedingly perceived as an important trading partner both for Western countries and for the developing world. China is becoming an important factor in the international arena, both in terms of politics and economy. Following this development, Chinese officials have begun to talk about the “Chinese Dream”, where the essence consists of national prosperity and rejuvenation of the Chinese nation (News of the Communist Party of China, 2013). According to Chinese officials, the pursuit of this dream will bring peace and opportunities, not only to China, but to the world. The methodology used to achieve the dream can provide inspiration to other developing countries that are left fumbling in the dark (Tao, 2013).

China claims to provide an alternative path to development, one similar to its own experiences in recent years. By following China’s example, developing countries can strive for economic growth and poverty reduction. While China believes in its own development path, it is interesting to consider what the consequences of China’s growth and dreams might be for other countries. Is the “Chinese dream” in coherence with other nations’ dreams? Is national prosperity in China in agreement with national prosperity for African nations?

China has been active in Africa for over half a century. However, in recent years the extent of involvement has intensified. From being a small provider of foreign aid, China is now the continent’s third largest trading partner and both the volume of investments and development aid have increased dramatically. Chinese investors can be found in virtually all sectors of the African economy, including manufacturing, construction, mining and agriculture. The importance of the relationship was recently made clear with the visit by China’s new president Xi Jinping to several African countries in early 2013. During his visit, President Xi announced that China will extend a US\$ 20 billion credit line to the continent over the next two years (Jing and Yuanqing, 2013).

This increased involvement has created a lot of discussion in the West, as well as in Africa, about the motives behind China’s foreign aid and whether China is only interested in the continent’s rich natural resources and/or whether it is also concerned about development and poverty reduction. This thesis, however, is one of few attempts that tries to go beyond a descriptive analysis of China’s involvement and focuses on China’s concrete impact on

poverty reduction. Towards this end, the study analyzes three issues related to China's aid and investments in *Zambian agriculture*. The issues include land acquisition, skill and technology transfer and employment. The purpose is to examine whether these issues contribute to poverty reduction in *Zambia*.

With regard to the extent of Chinese *land acquisition*, the findings of this study do not support the rumors of large-scale land grab by China in Africa. In *Zambia*, China is mostly engaged in small-scale farming and none of the farms in this study are over 4000 hectares in size. It is, however, possible that China can become involved in large-scale land acquisition in the future, since large investment in land is not disapproved by the *Zambian* or Chinese government. If it were the case, China would only follow in the footsteps of other countries (*South Africa*, *India*, the *United States*) that are engaged in large-scale farming in *Zambia*. For now, China is mostly engaged in small-scale farming activity where they produce food for the local market. The fact that they sell their products locally helps increase food production and availability and, in that way, Chinese farmers contribute to more efficient utilization of land. However, while the number of Chinese farms in *Zambia* is not overwhelming, the location of farms in attractive areas close to the marketplace might lead to displacement of local farmers. Chinese farms tend to be concentrated in populated areas with good infrastructure, which might lead to displacement of some farmers who have to settle in areas less attractive for farming.

Another consequence of Chinese aid and investments is the increased competition between *Zambian* and Chinese farmers in the local marketplace. The competition is positive for people buying food in the market, since some of the products are cheaper, but it is problematic for local farmers who are often unable to compete with the lower Chinese prices. It seems that Chinese farms help increase food production and contribute to lower the price on some agricultural products, which can be positive for poverty reduction. However, they can also increase the vulnerability of small-scale farmers who risk displacement and reduced income from competition at the local marketplaces.

In terms of *skill and technology transfer*, my findings indicate that there is some transfer, but not all the techniques are useful for *Zambian* small-scale farmers. The Agricultural Technology Demonstration Center tries to adapt to local conditions and it has equipment for small-scale farmers as well as machinery for commercial farms. The Demonstration Center teaches local farmers new techniques and it presents the opportunity to learn in areas

requested by the farmers. The new skill and technology provides participants with an opportunity to diversify and improve farming practices. This can make Zambian farmers more competitive and help increase production. However, the study also shows that the Center could contribute more if it offered programs on how to repair farming machinery, since new equipment is of little use if it is not working.

When it comes to Chinese farms, and to some extent cotton production, there are some small transfer of skill and technology, even though, not all the techniques used at the farms are relevant for Zambian small-scale farmers. The new knowledge obtained by working at farms and in cotton production can help improve farming practices and possibly increase production. It is, however, argued that there is little transfer of skill and technology in application, an area where Zambian farmers could really learn from the Chinese. In cotton production the transfer of new technology takes place in the production of oil from cotton seeds and not in the farming of cotton. I believe there is more potential for skill and technology transfer if Chinese farms are more conscious about the role they can play in improving local knowledge.

The final issue involves Chinese *employment* in agriculture. Many Chinese farms hire local workers but it is mostly on a part-time basis, which is less secure than a full-time job. Chinese companies have received a lot of criticism for poor working conditions and low salaries, especially in the mining sector in Zambia. My findings suggest that some of the same problems can be found in the agricultural sector. Workers frequently complain of unsatisfying working conditions and low salaries. However, there is also evidence of Chinese farms providing some extra benefits (lodging, subsidized utilities) to their workers. Hence, working at a farm can provide additional income for rural households, but poor working conditions and low salaries reduce some the positive attributes that come from employment.

Cotton production appears to be the sector in agriculture that generates most employment. Local farmers participate in out-growing schemes with Chinese cotton companies. This can create a secure income for the rural population, which is not very common in rural Zambia. However, Chinese investors often operate with minimal investments and maximum returns as well as participate in out-buying, which can create insecurity for local farmers. In addition to this, out-growing schemes can create a dependency on foreign investors, which increases farmer vulnerability.



Taken in consideration the challenges with collections of data and measurement of poverty, my findings indicate that China contributes to poverty reduction by improving farming practices, increasing food production and generating employment. However, the findings also suggest that China's involvement can lead to loss of income for local farmers in direct competition with Chinese farmers and, in terms of employment, there are complaints about poor working conditions and low salaries, which results in insecurity and vulnerability for the workers. China's aid and investments appears to create both benefits and challenges for the local population in Zambia. My findings both support and refute some of the perspectives presented in the theory section. In several instances, I find evidence to support both sides of an argument, for example, that land acquisition can lead to displacement of farmers as well as more efficient utilization of land. This confirms the results of my analysis, that there is no straight forward answer to whether China contributes to poverty reduction or not. China can help reduce poverty for some groups in the population, while it creates challenges for others.

While most studies on China's engagement in Africa are descriptive, this thesis has attempted to go beyond a characterization of China's interests and focused down on the actual consequences of Chinese engagement. It is, however, impossible to test all aspects in a single study and there are other issues worth contemplating that are outside the borders of my thesis. One suggestion for further research is to include more theory on foreign investments. This could help capture all the aspects of China's foreign aid, since aid and investments are not clearly separated in China's aid policy. In terms of China's involvement in agriculture, it seems to be more engaged with foreign investments than foreign aid, so more theory on investments could be fruitful for the discussion. Another suggestion is to do a comparison with China's involvement in other countries. It can provide new and useful information in terms of the effects on local society. A comparison between different Sub-Saharan countries can also provide a more accurate and complete picture of the effects of Chinese aid and investments in Sub-Saharan Africa.

China will most likely continue to invest in countries all over the world and more knowledge on the impact of this involvement can make it easier for local authorities and the international community to take precautions and provide the right guidelines. Until now, Western countries have often been skeptical to China's engagement and criticized its foreign aid policy. Perhaps it is time for more cooperation, where they can all learn from each other's experiences. This study has showed that there are positive aspects of China's aid and areas where it can

contribute with expertise, like in skill and technology transfer. China's alternative to aid has also proved to be efficient, something that is often criticized in Western foreign aid. However, China's non-interference policy and the lack of transparency is problematic. By working together China's foreign aid might become more transparent and it will be easier to know what the impact might be for recipient countries.

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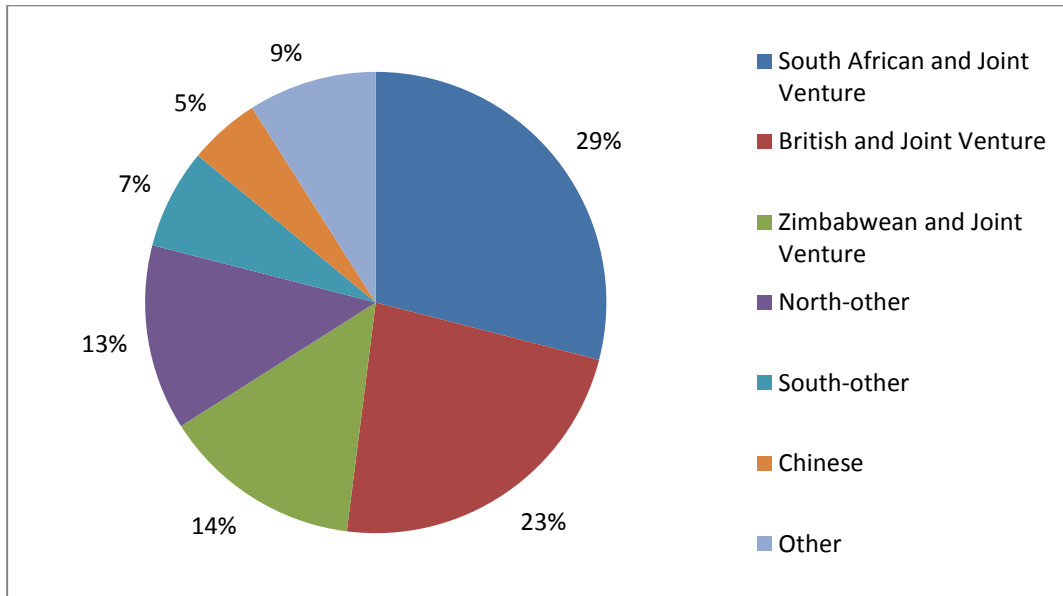
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# Appendix

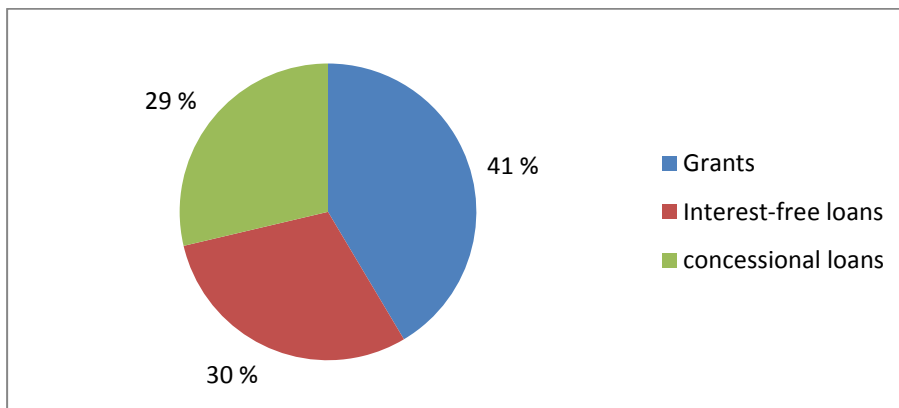
## Figures and tables

Figure A.1: Proposed foreign investments in Zambian agriculture 1992-1999.



Source: Jenkin (2011: 16).

Figure A.2: China's total foreign aid up to 2009.



Source: Information Office of the State Council (2011)

**Table A.1: Prices of land in Zambia**

| Land Prices < 20 km in Lusaka, Ndola and Jitewei |                    | Land prices > 20 km in Lusaka, Ndola and Jitewei |                   |
|--|--------------------|--|-------------------|
| Area   | Annual Rent (ZMK)  | Area   | Annual Rent (ZMK) |
| Below 1  | 30,000             | Below 1  | 20,000            |
| 1-50   | 30,000 + 5,000/ha  | 1-100  | 20,000 + 250/ha   |
| 50-100   | 275,000 + 4,000/ha | 100-250  | 44,750 + 500/ha   |
| 100-250  | 475,000 + 2,000/ha | Above 250  | 119,750+1,000/ha  |
| Above 250  | 775,000 + 1,500/ha |  |                   |

Source: Li et al. (2012:247)

**Table A.2: Chinese agricultural companies in Zambia**

| Activity                                     | Company name                                    | Employment |
|--|---|------------|
| Chinese Farms                                | China-Zambia Friendship Farm                    | 134        |
|  | Zhongken Estate Ltd                             | 188        |
|  | Zhongken Friendship Farm                        | Unknown    |
|  | Xiyangyang                                      | 34         |
|  | Yangguang Farm                                  | Unknown    |
|  | Zhonghua  | Unknown    |
|  | Danhui Investments Limited                      | 30         |
|  | Sunlight limited company                        | Unknown    |
|  | China-Jiangsu Prospect Company                  | Unknown    |
| Chinese Cotton Companies (Outgrowing scheme) | Agriculture Science & Tech. Co. Ltd.            | 6,395      |
|  | Zhonghe Investment Corporation                  | 406        |
|  | Chipata Cotton & Cooking Oil                    | 64,413     |
|  | CIF Cotton Company                              | Unknown    |
| Other  | Agriculture Science And Technology Limited      | Unknown    |
|  | Agriyana Investments Limited                    | Unknown    |
|  | Baojixiang Development Company Limited          | Unknown    |
|  | Camco Farms Limited                             | Unknown    |
|  | Chibila Investments Limited                     | Unknown    |
|  | China Harvest Investments Limited               | 25         |
|  | China Jiangsu Prospect (Z) Limited              | 30         |
|  | China Jiangx Corporation For International      | Unknown    |
|  | Economic & Technical Cooperative Zambia Limited | Unknown    |
|  | Dacton Limited                                  | Unknown    |
|  | Deck Investments Limited                        | Unknown    |
|  | Fur Da Investments Limited                      | 20         |
|  | Feedtek Limited                                 | Unknown    |
|  | Gold Sacks Investments Limited                  | Unknown    |
|  | Happy Brothers Farming Limited                  | Unknown    |
|  | Hong Fa Company Limited                         | 35         |
| Hongxiang Company Limited                    | 26  |            |

|   |               |
|---|---------------|
| Hua Xing Company Limited                              | 20            |
| Hua Zan Investments Limited                           | Unknown       |
| Inter Chain Farm Invsetment Ltd                       | 13            |
| Jeanny Enterprises Limited                            | Unknown       |
| Kaifeng Agriculture Investment                        | 39            |
| Le Yun Investments Limited                            | 20            |
| Lu Yao Company Limited                                | 16            |
| Lupososhi Development Investments Corporation Limited | Unknown       |
| Mumana Fishery Limited                                | Unknown       |
| Ok Medical Products Investment Limited                | Unknown       |
| Pokel International Ltd                               | 29            |
| Qiuwha Investment International Limited               | 50            |
| Reliable Anchor Company Limited                       | Unknown       |
| Rockstone Industry Company Limited                    | Unknown       |
| Ronghe Company Limited                                | 31            |
| Sunrise Time Trading Limited                          | Unknown       |
| Topace Agriculture Development Company Limited        | Unknown       |
| Wang Merriman Limited                                 | 31            |
| Wei Ma Company Limited                                | 38            |
| Wei Yu Co. Ltd  | 22            |
| Xing Da Investments Limited                           | Unknown       |
| Yangyang Company Investments Limited                  | Unknown       |
| Zambian Golden Sun Resources Holdings Limited         | Unknown       |
| <b>Total</b>  | <b>75,015</b> |

## Interview guides

### Interview guide: Farmers

1. Background information: Nationality, time spent in Zambia (for foreigners), family.
2. If working for a Chinese project:
  - Where do you work?
  - How long how you worked there?
  - What did you do before you started working here?
  - What does your job involve?
  - Do you like your job assignments?
  - Are there any other tasks you would rather do?
  - How long is your work day? How many days a week do you work?
  - Pay?
  - Are there any benefits, like health care etc.?

2. If selling products at the market:

- Do you have your own land? If so how much?
- What do you grow?
- What do you sell at the market?
- How much money do you make?
- How is the competition between traders?
- Are there many foreign traders/Chinese?
- What kind of products do they usually sell?
- What do you think about the Chinese traders?

3. Do you find China to be an active partner in Zambia?

4. Do you know of any (other) Chinese projects in the agricultural sector? How does the project(s) work?

5. What is your opinion about that/these projects?

6. What are, in your opinion, the effects of China's involvement in agriculture?

7. Do you believe that Chinese aid and investments in the agricultural sector can help reduce poverty? How so? In what areas can they contribute?

- Technology and skills
- Employment creation
- Market access
- Food security

8. To your knowledge what are the general feelings towards the Chinese presence?

9. What do you feel about the Chinese presence in the country?

10. What do you believe has to be done to improve the agricultural production? Reduce poverty?

### **Interview guide: organizations, professors, government personnel**

1. Background information: Occupation (where, what does that involve, how long how you worked there), nationality, time spent in Zambia (for foreigners).

2. Do you find China to be an active partner in Zambia?

3. Where do you believe they are most active (mining, agriculture, infrastructure, traders)? How come?

4. Where do you feel they have most to contribute? How so?

5. Do you know of any Chinese projects in the agricultural sector? How does the project(s) work?
6. What is your opinion about that/these projects?
7. What are, in your opinion, the effects of China's involvement in agriculture?
8. Do you believe that Chinese aid and investments in the agricultural sector can help reduce poverty? How so? In what areas can they contribute?
  - Technology and skills
  - Employment creation
  - Market access
  - Sustainability
9. To your knowledge what are the general feelings towards the Chinese presence?
10. What do you feel about the Chinese presence in the country?
11. What do you believe has to be done to improve the agricultural production? Reduce poverty?