

BSc Thesis

CHINAS' QUEST FOR FOOD SECURITY

Providing insight in the vulnerability of food security for rural and urban people in transforming China



Aveline Bies

BIBLIOGRAPHICAL DATA

<i>Title:</i>	China and the vulnerability of food security
<i>Name:</i>	Aveline Bies
<i>Student number:</i>	940907067100
<i>Supervisor:</i>	Guido Ruivenkamp
<i>Chair group:</i>	Rural Sociology (RSO)
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ABSTRACT

This thesis examines the vulnerability of food security of rural and urban people in China, looking at the current urbanisation and migration developments. Nowadays, China is experiencing an outflow of rural people to strive for a better life. Rural to urban migration is facilitating the urbanisation process, which in turn is questioning China's capability to provide and protect the potential of domestically produced food. Producing food domestically is perceived by the Chinese government as an important strategy to reach food security. Land in this case, holds an important role in facilitating sufficient domestically produced food. Although, the current developments of migration and urbanisation can pose several limitations to the agricultural usage of land. Adopting the concept of food security as it is defined by the FAO and applying the capital asset approach, the central research question has become '*How do domestic migration flows and urbanisation influence the vulnerability of food security for rural and urban people in China?*'. Answering this question by means of a literature review, provides insight in how migration and urbanisation are weakening or aggravating or alleviating food security vulnerability for rural and urban people in China.

The trends of urbanisation and migration seem to weaken the availability of domestically produced food in the future. Economic and natural capital are found to be important assets in accessing food. Natural capital provides farmers mainly with access to food as economic capital fulfils this function for urban residents. When only relying on the natural capital, farmers obtain a vulnerable position with regards to food security when they are deprived from their land. Therefore, relying on both natural and economic capital strengthen food security for farmers, making them less vulnerable in accessing available food.

- Chapter 1 -

INTRODUCTION

Panem et Circenses, meaning 'Bread and Games', was a statement used for the first time by the Roman writer Juvenalis and was intended to criticize the way emperors were ruling the Roman territory. He described how Roman emperors were keeping their citizens satisfied by providing them with basic needs like bread and games, a strategy which gave them the power to carry out their plans. Gajus Julius Caesar used this political strategy of 'Panem et Circencus' 2000 years ago, to keep the people in his territory calm and by doing so, he prevented riots against his regime. At some point he provided grain for free because the price of grain was initially too high for the citizen. In this way he guaranteed a certain food security for the Roman people.

(Onzetaal, s.a.; Verbaast, 2008; Capitolum, s.a.)

Some two millennia later, the international price for grain was also extraordinary high but this time grain was not provided for free and the high price resulted in riots around the globe, something Caesar had prevented by his 'panem et circenses' policy. During the food crisis of 2007-2008, the price of grain had suddenly increased by 130% in 2008 compared to the year before. Scholars argue that one reason for the riots to arise was the growing consumption by the population in expanding economies like People's Republic of China¹, where increases in income allows people to purchase more staples and meat. The increased demand for meat indirectly drove up grain demand and therefore grain prices, affecting people in their food security situation. This incident reawakened fears about the ability of the world to feed itself in the future. Growing populations, economic prosperity and changing food patterns are putting pressure on agricultural systems which have to function under increasingly difficult conditions concerning the environment and climate. These trends are influencing food security across the globe. More than half of the world's population is living in Asia, a region with high levels of inequality and at the heart of the global food-security challenge of the twenty-first century. This region is struggling to meet its needs, in particular the countries China and India. (Conceição and Mendoza, 2009; Adelphiseris, 2014)

This thesis is taking a closer look at food security in China. Food security is one of the most important issues the Chinese government is currently dealing with. The country tries to be mostly self-sufficient in producing food, trying to provide the basic foods like grains to its growing population. This is not without struggles. China is facing several interrelated issues as growing population numbers, changing food patterns, economic growth, urbanisation, environmental pollution, decreasing soil fertility and migration to cities, which are all factors influencing and pressing on food security directly or indirectly. Arable land, as being an important factor in providing food, is limited and a struggle between agricultural and urbanisation usages of the land exists. As the picture on the front page shows, agriculture and urbanisation are co-existing, sometimes clashing, sometimes creating new opportunities. How is the government trying to regulate these developments? How are rural and urban people

¹ 'People's Republic of China' is hereafter referred to as 'China'.

affected by those policies? Which role do urbanisation and migration play in the chances of accessing food? This thesis provides insights which help answering the questions posed above.

The scope of this thesis does not allow for a discussion which elaborates on all factors influencing food security. Therefore, two issues influencing food security will be discussed into more depth. These are the trends of migration and urbanisation because they are interrelated and are revealing a certain vulnerability of urban and rural people with regard to food security. In addition, urbanisation is seen as a serious challenge to China's future food security in the literature which makes it an interesting topic to deepen out.

Food security is a contested concept and consensus about how to measure and apply it, is absent. Food security is a way of looking at hunger, tied to specific political and economic beliefs which assist in defining the problem of and responses to hunger. A widely used food security definition has been developed by the FAO, stating that:

"Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. The four pillars of food security are availability, access, utilization and stability. The nutritional dimension² is integral to the concept of food security." (FAO, 2009)

As one can see, the definition of food security as well as its conception, which is reflected in the four pillars, are broad. To investigate this concept, a specific viewpoint is taken in this thesis in order to capture relevant insights in food security. Therefore, the following research question is posed:

'How do domestic migration flows and urbanisation influence the vulnerability of food security for rural and urban people in China?'

When looking at vulnerability of food security, the pillars of availability, access and stability are addressed. Here, vulnerability of food security is understood as the risks people bear to get food insecure, looking at which capital assets they have at their disposal in order to access available food. The utilisation pillar is left out, although it is an important component in the well-nourishment of people. This pillar is not addressed because it contains a more technical and biological component and is difficult to control for. The vulnerability of rural and urban people is investigated using the capital asset approach as it is used in the Sustainable Livelihoods and Asset-based model that has proven to be suitable for analysing individual or household capabilities to access food, meanwhile taking the vulnerability context, processes and structures into consideration.

The goal of this thesis is to show how migration and urbanisation trends are influencing the assets of individuals and households which help them to access available food, demonstrating in this way their vulnerability in the Chinese society. Showing how rural and urban people can make use of their capital assets, demonstrates to which extent they can deal with the risks of getting food insecure, looking at which capital assets they have at their disposal in order to access available food. By doing this, the extent of vulnerability of food security for Chinese people comes to the fore, which can be relevant in gaining insight in the quest to provide a food

² The nutritional dimension acknowledges that people need to have the knowledge, health and environmental conditions to obtain nutritional benefit from food. Food security is a precondition to adequate nutrition, although to achieve food security, actions are needed which also include the nutritional aspect. Nutrition security is defined by the FAO as ' Nutrition security exists when all people at all times consume food of sufficient quantity and quality in terms of variety, diversity, nutrient content and safety to meet their dietary needs and food preferences for an active and healthy life, coupled with a sanitary environment, adequate health, education and care.' (CFS, 2012)

secure situation for Chinese people. Throughout the chapters, certain groups of people come to the fore: Chinese farmers, landless farmers, migrants and urban residents.

In order to answer the central research question, several sub questions have been formed. The first sub question “*What is food security?*” provides the theoretical conceptualization of food security and the theoretical framework in which the concept is investigated. The second sub question is: “*How do Chinese food security policies relate to the vulnerability of accessing available food?*”. The next two sub questions investigate two developments through which vulnerability in accessing food of rural and urban people is demonstrated, being “*Which impact does migration has on one’s vulnerability of accessing the available food?*” and “*Which impact does urbanisation has on one’s vulnerability of accessing available food?*”. Each sub question is discussed in different chapters, reflecting in each chapter how the discussed issues are coming to the fore in the case of Beijing. Beijing is chosen because it is the capital, migration and urbanisation are abundant in this city and literature is available. Beijing can illustrate the addressed issues to contribute to a clearer imagination of the vulnerability of food security in China. In order to be able to conduct information about the topics which are being discussed in this thesis, books and (online) articles have been consulted.

This thesis is organised as follows: After this introductory chapter, chapter two demonstrates what is perceived by the notion of food security, also outlining a competitive discourse in the field of hunger, i.e. food sovereignty. A framework is described through which the vulnerability of accessing food is being addressed. This chapter addresses the first sub-question “*What is food security?*”. Chapter three outlines the Chinese food security situation for the country and its citizens as found in the literature. It clarifies the context in which people's vulnerability to accessing food exist, discussing current agricultural politics in China. This chapter also sheds light on food sovereignty as it is promoted by the Chinese government. By describing the Chinese policies with regard to food security, the second sub-question “*How do Chinese food security policies relate to the vulnerability of accessing available food?*” is answered. The next chapter captures the influence of migration on the capabilities of rural and urban people to access food, depending on their bundle of capital assets. This demonstrates to what extent rural and urban people are vulnerable to stresses and shocks. This chapter focuses on the third sub-question: “*Which impact does migration has on the vulnerability of accessing the available food for rural and urban people in China?*” Chapter five explores the impact of urbanisation and in particular the process of urban space expansion on the vulnerability of people in accessing the available food. Besides, it's aim is to show the tensions which occur in the struggle for land. Therefore, chapter five aims to investigate the last sub-question “*Which impact does urbanisation has on the vulnerability of accessing available food for rural and urban people in China?*”

Having answered these sub-questions listed above, an overarching conclusion is provided in which concrete insight in the vulnerability of food security for rural and urban Chinese people under the trends of urbanisation and migration is provided, answering the central research question.

- Chapter 2 -

FOOD SECURITY

2.1. Introduction

According to article 25 of the Universal Declaration of Human Rights, 1948:

" Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control. "

As the above statement shows, food³ is considered to be a human right and at its very basics necessary for survival. The right to food views food security from a perspective of duties and rights in which individuals have the right to feed oneself and states have duties to fulfil with respect to individuals' access and ability to feed themselves. Although this is a human right, an estimated one of every nine people around the world still went hungry⁴ during the period 2012-2014, which means a number of 805 million people. In the case of China, an estimated 11% of its total population was undernourished in 2013, in 1993 this had been 24% according to world bank data. Undernourishment is one of the most important, generally accepted facets and indices of lacking food security, which makes the issue of nutrition fundamental to food security. Food security is of importance to welfare, being necessary for human survival and is seen as a public benefit to people and governments (FAO, 2009; FAO, 2014; Hospes, 2008; WorldBank, 2015).

For this thesis it is essential to understand what is perceived by food security and how vulnerability is understood in relation to food security. Therefore this second chapter discusses food security, addressing the first sub-question "*What is food security?*", demonstrating which ideas underpin the concept of food security. The concept of food sovereignty is also paid attention to as this discourse is looking at the hunger phenomenon as well. To start with, an overview about the pillars of food security and the way in which the concept has evolved over time is provided. Food security can be approached in different ways. One of these approaches, the capital asset approach, is chosen and elaborated on. This paves the way for the analysis of the influences of migration and urbanisation on the vulnerability of food security for rural and urban people. Thereafter, the concept and discourse of food sovereignty are explored. At the end of this chapter a conclusion demonstrates how vulnerability to food security is understood and approached in this thesis.

³ Food: Food is understood by people by what they eat. Food as it is understood by policy makers is similar to any substance intended for human consumption. The definition of food used by the Codex Alimentarius according to the CFS is "any substance, whether processed, semi-processed, or raw, which is intended for human consumption, and includes drink, chewing gum and any substance which has been used in the manufacture, preparation or treatment of "food" but does not include cosmetics or tobacco or substances used only as drugs." (CFS, 2012)

⁴ Hunger is mostly referred to as food deprivation. People who suffer involuntarily from hunger are seen as food insecure but people who are food insecure do not have to be hungry by definition (Pieters et al., 2012).

2.2. The concept of food security

Food security is a vast concept but fundamentally deals with the idea that everybody has enough food every day to eat, achieving access to nutritious, affordable and adequate food, sufficient not to suffer from chronic hunger. The notion of food security is constantly shifting and evolves over time. The World Food Conference defined food security in 1974 as 'availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices.' (cited in Rosin, Stock and Campbell, 2012, p51). This notion views food security through a perspective of supply and availability of food. Here, food supplies and diminished food stocks are the explanation of hunger. Seven years later, the entitlements approach was developed by Amartya Sen, stating that hunger also relates to political structures that connect people to food. The way a person can avoid hunger depends on the entitlements one has, constructed by the combination of resources, assets and labour powers which make up the ownership bundle of the person together with the accompanied entitlement regime (i.e. the rights to accessible resources by transferring an ownership bundle into food). (Gibson, 2012; Restuccia et al., 2013; Rosin, Stock and Campbell, 2012)

For others, food security means purchasing food or encompasses the ability to trade food, whether others refer to food security as the right of a country's food sovereignty.

According to scholars, the discourse⁵ of food security is emphasising technocratic and neoliberal development ideas of increasing production in order to alleviate hunger. The support of transnational agri-corporations, developed under neoliberal globalization policies are seen as part of the solution by this discourse. To reach food security for all bodies across this world, the Food and Agriculture Organization (FAO) stimulates increasing global food supply by using more intensive agricultural techniques, driven by research. The discourse of food security is being criticised by another discourse, i.e. the one of food sovereignty, which opposes to this globalising food regime. This discourse is further elaborated on in section 2.4. (Gibson, 2012; Jarosz, 2014)

One of the most frequently quoted definitions is the food security definition of the FAO, based on the definition constructed in the 1996 UN FAO 'Declaration on World Food Security and World Summit Plan for Action'. (Gibson, 2012) The FAO currently states the following about food security:

"Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. The four pillars of food security are availability, access, utilization and stability. The nutritional dimension⁶ is integral to the concept of food security." (FAO, 2009)

The first pillar of availability entails the availability of food in quantity and quality to all individuals within a country, either supplied through production of households themselves, other domestic outputs, imports or food aid. Availability of food is necessary, although it does

⁵ Discourse as defined by Dictionary Britannica: 'a mode of organizing knowledge, ideas, or experience that is rooted in language and its concrete contexts (as history or institutions)'. (Britannica, 2015)

⁶ The nutritional dimension acknowledges that people need to have the knowledge, health and environmental conditions to obtain nutritional benefit from food. Food security is a precondition to adequate nutrition, although to achieve food security, actions are needed which also include the nutritional aspect. Nutrition security is defined by the FAO as 'Nutrition security exists when all people at all times consume food of sufficient quantity and quality in terms of variety, diversity, nutrient content and safety to meet their dietary needs and food preferences for an active and healthy life, coupled with a sanitary environment, adequate health, education and care.' (CFS, 2012)

not induce universal access to safe, sufficient and nutritious food. Food production can be measured in many ways and is influenced by many factors. The second pillar is access to food. The access pillar can be interpreted as the ability of households or individuals to purchase or produce enough food to meet their nutritional needs. Commonly, access is specified as physical and economical access. Physical access can include growing food, the accessibility of markets or the ability of an individual to travel. Access in an economical way can be seen as the financial opportunity to pay for goods or trade in order to acquire food on the individual level. Access depends on available income to and distribution within the household, (in)formal safety nets and the price of food. Access is intertwined with the demand side of food security, resulting in uneven inter- and intra-household distribution of food. Besides, this intertwining contributes to the perception of what food is, influenced by the social-cultural values. In addition, access includes the response to adverse shocks, like unemployment, rising prices or the loss of livelihood-producing assets. This access pillar refers back to Sens' entitlement approach and explains his statement that "starvation is the characteristic of some people not having enough food to eat. It is not the characteristic of there being not enough food to eat. While the latter can be a cause of the former, it is but one of many possible causes". Access is a multidimensional pillar which makes measurements difficult. Utilisation, being the third pillar, is seen as the maximisation of the potential of food, referring to people's ability to absorb nutrients of the food they consume, consuming sufficient and appropriate food. This recognition that the quality of the diet is as important as the quantity explains that the amount of energy intake is as important as the completeness of micronutrients intake to meet food security. The fourth stability/vulnerability component stresses that food security can be gained and lost. This component shows how availability, access or utilisation of food is determined by the risks people bear by their livelihoods (e.g. the risk of labour fluctuations and the occurrence of natural disasters with their impact on food security). The stability component makes the time element - at all times - a critical factor. An individual or household can only be food secure when they are protected against all kinds of insecurities, meaning that all dimensions have to be fulfilled.

Besides, there are non-food issues concerning security which do relate to food security directly, like education, health services and water, but are depending indirectly on knowledge, to obtain an active and healthy life. (Barrett, 2010; Gibson, 2012; McLeod Rivera & Qamar, 2003)

2.3. Levels and Time

Originally, food security conception was applied at international food supply and price stabilization at the government level. Over time, different levels of food security have been determined in the literature as being the levels of the individual, the household and the national or regional level. The context or underlying conditions influence these levels of food security. Economic, demographic, environmental, political, social and cultural conditions as well as risks, hazards, shocks and natural resources make up this context. In addition, food security can be approached using a time perspective in which chronic, temporal or cyclical food (in)security can be distinguished. Chronic or continuous food insecurity occurs when a household or an individual is continuously not meeting its food requirements, which can be disturbed by temporary incidents. Usually this is endemic or structural, associated with poverty and low incomes. Temporary or transitory food insecurity implies shocks that lead to a temporary decrease in availability or access and can be caused by many factors, like economic downturn or harvest failures. Seasonal or cyclic food insecurity can be placed between chronic and

temporary food insecurity. This cyclic component is chronic or predictable in that it is part of an existing pattern and it can be viewed transitory because it can often be linked to seasonal fluctuations in cropping or employment trends. (Gibson, 2012; Jarosz, 2014)

2.4. Food Sovereignty

Food sovereignty came to the fore at the World Food Summit in Rome 1996, initiated by the global farmers' organisation Via Campesina. Food sovereignty discourses were formed to protest against neoliberal practices and the globalising process in which food and agricultural are taken up. It was an initiative to counter the neoliberal globalization policies which marginalise small farmers economically and politically. It is an anti-globalization movement. Civil society and NGOs first promoted this concept, stressing the importance of power relations and the impact of capitalism on agricultural development, hunger, poverty and the environment. They advocate the right of all people to life without hunger, meanwhile developing themselves through democratic and autonomous control of natural resources and sustainable food systems. Lately, food sovereignty has been claimed to be a new human right, although not viewed only as an individual right but as a right on the level of regions, communities and states. (Claeys, 2013; Jarosz, 2014) According to Via Campesina(2011), food sovereignty

"is the right of peoples to healthy and culturally appropriate food produced through sustainable methods and their right to define their own food and agriculture systems. It develops a model of small scale sustainable production benefiting communities and their environment. It puts the aspirations, needs and livelihoods of those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations. Food sovereignty prioritizes local food production and consumption. It gives a country the right to protect its local producers from cheap imports and to control production. It ensures that the rights to use and manage lands, territories, water, seeds, livestock and biodiversity are in the hands of those who produce food and not of the corporate sector."

Food sovereignty is mutually linked with food security. Food security and food sovereignty are both paradigms, tied to different political and economic beliefs, which are defining the problem of and responses to hunger. A central theme in defining food sovereignty and food security is the notion of producing enough food, although ideas about how to reach this goal vary. Both concepts incorporated a human rights perspective into their definitions. Originally, the two terms emerged separately and were seen as opposing rather than relational to each other, although this binary is criticized. Where food security describes a condition with regard to access to adequate food, food sovereignty focuses on a political agenda, addressing inadequate access to food and land rights. (Clapp, 2014; Jarosz, 2014)

The food sovereignty discourse argues that food is a basic human right which means that everybody should have access to nutritious, culturally appropriate and safe food. Indigenous people should rule the land they till which gives them the right to access food-producing resources. Such resources should be used in a sustainable way and people who work the land have the right to manage and preserve the resources. Food trade should be reorganized and should in the first place be seen as a source of nutrition, not a moneymaking machine. National agricultural policies should focus on self-sufficiency where speculative capital should be treated

with care. Smallholder farmers should have direct input in agricultural policy making and everybody must be included in a democratic and open decision making process.

Food sovereignty encompasses small-scale family-farm-based food production and consumption, whereby communities consume what they need. La Via Campesina strives to de-globalise food in order to recreate local food economies. Food sovereignty incorporates the right to manage and protect agricultural and food production, shielding countries from agricultural surplus dumping and low-price imports. This implies that peasants, landless people and small-scale farmers should get access to land, farm-bred seeds, water and other natural resources which are thought of to be needed for sustainable farming, as well as good public services like education, health and support for farm marketing and management. Via Campesina is trying to transform the industrialized capitalist agricultural model which is currently dominating the world, by emphasising the decentralisation of farm production. They argue that the growing social and economic inequality could be addressed by food sovereignty as well as the appearance of hunger and poverty, which is the cause of the globalization of food and agriculture, driven by multilateral institutions like the WTO and World Bank. (Akram-Lodhi, 2013; Jarosz, 2014; Pieters, 2012)

Food sovereignty is often presented as a different discourse to market-based and agro-industrial thinking on food production and food, consisting of alternative social and environmental values. The FAO did not formulate the adaption of food sovereignty for its member states. A common explanation of the restricted role of food sovereignty in food and agriculture policy of organisations and countries is the fact that current power structures are favouring the maintenance of the corporatist food regime and framing food security in a neo-liberal way. (Hospes, 2013) This dominant ideology runs counter to the food sovereignty approach. China in this case, seems an interesting country as it tries to maintain a certain level of food self-sufficiency and therefore strongly reflects the notion of food sovereignty, resisting in this aspect the global food regime. The next chapters elaborate more on this issue.

Thus, broadly speaking, the food sovereignty concept aims at access to appropriate food *and* access to food-producing resources, while the food security concept does not explicitly address the latter. How this access to appropriate food should be reached, differs amongst the two discourses. The food sovereignty discourse assumes that the right to produce is violated by the low food prices as a result of over production and dumping by more developed countries. And as long as there are no free and perfect food markets, food prices should be ensured by food self-sufficiency. (Pieters, 2012) It might be important to note here that while individuals, households or regions may find themselves food secure, as defined above, they may not experience food sovereignty or the other way around.

2.5. Approaching food security

Food security has gained major attention throughout the years. Nevertheless, it is not completely clear what it encompasses and how it can be measured or should be approached. It is complex and difficult to determine for whom, why and where there is food security or its' adversary, food insecurity. Notions which are closely related to food security, like hunger, risk, poverty, or an optimum diet are all difficult and very broad to define or quantify. At least it is generally agreed upon that there are a wide range of factors contributing to food security. E.g. the FAO uses over 80 indicators for the profile of a country's' food security. It is widely acknowledged that most quoted measurements are malnourishment, poverty and anthropometric measures. Malnutrition for instance, is currently thought of as more than

hunger or undernourishment alone, it also includes poor or bad nutrition leading to under- or over- nourishment. Malnutrition and food security do both relate not only to the intake of enough food but also to the quality of the consumed food. Nevertheless, how to build up those measurements is contested too. (Gibson, 2012; Pieters, 2012)

As just stated, food security is a multi-faceted concept, interpreted in different ways, defining different variables, existing in several typologies and is studied using a particular specialist pair of glasses. One way of approaching food security can be done through the Endowment Sets and Entitlement Mapping, based on Amartya Sen's findings described above. The main point of this approach is the affordability of food and exchangeability of assets in which production, exchange and transfer components make up three endowment sets, linking to the food access pillar of the FAO. Endowments determine one's ability to access food, especially important in today's urbanising world where less people grow their own food, which puts an emphasis on access and incomes.

Another approach is the Sustainable livelihoods and Asset-based model. The capital asset approach is used in this model which is also used in the Endowment Sets and Entitlement Mapping approach. Nevertheless, the capital assets in the Sustainable livelihoods and Asset-based model are seen in a broader, more holistic way, by also incorporating clearly the structures, processes and the vulnerability context in which food security can be viewed. This capital asset approach and its' relation to the broader vulnerability context, processes and structures is chosen to adopt in this thesis, as food security of people is perceived to be a concept which is also determined by the vulnerability context, structures and processes.

The approach is a tool to improve our understanding of peoples' vulnerability of food security, by referring to their capital assets and how the access to these capital assets is determined.

Capital assets and transforming structures and processes mutually influence one another.

Besides, transforming structures and processes impact the vulnerability context which includes shocks, trends and seasonality. Shocks, trends and seasonality have their own effect on the capital assets of households and people. When people gain more assets, they are better able to influence the structures and processes with which they have to deal. Together, all streams of influences make up a certain state of capital assets and determines one's vulnerability of food security. To visualise this approach, check fig. 1 on the next page.

As one can see in the figure shown underneath, structures can be thought of as organisations - public, private and civil society - which make and enforce legislation, influencing the acquiring, accessing and managing of the capital assets. Processes influence the interaction between the structures and people, including policies, laws, culture, power relations and institutions. Culture here is understood as societal norms and beliefs. Institutions regulate access to assets, like markets. Power relations are determined by age, gender and class. The vulnerability context includes shocks, seasonality and trends. A bundle of capital assets - natural, financial, physical, human and social - incorporates the means which individuals or households have at their disposal in order to access food and to acquire food security. Natural capital are the natural resources and environmental services. Natural resources are for instance soil, air or water. Human capital contains skills, knowledge, labour, good health and physical circumstances. Economic capital equalises cash, savings, credit, debt and other economic assets. Social capital comprises networks and social relations. Infrastructure makes up the physical capital.

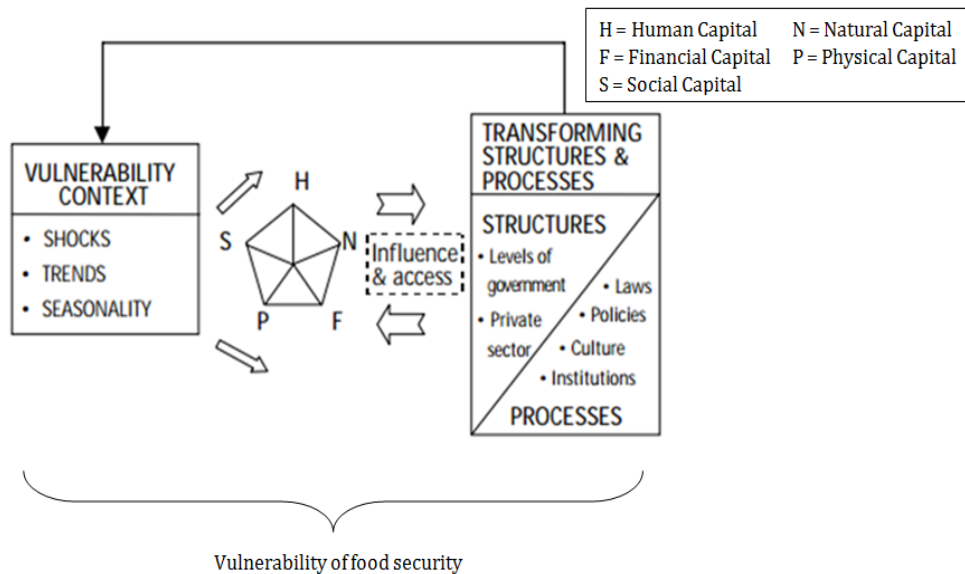


Fig. 1 Capital approach, based on the Sustainable livelihoods model. (DFID, 1999)

Having demonstrated the approach, it is worth to clarify how exactly this model is applied throughout the thesis. Looking at the vulnerability context, only two trends - urbanisation and migration - are discussed in this thesis. Their influence on access to assets and therefore on the vulnerability of food security for people comes to the fore. This vulnerability context in turn is influenced by certain processes which are set and implemented by structures. These processes also influence access to capital assets directly. Not all processes which influence the trends in the vulnerability context and access to the capitals can be accounted for. This means that only the main processes are addressed which are perceived to influence the two trends and the capital assets of people with regard to vulnerability of food security to a great extent. Which processes exactly is focussed on, becomes clear in the following chapters. In this thesis, the focus is placed on the vulnerability of food security. This means that the forth pillar of the FAO is being addressed, meanwhile also incorporating access to food and availability of food, so the first and the second pillar. The vulnerability of food security is understood in this case as the risk of becoming food insecure, depending on the way people are able to use their capital assets to access available food, influenced by the trends of urbanisation and migration.

The trends of migration and urbanisation within the vulnerability context are influencing the access to capitals as well as the ability to use these capitals. For instance, policies of the Chinese government of facilitating the conversion of agricultural land into urban usages, so facilitating the trend of urbanisation by a process of policy, influences the access to land, being natural capital, for rural people. This weakens their food security since their main source of food security is taken away, depriving them from their main source of accessing food.

By describing this whole approach of forces which influence each other, insight can be gained in how urbanisation and migration influence the vulnerability of food security for rural and urban people in China. It can function as a tool which shows how the vulnerability of food security for groups in the Chinese society is aggravated or alleviated. Thus the approach shows the strengthening or weakening of food security through the altering in composition of capital assets. It is important to note that people can give up some of their food security in order to preserve other capital assets.

Nevertheless, by using this approach, the utilisation pillar is not addressed. Attention is not paid to whether people have enough nutrient intake or suffer from diabetes. Although being an important element, it is intentionally left out of this research because this biological dimension is not my field of study. Using this asset approach provides an opportunity to get a grips on the availability, stability and access pillars of food security. And the approach allows to discuss the composition of capital assets for certain groups of people, e.g. the rural and the urban, in relation to the broader field of transforming structures and processes, which can provide us insights in the vulnerability to food insecurity.

(Burchi and De Muro, 2012; DFID, 1999; Gibson, 2012; Morse and McNamara, 2013)

2.6. Conclusion

The goal of this chapter has been to answer the sub-question of “*What is food security?*” in order to provide a theoretical framework through which food security is approached. This question is not easy to answer since it has become clear that food security is a debatable and a contested issue, lending itself for multiple interpretations and measurements. One of the most used definitions of food security in the literature has been the one of the FAO, together with its four pillars. This study elaborates further on this conception but focuses mainly on the vulnerability pillar. This pillar also addresses the availability and access pillars of food security. By choosing this vulnerability perspective, vulnerability of food security is understood as the risks people bear to get food insecure, looking at which capital assets they have at their disposal in order to access available food. Having said that, the capital asset approach as it is used in the Sustainable Livelihood and Capital-Asset model is adopted in order to analyse how the trends of urbanisation and migration impact the vulnerability of food security for rural and urban people. Also processes, coming to the fore in next chapters, are being discussed as they impact the capital assets directly and indirectly (through the vulnerability context).

The next chapter addresses processes of policies and legislation. There is further elaborated on strategies to deal nationally with food security issues and how people are affected by these policies in their vulnerability to cope with access to available food.

FOOD SECURITY POLICIES

3.1. Introduction

The great Chinese Famine (1959-1961) of the 20th century was a huge human catastrophe, a deadly famine which has killed more people in history than any other famine ever before. Sixteen to forty-five million people lost their lives due to the famine in this period, of which mostly rural people were affected. There is still disagreement concerning the exact causes of the famine, although it is widely acknowledged that the governmental Great Leap Forward⁷ campaign contributed to a disruption in grain production, besides bad weather conditions, which decreased the availability of food. Food availability inequality is one way of explaining the famine. Although the decreased availability did not cause the whole famine, people were also struggling with accessing the food. During the Great Leap Forward, China adopted an agricultural production strategy, aimed at people's food self-sufficiency. Land was owned collectively and large-scale communes were set up in which everything was shared. Besides, the government facilitated migration from rural to urban areas in order to support the industry. Both migration and the new land distribution led to a decline in grain sown area. Every province suffered from the famine although Beijing was amongst the municipalities which suffered the least. Even though farmers were producing grain, they were amongst those who suffered the most of the famine. When there was not much food, they had to sacrifice their consumption. (Gorgens, Meng, and Vaithianathan, 2012; Clement, 2012)

Policies can be seen as a process which tells something about the status of and access to capital assets, in which rights hold an important position. As the example above shows, policy can influence the food availability and the accessibility of food. The goal of this chapter is to answer the second sub-question "*How do Chinese food security policies relate to the vulnerability of accessing available food?*". By investigating the main Chinese government strategy of food security - i.e. keeping a self-sufficient rate of 95% in grains (rice, maize, wheat) - the effects of processes on the vulnerability context and the access to capital assets come to the fore, partly explaining the vulnerability of food security. Policies which are aimed at the domestic supply side are mainly discussed as these support this Chinese desire to keep a certain rate of food self-sufficiency. Therefore, the context of the main threats to food production which can be seen as an important component of food supply in China are outlined underneath in order to depict the vulnerability of food availability and indirectly food access. These threats are approached through the understanding of agricultural policies because those policies regulate the production of food. It is important to gain insight in how the Chinese government views food security because this reiterates in their policies and so is affecting rural and urban people in their vulnerability of food security by influencing their capital assets and the trends of urbanisation and migration. How exactly, is explained in this chapter in further detail.

⁷ Great leap forward refers to the policy of Mao to modernise China's economy, developing agriculture and industry (HistoryLearning, 2015).

3.2. Pressure on Chinas' agricultural land

This section provides a quick understanding of the quality and quantity of Chinas' agricultural land in order to demonstrate how this impacts the availability of domestically produced food.

This relates mainly to the availability pillar of food security.

Currently China feeds 22% of the world's total population on 7% of the worlds' available arable land. This makes agricultural land extremely important to China. Unfortunately, China is experiencing decreasing availability of cultivated soil per capita, which is challenging domestic food production. Besides, the urbanisation and industrialisation processes result in converting agricultural land into industrial and urban areas, reducing the potential to produce food. There exist a struggle over limited land resources in which agriculture, protection of nature, construction of industries and cities are mutually competing. The rapid urbanisation, being considered the main driver of Chinese economic growth, together with a large population - of which is estimated to grow with an additional number of 60 million in the next 15 years - and transforming dietary preferences, are expected to contribute mostly to increased food demand in the next two decades. The perception of food has changed over time in which food is now perceived as an ordinary commercial good to make profit. The change in dietary preference nowadays requires more resource-intensive farming practices. Increase in population numbers reduce the arable land and water sufficiency per capita. This in turn is increasing deforestation, over-fishing and desertification. (Bohua & Changhe, 2006; Chen, 2007; Lam et al., 2013; Thomas, 2013; Veeck, 2013)

Not only the availability of land is decreasing, also the quality of land is not optimal due to environmental contamination. More than half of the agricultural land has low or middle quality and desertification and natural disasters are occurring across the country, causing losses of agricultural land every year. Soil pollution, which is mainly present in the intensively cultivated and peri-urban areas, has been caused by wastes from urban and industrial zones as well as by polluted air and surface water, vehicle exhaust, and use of agrochemicals. Moreover deforestation, overgrazing and the loss of topsoil are not contributing to the quality of agricultural land in a positive way.

Scarcity of available arable land, deteriorated soil quality, climate change, dependence on fertilizers and pesticides, water scarcity and pollution all reduce or limit agricultural production. This weakens the availability pillar of food security for China as it wants to rely for basic crops on the domestic production. In order to increase the agricultural production, subsidised fertilizers, herbicides and pesticides have been widely used, contributing in their way to decreased land quality. In the world, China is the most affected country concerning land degradation, with more than 40% of land area being affected by soil erosion, desertification and salinization. Herbicides or pesticides are not the only inputs of agriculture which are threatening the production of crops. Water is an important input of agriculture as well. Water shortages in China are leading to less availability of food. An uneven distribution of surface water resources across the country together with an increased food demand of population, urbanisation and irrigation places pressure on the agricultural production system.

It is a challenge to produce more food which is safe, on a sustainable way, avoiding environmental degradation. The condition of agricultural land is partly influencing food supply and is a precondition for food security. Looking at the land-related factors - i.e. soil degradation, conversion of cultivated land, low availability of unused cultivable land - which are constraining further rise in grain production, China has to pay attention to land-resource balance. (Chen, 2007; Lu et al., 2015; Thomas, 2013)

3.3. Agricultural land management

Reviewing agricultural land management shows the interrelatedness between the arrangement of land management as an institution and the access of people to the capitals, indicating a part of their vulnerability. Management of land is understood as the way in which land is used and by whom. Land management makes up a part of the processes in which the vulnerability to food insecurity evolves.

The agricultural sector has experienced a transformation from collective to private production, facilitated by the household registration system, or hukou system. The system provided many small farmers with land which was formerly owned by collectives. In next chapters this hukou system is discussed into further detail. Nowadays, the ownership of the rural land is possessed collectively while the user rights are assigned to the farmers separately. This means that farmers do not own the land privately but can use rural land which provides them with access to food and income. The rights of land use are divided by the rural collective, who tend to seek an equal distribution in quality and quantity of land, providing each household with several plots. In practice, it is not clear what collective ownership means. Most of land management laws have been adopted recently which explains the unfamiliarity with the newly adopted laws. This lack of transparency can result in illegal land conversion. More about land rights and land conversion can be found in chapter 5. Land management practices differ highly among different villages. Some villages' control on land transfer between farmers is strict while others allow for rent or subcontracts. Villages can decide to reallocate the plots periodically or to make land usage fixed. In some villages land is used by a stock-holding cooperative. Other villages are hiring migrants to work the land. Leaders of the village should have less power to reallocate land due to 30-year land lease regulations. Nevertheless, they reallocate land as they still have the right to take land away for non-agricultural usages in the name of the 'greater good'. To do this in a proper way, they need the farmers' and township approval and have to pay them a compensation. Although these compensation rules are set, farmers often suffer from incomplete compensation.

The central government has encouraged farming practices on marginal land, like hillsides, in places where agricultural land is less available in order to make more food available. This, together with intensive use of the land contributes to soil erosion and degrading land quality. The quality of land is regulated by periodically appointed village leaders. Their leadership performance is important in their evaluation and they are therefore eager to make land productive on the short term, not always taking into consideration the consequences for the longer term. The productivity of land is important for farmers' yields, also on the longer term. Nevertheless, uncertainty over land use since farmers do not own the land, can constrain farmers in taking good care of the land; they are applying chemical fertilizers and pesticides. (Tilt, 2007; USDA, s.a.)

In China, there exist several ways that are used to manage land. First of all, farmers can rent out their land. Farmers' friends and family are often renting their lands. This usually happens when farmers themselves are unable or unwilling to cultivate the land. It is one of the most popular ways of temporary land transfer. According to a study carried out by Mullan (2011) a more secure tenure system leads generally to more migration when rental rights are present but reduces migration when those renting rights are less clear. Second, there are farming households which try to manage land on a mechanised, efficient and large scale basis. Third, farmers and enterprises can work together in which enterprises rent the land of farmers. Enterprises serve the farmers by providing them with food or financial compensation after the

harvest. Another mode of managing the agricultural land is by implementing an agricultural modernisation zone. In this case, large enterprises together with the government establish these zones, transferring agricultural land from farmers to the large scale projects of the enterprises. These agricultural modernisation zones are a relative new development in China, existing in pilot programs. These large-scale farming areas are places in which agricultural systems are tested to see whether it can increase production in order to facilitate agricultural industrialisation. It is an attempt to standardise production in agriculture.

Although agricultural land still cannot be privately owned and sold by individuals, land is becoming more commercialised in China. Lease, trust, reverse rent and wasteland auction modes exist. The lease variant provides farmers with a strong sense of stability. On the other hand, the actors who are renting the land do not always take into consideration the importance of land quality and so can act on a predatory basis. The trust mode transfers land to other actors under a certain time constraint. A reverse rent mode is accompanied by the renting of farmers' land by the village collective. The village collective makes an overarching land use plan.

Afterwards it rents the land out to actors who are able to engage in scale operation. Wasteland auction includes the renting of wasteland, i.e. mound, beach, gutter or hill, by those who are most capable of doing so on a long term basis, making sure renters are investing on a long term basis in the land. (ChinaDaily, 2015; Yuneng and Bo, 2011)

Agricultural cooperatives are present in China, although this form of organisation is not widely engaged in. This can partly be attributed to incomplete arrangements of such a cooperative in which high entry barriers are placed. Small-scale farm households, which make up most of China's farmers, are therefore often excluded from participation. Experiences through history also contribute to the low engagement in the cooperatives and farmers fear to lose their land use rights and control over land. Nevertheless, increasing participation in agricultural cooperatives can be detected. The aim of cooperatives is to make capital and technique more available and reduce costs. Cooperatives support members economically in the domestic and international market and reduce their vulnerability to high risks. Supermarkets are becoming a major source of food outlet, making it more difficult for small farmers to compete. These cooperatives are better able to deal with the occurrence of supermarkets and are better able to deal with quality standards set by supermarkets. Large scale farming is becoming popular and is promoted in China although the country is characterised by a history of mainly small-scale agriculture in which farmers have proved to be very productive. Increasing farm size does not contribute to an increase in productivity per se. Small-scale farmers are vulnerable to sudden stresses or shocks like bad weather, illness or disruptions in demand. When not possessing relevant other assets, this can eventually lead to landlessness. (Bijman and Hu, 2011; ChinaDaily, 2015; Zhang and Donaldson, 2013; Zheng, Wang and Awokuse, 2011;)

3.4. Pecuniary Policies

Having described the organisational forms which do exist in the Chinese agriculture, this section pays attention to pecuniary policies which are influencing to a certain extent the way in which land and techniques (natural and physical capital) is used in China. These policies are placing constraints and providing stimuli for certain farming practises, weakening or strengthening the access to and usage of capital assets of farmers .

One of the top priorities of the government, reflecting on past situations of lack of access to affordable food and political instability, is to partly meet domestic food demand by domestic production, keeping the self-sufficiency rate for grains above 95%. Vice Premier Hui Liangyu

stated in 2011 that China will give primacy to a policy of food self-sufficiency to meet the demand of the Chinese population. This goal is teased by a pressure on food production which is partly due to the main threats to agricultural land as has been described above. Food self-sufficiency of a country means that the country can produce all the food it needs by itself. Food self-sufficiency is often used in an incorrect way as a substitute for food security. Nevertheless, food self-sufficiency can be an important contribution to food security. President Xi Jinping emphasised that China needs to rely on its own agriculture, domestic markets, productivity, supported by technology and science with a moderate reliance on imports in order to achieve food security. To pursue food self-sufficiency and supply the Chinese people with sufficient food, the Chinese government has taken various measures to support the increase of domestic food production. (China Daily 2011; Gibson, 2012; Lu et al., 2015; Ministry of agriculture, 2014; Pieters, 2012; Wong 2011).

Broadly speaking, the Chinese government has two policy strategies to ensure domestic food security and deal with price volatility. These are production policies and intervention policies after price increases. The former refers to policies like input subsidies, providing agricultural infrastructure and producer-price subsidies. The latter refers to consumer subsidies, price intervention and grain-export restrictions. (Lu and Yu, 2011)

China experiences decreasing population numbers in the rural areas. Therefore farmers are tried to stimulate to reside in the rural area with subsidies and investments in rural infrastructure. For quite some time, China posed an agricultural tax on agriculture in order to support the urbanisation and industrialisation processes. Since 2006 this tax has been abolished and exchanged for agricultural subsidies in order to protect farmers from foreign competition. There are two main subsidy programmes active in the country: grain subsidy programme and improved seed programme. The latter tries to support quality and quantity of crop produce. A substantial impact of the grain subsidy on grain production remains unclear. Different studies show different results. On the one hand, studies show that there is little or no correlation between increases in grain output and grain subsidies. Although, on the contrary, other studies found that grain subsidies withhold farmers from migration and therefore increase grain production. Besides, grain subsidy programmes are perceived to have helped speeding up grain production and improved incomes in the rural areas.

The grain subsidy program is aimed on supporting farmers who are growing grain crops and include four elements: a direct subsidy, a comprehensive input subsidy, an agricultural machinery subsidy and a subsidy to promote high-quality seeds. High-quality seeds are subsidised in order to increase yields of the farmers. These four types of subsidies are determined annually by the central government, based on regional differences in grain production. Thereafter, the subsidies which are ascribed to provincial departments are divided among counties which is in line with their grain yields. In the end, local financial bureaus are entitled with the distribution of the subsidies amongst farmers according to their planting area and other specifications. These subsidies are transferred to households' bank accounts. The machinery subsidy can only be applied for when buying medium- or large-size machines and is promoted to facilitate more large-scale practices. Given the fact that most rural households have small-farms, they do not have access to these machinery subsidies. Access to credit gives farmers the opportunity to invest and therefore can increase their welfare status. Subsidies are received by almost all producers, i.e. land contractors not per se the tiller. Local governments can decide how to allocate the subsidies between households. Agricultural subsectors, e.g. fisheries and livestock, are not offered subsidy programs. (Bermouna and Li, 2014; Huang, Wang and Rozelle, 2013; Yi, Sun and Zhou, 2015)

Supportive governmental policies have strengthened the food availability with regard to increasing yields. The policies tend to increase farmers' productivity by developing small farms, expanding international trade in food and decreasing market regulations. The agricultural sector is not only producing crops to fulfil direct food needs or to produce feed for the livestock sector. It also contributes to the energy security of China by producing crops for the biofuel-industry. Biofuel is widely promoted by the Chinese government but can threaten the Chinese food security in a way that there is less domestically produced food for human consumption available. On the other hand, biofuel production may stimulate agricultural investment in rural development projects, which can lead to an increased financial capital in poor areas. (Koizumi, 2013; Ling, 2013) This competition between food, feed and fuel is an interesting topic to investigate. Nevertheless, due to the trends chosen in this thesis, i.e. urbanisation and migration, food security is not reviewed further in relation to this perspective of biofuel.

Besides the subsidiary program for grain producers, these producers are promised a minimum price for their crops as well, which is adjusted every year to reflect the changes in input prices. Water-saving irrigation, rural road construction, electricity and drinking water provisioning are examples of agricultural projects to support (in)directly agricultural production. Meanwhile, the Chinese government invests in agricultural R&D to support agricultural practices. Some domestic food prices have been established above the levels at the border countries. This has a negative influence on the efficiency of resource use. Although this could contribute in a positive way to food self-sufficiency but at the same time negatively to food security by lowering incomes and increasing domestic food prices.

Food prices increased in the international market during the period 2006-2008, although this was not so much reflected in the Chinese food prices. Scholars think that this can be explained by the grain-market interventions of the Chinese government. The government controlled the domestic price for important services and merchandise and expelled all export stimulus policies for food. Recently, prices were high in China, mainly due to a domestic supply gap in food commodities other than grain. (Anderson and Strutt, 2014; Lu and Yu, 2011)

By favouring the rural areas with subsidies and decreased taxes, the government tries to attract capital investors and to support the development of banks in those areas. This greater access to capital should lead to greater yields. Generally, household with less assets, explicitly financial assets, are more likely to participate less in markets and have low productivity rates, not benefitting from higher output prices. On the consumer side, consumers who are not possessing a lot of financial capital are supported by the state through a Social Welfare Support system which provides them with food subsidies. First this was only applied to urban residents but later on it was also given to the rural inhabitants. (Lu and Yu, 2011; Zhang and Donaldson, 2013)

3.5. Land Policies

Land is essential for producing food. Government policies with regard to land do contribute, like the policies described above, to the way in which the vulnerability of food security for rural and urban people is weakened or strengthened. In order to secure the scarce farmland and improve its quality, an overall land use plan has been developed to protect farmland areas. Already for 12 years in a row, China comes up with "No. 1 Central Document" in which food security is listed as top priority this year. The document of 2015 aims at i.a. the preservation of permanent basic farmland, increasing the farmers' income, ensuring agricultural investments, better subsidy policies and improving pricing mechanisms of agricultural products. These

measures should all, in one way or another, contribute to enhancing food security. Arable land disappeared, partly due to the property and land use rights system which was and is in place, leading to questions about the preservation of farmland. See chapter 5 for more information about this relation between the property and land use rights system and the disappearance of land. The disappearance of agricultural land created the impulse to establish quotas for construction and agricultural land. China wants to strengthen the rule of law in the rural communities to deal with issues like the protection of rural land use, implementation of pro-farming policies and rural reform in general. Increased land degradation has been recognized and in some cases cultivated land has been brought back to its ecological function, despite the loss in arable land.

In the first policy document of 2014, the country observes a red line for its arable land, i.e. 120 million hectares, to ensure a certain state of food security. The document stated *"Taking good control of its own bowl is a fundamental principle the government must stick to over a long period of time"* (Ministry of agriculture, 2014). Nevertheless, the country will also use the international markets to complement domestic supply. (Chen, 2007; Ministry of Agriculture, 2010; Su, Tao, Wang, 2013)

3.6. Quality and Safety Policies

The growth of the Chinese economy has led to shift in focus from food supply to food safety⁸. This section is shortly elaborating on this development since it impacts farmers in their actions and safety and quality of food is an essential aspect of food security. Food security exists partly when all people have access to sufficient and healthy food. A survey conducted in 2011 found that food safety was seen as the main concern of the Chinese population amongst other safety issues. (Lam et al., 2013)

Respect for food safety and quality by agricultural cooperatives is encouraged by the Chinese government to improve the quality of foods and has been a recent development. Controlling food has contributed to the improvement of food safety in China and so to the quality of the food and to the health of people. The Ministry of Agriculture is mainly trying to promote food safety and quality standards. Unfortunately, it is hard to standardize production in a country where more than 200 million farm households are active who are mostly small-farmers. These farmers do not always have the financial strength to produce conform the standards. Agricultural cooperatives and other constructions of united farmers are more likely to adapt food quality and safety standards in China. Chinese farmers have used pesticides, hormones, medicines and fertilizers which can harm health but increase output. For instance, in 2006 there was a big scandal concerning turbot fish. A carcinogenic antibiotic was found in 30 out of 30 fishes. This led to a price downturn which armed fish farmers financially. Due to those food scandals, Chinese urban residents prefer increasingly to shop online at farmers' places. Taobao is an internet platform on which i.a. farmers sell their produce to the urban people. In this way the farmers can broaden their market, earn money and invest it in the local economy. Some farmer villages are being called Taobao-villages because more than 10% of the farmers is selling their produce online. (Jin and Zhou, 2011; OneWorld, 2015; Thompson and Ying, 2007)

⁸ Food safety is the assurance that food will not affect human beings negatively when it is prepared and consumed. (Lam et al., 2013)

3.7. Beijing and Food Supply

In order to illustrate how Chinese cities have to cope with providing food to its' inhabitants, the case of Beijing is described underneath. This provides one with an idea of cities' vulnerability of food security according to food supply and safety aspects.

Cities like Beijing need natural resources to sustain itself and meanwhile are producing a high amount of waste. This phenomenon could be interpreted as a situation in which bigger and stronger man-made systems are evolving at the same time as the fragility of natural systems and vulnerability to natural hazards are taking place. Urban population growth, which goes along with increasing food consumption, accompanied with a decline in arable land make cities vulnerable to safety and supply issues of food. The production of fresh food is pushed further away from the centre. The local food supply of Beijing is declining. Arable land almost halved during the period 1987-2010, meanwhile the city's population rose by 10 million people of whose food preferences are changing as well. For 2030 it is predicted that Beijing will host around 30 million people, which will pose a serious challenge to the city's food quantity, quality, affordability and accessibility. The food footprint⁹ of the city, as an indicator of quantity, has expanded over time, making Beijing more dependent on other regions, resulting in higher food miles and less control over food supply. According to Jianming et al. (2012) the expansion of growing vegetables can maintain and/or increase the food quantity demanded in Beijing. When the arable land and rooftops are used efficiently, Beijing can rely on a higher self-sufficiency rate for vegetables. (Jianming et al., 2012) The issue of food security vulnerability of Beijing's citizens and the inhabitants of the rural areas surrounding the city is discussed in more detail in the next chapters, which explains how the urbanisation and migration trends are playing part in this issue.

3.8. Conclusion

This chapter has reviewed the main food security policies in order to show how this process is influencing the vulnerability of accessing available food for rural and urban people, meanwhile demonstrating the influences on the trends of migration and urbanisation. Therefore, the second sub-question "*How do Chinese food security policies relate to the vulnerability of accessing available food?*" is answered in this conclusion.

The condition of agricultural land is partly influencing food supply and is a precondition for food security. As became clear, the quantity and quality of agricultural land in China is threatened by policies of land intensification and land conversion. This threat to agricultural land increases the risk that the availability of domestically produced food is shrinking on the longer run. This especially harms farmers since they do more rely on their natural capital in accessing food. Nevertheless, the yield in the short run may be higher and so the income, the economic capital of farmers, may gain in strength. In this way more food is available, also to the urban residents, although it can be unsafe. This unsafe produce can affect health, i.e. human capital.

To facilitate the availability of domestically produced food, farmers are supported in their economic capital which in turn can be used to support natural, human and physical capital of farmers in order to increase domestic food production and their own access to available food. In this way farmers strengthen their access to available food, making their food security situation

⁹ Food footprint: This is a measure, based on the ecological footprint, to estimate the land used for food production and the land needed to absorb the CO₂ emissions as a result of burning fossil fuels. (SustainableFood, s.a.)

less vulnerable. Also, farmers together supply a stable amount of grain, contributing to a stable access of available grain for rural and urban people for the time being.

Agricultural projects are established to support the availability of food. By doing this, the government creates stimuli for farmers to reside in the rural areas and not to migrate to the urban areas and leaving land unattended.

In order to secure the scarce farmland and improve its quality, a policy of an overall land use plan has been developed to protect farmland areas. This policy strives to strengthen the stability of domestic food supply, contributing to the availability of food. Legislation which tends to strengthen the position of farmers with regard to access to land, and therefore to food and income, is the 30-year land lease regulation. On the other hand, village leaders can still allocate the land for urban usage, taking away the land of farmers. In this case, village leaders hold a power position and can influence the access of farmers to natural capital and indirectly to food. Farmers hold a weak power position which make them vulnerable to land disposition, reducing their stability of accessing their main capital which provides them with access to food. Farmers are compensated financially for the loss in their natural capital. This provides them with the opportunity to access available food on the short run but on the longer run this can form a problem since their most important asset to access food has been taken away.

In the case for urban residents in Beijing, the natural capital - land - available near the city of Beijing to produce food for the city is declining due to the increase in physical capital, e.g. buildings and roads. Because of legislation the city is able to expand. This makes the city, and its residents, more dependent on the natural capital in other regions. Nevertheless, the city finds itself almost self-sufficient in the production of vegetables and fruits.

Not answering the second sub-question but considered worth to notice, the process of land management is fundamental in influencing rural people's access to capitals. Land is managed through collective ownership, while the user rights are assigned to farmers separately. This legislation provides rural residents with access to land. When land transfers are easier to obtain, farmers have more freedom to engage in other practices or to access more land. This can provide them with a stronger position in accessing available food; through a strengthened natural capital or economic capital (by engaging in off-farm practices and migration).

Also, farmers in China mainly operate on a small-scale basis, although agricultural cooperatives are increasingly engaged in, providing members with physical, social, human and economic capital. These cooperatives are thought of to be less vulnerable to stresses and shocks, leading to a more stable agricultural production and enhancement of farmers capital assets. This contributes to a less vulnerable availability food for rural and urban people. Small-farmers are more vulnerable to stresses and shocks although they are increasingly supported by the government, strengthening the stability of production and therefore the access to and availability of food for rural and urban people.

Having outlined the status of the agricultural land, government policies concerning the usage of the land and the organisational forms which exist to manage the land, the next chapter pays attention to domestic migration flows.

DOMESTIC MIGRATION

4.1. Introduction

During the time Mao was ruling over China (1949-1978), migration from the rural to the urban areas was prohibited from the early '60. The state controlled population movement, welfare distribution and production by using the hukou system. Free movement was prohibited by this system, as well as the right to choose workplace and residency. Conversion of a hukou - i.e. change from rural to urban status - was restrained and usually only accepted when the state needed to implement industrialisation projects.

Nowadays, more than 260 million Chinese live away from their place of origin, the majority being rural migrants living and working in urban places. Currently, rural to urban migration flows are the dominant pattern in domestic migration, determined mainly by regional differences which arise from pro-market reforms. According to the Chinese conception of a migrant in their statistics, a migrant is perceived as a person whose main job does not take place in the township of his/her hukou registration. The internal population movement is one of circularity and temporality. *"Floating population"* or *"liudong renkou"* is a term used to describe this circular movement of the migrants who move between several places of which their settlement status is unstable. This circulatory movement can be partly explained by the difficulty one faces due to the hukou system when trying to obtain a permanent residency status in an urban area, showing the institutional importance for spatial mobility. (Chan, 2010; Liu, 2014; Peng, 2011; Wong, Han, Zhang, 2015; Zha, Wu, Peng and Sheng, 2014)

The aim of chapter four is to address the third sub-question *"Which impact does migration has on the vulnerability of accessing available food for rural and urban people?"*. By investigating this sub-question, the impact of the migration trend in the vulnerability context on the accessibility of capital assets of rural and urban people comes to the fore. Also processes which are linked to the migration trend are captured. In turn, this is linked in the conclusion to the vulnerability of food security, addressing a part of the central research question. The rural-to-urban migration flow within China functions as one of the main forces in the trend of rapid urbanisation. The mobility issue in China is special since it was, and to a certain extent still is, restricted and highly regulated by the state by means of the hukou system. By looking at mobility, social-economic inequality comes to the fore. These social-economic inequalities can be linked to the capital asset approach, demonstrating that not everybody has the same chances in life, depending on one's capital asset construction. Migration in this case is referred to as the movement of people with a rural hukou to the urban areas since this is the main domestic migration flow present at the moment in China. One can argue about what is rural and what is urban and whether these two should be distinguished at all. At least here, rural and urban refer respectively to the areas in which people have a rural or urban hukou. Note that, although people with a rural hukou can reside in the urban area, this does not mean that this area then automatically is rural because this area is formally claimed by the city or town.

4.2. Relaxation of mobility control

The governmental mobility control explains the way in which legislation and institutions restrict people in accessing facilities. This institutional mobility control is typical for China and plays an important role when determining the accessibility of capitals, in which a clear distinction between rural and urban people comes to the fore. This unequal chances in accessing capitals between rural and urban people can show differences in vulnerability to food security. In this paragraph, the hukou system and its remaining parts are explained.

The hukou system functions as a registration system and as a residency permit, attaching a rural (agricultural) or urban (non-agricultural) status to each child at birth, meanwhile coexisting with several welfare benefits and rights. This creates differentiated identities between being urban or rural, being migrant or local resident. The attached status was, and to a large extent is, a strong determinant for people's rights, affecting their socio-economic well being. For example, education, qualification for public housing and medical care, unemployment and retirement benefits are all regulations which were attached to the hukou status. Most forms of insurance were not available for people with an agricultural, so rural, hukou. Also, during the time that grain and other food was rationed, those with an agricultural hukou had no entitlement and had to feed themselves, while those with a non-agricultural hukou were provided with grain by the state. (Liu, 2014; Chan, 2010)

Another welfare system which is typical for China is the danwei system. This is an institution and work unit, like hospitals and steel plants, which organized the majority of China's urban population and was responsible for the subsistence, social welfare and political life for its employees. This system tended to tie people to their place of work, trying to restrict migration *within* the urban places. It provided employment, medical care, housing, food rations, pensions and more to people of a specific danwei. Living a life outside the work unit was actually impossible since all resources were accessible through the work unit. For the rural population, the commune or another form of collective agricultural organisation fulfilled the same function. Today, the importance of the work unit is declining, mainly due to the market reform. This provides people with the possibility to choose where and what to consume and they are not bound to a specific place to live. They do not longer rely on what is provided by the danwei to which they once belonged. In some situations, the danwei has disappeared more than in others and there where the danwei remains, certain services are provided rather than it is controlling one's life totally. Nowadays some firms lack a danwei, mainly private firms, and others are function more according to the danwei system. This can emphasise a sense of unfairness because those who are part of a unit and those who are not, are not equally equipped with the same access to resources.

The decline of importance made it easier for urban residents to move freely across the city. Still, in 2004, 65% of the urban population resided in communities based on danwei. The reform of the danwei system has led to a greater mobility amongst urban residents and to more interaction between people of different danwei. The reform leads to urban space restructuring in which urban space expansion is facilitated. Housing was first managed by the danwei system and now is increasingly managed by the market. This contributed to urban segregation reflecting socio-economic status and the appearance of new urban poverty. (Chai, 2014; Hanlin, 2007; Liu, 2014)

According to Xie and Wu (2008) the danwei as a work unit influences social stratification in urban areas. Although a private sector is evolving, offering alternative ways to be financial secure, the danwei did not lose its' importance to provide financial security. Social security, i.e.

health and pension, is not provided by the danwei any longer, although the bond between urban people and their danwei has been strengthened since the end of the 1980's. This because, due to economic reform, social security systems and the labour market are not fully functioning yet and therefore workers are more relying on the work units for their standards of living.(Xie and Wu, 2008)

Not only the danwei system is transforming, the hukou system is transforming as well. This system has been under reform since the '80 to make labour mobility possible in order to stimulate urban development, making population movement more market-driven, less controlled and so more free. Also, the hukou system is being reformed by trying to neutralizing the settling of migrants in host cities. An important change concerning the hukou system is the construction of two special residential registration forms; (1) temporary residential permits and (2) the blue card or blue-stamp hukou. While the latter is provided to investors or professionals, the former is given to people who have a legitimate business or job in the city. A blue card must be paid for and the bigger the city the higher its price. Nevertheless, owners of a blue card can enjoy most of the urban hukou privileges and will receive a true urban hukou status within 2 to 5 years. (Liu, 2005)

There can be a distinction made between temporary migrants and permanent migrants. Temporary migrants are permitted to migrate to towns and cities but do not obtain necessarily an urban hukou, finding themselves in a marginalized position being neither accepted as legal urban workers nor treated as such. The rural migrant workers do not have urban unemployment relief rights or other minimum protection benefits. The number of people without a local hukou, frequently named non-hukou migrants or floating population, has increased over the years. Permanent migrants are state-sponsored and are allowed to take advantage of institutional resources. The state-sponsored migrants are often bound closely to the state, being amongst the most privileged groups in society. For instance, these people are university students and previous state-sponsored migrants. Besides, they most of the time obtain the best-paid jobs which are not open to temporary migrants who are often left with the least comfortable jobs. Urban 'natives' take up the middle part in the job spectrum. (Fan, 2010) It could be argued that this division not only results from a differing human capital but is also an outcome of the institutional order in which the state controls a residents' status, therefore partly determines the access to resources which can enhance one's capital assets and reinforces in this way a new social order of stratification.

Another distinction can be made between the first wave of migrants and a new generation of migrants. Since the opening-up reform process, the increase in the population residing in urban areas has risen from 172 million in 1978 to 577 million in 2006. A new generation of migrant workers is present. These people are born from 1980 onward and are looking for or are engaged in non-agricultural employment. The first generation did not consider permanent settlement in the city, i.a. due to cultural ties to their hometown and farmlands and where concerned with sending remittances back home. The next generation migrants who grew up in towns and cities, most of the time more educated, do not have such an inherent tie with and memories of the countryside and do not experience that much the pressure of lifting one's family out of poverty. Besides, the new generation builds on a broader social network and engages in social interactions with people from different backgrounds. They are also more mobile, therefore they tend to shift between places which offer them the best opportunities, not intending to move to the countryside. The new generation migrants desires to become part of the urban class, having better access to social insurances than the first generation of migrants experienced. Requirements to be able to transfer one hukou status into the other differ among

places and relies on personal characteristics. Metropolises and capitals of provinces are most preferred and the migration control in those cities are those of the strictest kind. Migration can be claimed today to be governed by the market mechanism in order to select the most desirable migrants. Make the access to smaller cities more attractive is a strategy of the government to avoid population pressure in the largest cities. (Cheng, Wang, Chen, 2014) Most hukou conversions are individually which can be affected by family or individual characteristics in which education and age are important factors.

It is well stated that an urban hukou status contains more benefits and rights and the higher the administrative status of a city, the more offered privileges the local hukou holders can enjoy.

This triggers more people to migrate to the big cities to take part in these privileges.

Nevertheless, the hukou system still makes it difficult to obtain another local hukou when one migrates, and so a legal status of residency is difficult to obtain. The hukou system still serves as a selective institution in taking up migrants in the public services of the host city, although it has become easier than before to be welcomed in the city. The central government allowed for migrant inflows to the city but local governments have set up rules to control these flows in which the preference has been given to the higher educated and skilled workers to contribute to the urban development. Sometimes rural communities are offered the urban-hukou status in turn for their rural land-use rights. This can be an important consideration in attaining the urban hukou. Sometimes sub-urban farmers refuse to transfer their hukou because they are not sure whether or not the new status will bring a better life. Especially for rural inhabitants which are low-skilled, their access to land guarantees a basic source of living. Moreover, migrant workers often keep their land in their places of origin as a form of social safety net. They are aware that they have less chance in attaining a secure job in the city and see their non-hukou identity as the biggest obstacle in acquiring equal treatment and chances to integrate in the urban society. (Chan, 2010; Liu, 2014)

Although most of the migration within China is temporarily, people do decide to settle. Length of stay, presence of family, gender, networks, and employment help determine if circular migration turns into settlement. Where women find greater autonomy when they move to the city, men face more discrimination and seek to return to their rural place of origin to regain their social status. (Connelly, Roberts, Zheng, 2011) By migrating temporarily, families are able to make full use of family resources such as land and housing in their place of origin. By doing this, employment opportunities are diversified. Zhu (2007) found that the floating population is still heavily reliant on their land in the place of origin. It functions as a form of safety net when adverse circumstances occur or when people are retiring.

Albeit the hukou system is under reform, it still can be argued that this system makes up an important part of a social-economic dichotomy. Urban citizenship is mainly in line with the urban household registration, providing urban citizens with a bundle of social rights. For instance, the provision of a workplace, medical care, childcare, subsidies for public transport and housing. These bundle of rights is denied to rural people. Rural hukou residents in urban areas are more and more allowed to enjoy urban education but they have to pay higher fees, e.g. for education, than the urban hukou residents. The largest part of studies carried out to examine the hukou system present a negative attitude towards the system because it is perceived to tighten freedom of movement and does not provide equal opportunities. The distinction between urban and rural by the hukou system is deepened with the market transition in China. Nevertheless, the central government has been changing the hukou related policies and legislations in an attempt to close the rural-urban gap and reduce the conflicts which exist due to the socio-economic inequalities. Who benefitted the most from the hukou reform is hard to

detect although a common assumption is that the reforms contributed to the integration of the more skilled, educated, richer migrants and that most rural-urban migrants do not have access to all available rights in the cities. (Cheng, Wang, Chen, 2014; Liu, 2005; Wang, 2008)

4.3. The left behind

There exists a large rural outflow of migrants, leaving people behind. This means that living conditions alter, and therefore possible ones' access and availability of food, strengthening or weakening the vulnerability to food security.

In China, a gender division exist in migration: women tend to stay behind, especially when they are married. This demonstrates a process of power relations. Young single women are more likely to migrate but return to the village when they get married. One way of explaining this are the job options for women which are seen as inferior to men's. Also, the lack of social networks and the violence against women are explanations. The general migration pattern depicts a rural outmigration of mostly men of all ages, removing an important labour factor from agricultural productivity.

As stated in the previous chapter, agricultural production determines partly food availability and more indirectly food access, therefore also impacting vulnerability of food security. In China, agricultural production is relying more and more on women's labour and make women the direct primary labour force supporting food security, according to Meng (2014).

Nevertheless, when women are managing agricultural production, they can suffer from less access to inputs, e.g. fertilizer, improved seeds or human and social capital. Production on plots controlled by women is often lower than in other cases. Though, this is not widely agreed on. Scholars speak of an agricultural feminization in which women are becoming more active in agricultural practices. Some scholars think this feminization contributes positively to women's relationship with their husband, providing opportunities and space for them to improve their family status and enhance their social network. The majority of the scholars believe that it makes women more dependent on men due to the enlargement of the income gap and the tradition of the Chinese culture. Besides women's opportunities to enjoy education are being reduced, enforcing gender inequality.

The migrant earnings are perceived by women as more important than their own earnings from agriculture. According to Meng (2014), women would abandon farming when they would find a better opportunity to earn money. This is seen by Meng as a threat to the food security situation of the family and of the nation itself, since agricultural production is an important component of the food security issue and the governmental goal to be 95% self-sufficient in grains.

Nevertheless, women find themselves with a higher decision making status in agricultural production when their husband is migrating.

Children as well are affected by the migration of one of the parents. According to a study of De Brauw and Mu (2011) older children tend to be more underweight and younger children overweight. Younger children have a higher calorie intake but this does not have to imply that these calorie intakes are of higher quality. Older children are more likely to take up chores. This, plus less care due to the missing of an household member might contribute to the underweight issue.

The appearance of hollow villages in China is not unknown. The occurrence of land loss and decrease of inhabitants in the rural areas have led to the existence of hollow villages. It contains the outflow of young migrant workers, leaving elderly people behind. This outflow withdraws human capital from the rural area and leaves a question of who will work the land in the future.

The unofficial status of rural people in the city and their vulnerability with regard to lacking social and economical provisions, stimulates them to keep rural housing and land as security. This can lead to idle land usage. (Long et al., 2012)

In 2011 national research indicated that more than half of the peasants' income was earned off-farm. This stimulates technology application since time is scarcer when engaging in off-farm practices. The Chinese agriculture is transforming from subsistence to a more commercial one. Agricultural intensification is stimulated by policies. (Chen et al., 2014)

The spending of the remittances in China are not well studied. However, De Brauw and Rozelle (2008) indicate that there is no link between productive investment and migration since remittances are seen as part of the permanent income and are being used to increase current consumption in poor areas. In less poor areas this is also the case, although to a lesser extent. Zhua et al. (2014) found that migrant households save less than non-migrant households and no positive direct impact of remittances on gross output of farm production exists. (Zha, Wu, Peng and Sheng, 2014)

Migration may generate remittances which compensate for the loss in labour. The absence of a family member might have a negative effect on the income of the household generated by farming practices. On the other hand, absence does not necessarily have to induce that the yield goes down due to investments household can make to support production. (Taylor and Rozelle, 2003)

Over the past three decades, incomes in the rural area grew at a rapid rate due to the massive out-migration which caused a reduction of rural labour force. This, together with the aging of the rural population is further pushing the rural wage upward, promoting agricultural mechanisation. This endangers the widely present Chinese small holder farm model, because these forces tend to scale up and mechanise agriculture. Small farmers may not be economic competitive enough to be economically viable, leading to the abandonment of farming. (Christiaensen, 2014)

4.4. Mobility and Beijing

China's capital Beijing attracts a lot of people. According to Beijing's comprehensive plan, the resident population by 2020 should be 18 million. This limit was already exceeded in 2010 when it turned out that 19.6 million people resided in the Chinese capital. In 2010 the resident migrants accounted for almost one third of the total population of Beijing. Controlling population remains one of the main concerns of the Chinese government. This is especially the case for Beijing since it has an attractive status for migrants because it is the country's capital and provides unique privileges and opportunities. The city has a vulnerable physical environment which makes urban sustainability important. Population control is an important component in urban sustainability. Managing migrants' settlement by controlling employment is considered to be the main method to regulate migration in China. Registration management and housing management are also tools which Beijing municipality uses to control migration. In the 12th Five-Year Plan, population growth is wished to control for and the plan stated that priority should be given to the more skilled and professional migrants who can help to develop Beijing in the future. (Yi, Huang and Zhang, 2014)

Beijing belongs to one of the main destinations of domestic migration flows but has also one of the strictest migration control policies. It is difficult to obtain the local hukou in one of the eight districts of Beijing because the city aims mostly to absorb capital investors and the high educated. Each year Beijing controls with a strict quota for migration: 80.000 hukou's are

assigned by the central government and 60.000 by the municipality of Beijing. Probably this quota will decrease over time. The hukou system in Beijing has undergone several changes in which migrants now can apply for a permanent residence certificate instead of a temporary residence certificate. Resident migrants are increasingly staying on a long term basis and contribute to population growth. There has been debated whether the population size in the city has increased too much and specific population control is needed, especially with an eye on the migrant inflow. One statement argues that population growth in Beijing will lead to problems concerning employment, infrastructure, resources, environment and social services. The other side states that there is not an optimal size of a city and the market should lead to the best decision of individuals or companies to go to the city or not. (Cheng, Wang, Chen, 2014; Yi, Huang and Zhang, 2014)

Resident migrants are labelled new citizens and the municipality is aiming to give qualified migrants the urban hukou. This can be seen as a step towards the recognition of migrants being equal citizens. Some ten years ago, Beijing provided rural migrants with access to participation in the major social insurance schemes, i.e. health, pension, industrial injury, maternity and unemployment. By doing this, employers are forced to contribute to the social insurance of their employees. Since rural migrant workers seem vulnerable for shocks in labour demand, as the financial crisis of 2008-2009 showed when a big number of them suffered from sudden unemployment, this provision of social insurance gives them a better income security. (Chan, 2010; Yi, Huang and Zhang, 2014) On the contrary, a study of Cheng, Nielsen and Smyth (2014) shows that urban migrants can easier access labour contracts and are more likely to participate in social insurance schemes than migrants from the rural areas. This labour contract is more important to have access to social insurance than the hukou system nowadays. This is in line with other studies which also find that the hukou status is becoming less important in the social exclusion of rural-urban migrants.

Beijing as a city considers its migrants as a source of problems and puts great emphasis on the image of the city in which the prevalence of slums is not accepted. Providing easier access to education is feared by the city in a way that it could make it easier for rural hukou holders to obtain an urban hukou. When more people will settle, this will increase the pressure on urban facilities. The Beijing Municipality has changed its attitude towards education and therefore made it also available to migrant children. Unfortunately, these children experience cultural and institutional discrimination within the - often low quality - schools they go to. (Wang, 2008) The Beijing Municipality wants state owned enterprises and public organizations to employ local residents. In the non-state sector, migrants and local residents compete for jobs. When employing a migrant, the employer has often less responsibilities towards this employee. Migrants are becoming more important to Beijing's economy but are not contributing negatively to unemployment as one could have expected. Through social networks migrants often find a job even before migrating. When not finding a job as a migrant, they often leave the city due to a lack of social security.

4.5. Conclusion

In this conclusion, the third sub-question *“Which impact does migration has on the vulnerability of accessing available food for rural and urban people?”* is answered by demonstrating how access to and availability of food for rural and urban people are affected by the trend of migration and the processes which do relate to this trend, revealing how vulnerability of food security is influenced.

The availability of food is questioned by the huge outflow of human capital from the rural to the urban areas. This outflow can be attributed to the relaxation of the institutional hukou system. People are more focussed on the city, striving to obtain an urban hukou to reside legally in the city and enjoy city-rights to the fullest. This rural outmigration, leaving elderly people, children and women behind, leads to a less clear future of who will work the land to make food available. Besides, the facts that the second wave of migrants do feel less connected to the rural area and that women prefer non-agricultural jobs contribute to this uncertain future of domestic food supply.

A consequence of the loss in human capital results in agricultural modernisation practices. This endangers the existence of small farmers who can be forced to stop farming when they experience too much competition because their economic, human, physical and natural capitals are not strong enough. Obtaining a well-paid job off-farm to generate economic capital to access food can be difficult since they do not possess strong human capital to do so. In this case rural people have lost their most important source to access food - land - and their food security has become more vulnerable.

A distinction can be made between temporary and permanent migrants with regard to the way in which migration contributes to the vulnerability of accessing available food. Permanent migrants are taken up in the welfare systems provided by the city and temporary migrants are not granted those privileges. These welfare systems are supportive for ones' access to food since they provide economic security. By profiting from the privileges granted by obtaining an urban hukou, the economic capital of the permanent migrants is strengthened, providing them with a strong asset to access food. Temporary migrants hold a marginalised socio-economic position in the urban areas. Nevertheless, the acquired economic capital by the temporary rural migrants in the urban areas is used mainly to access food for the migrants themselves and to support the rural household economically, compensating for the loss in human capital. The temporary migrants can always rely on their natural capital of land in the rural area to access food. This means that the access to food, using natural and economic capital, is strengthened due to a diversification and strengthening in assets to access food.

For the city Beijing, which has not much natural capital at its disposal, controlling the inflow of migrants is extremely important in order not to put too much pressure on urban facilities. Urban people have less direct access to food since they have no or little natural capital at their disposal. Therefore, their economic capital is important to access available food. In the case of Beijing the migrants do not affect the economic capital of urban residents negatively.

Besides the choice to migrate, maybe not always individually made as migration is also a household choice, Chinese inhabitants might be forced by the state to migrate. In these cases rural or suburban land is converted into urban needs as part of urban space planning. The next chapter is i.a. aligning this issue with regard to vulnerability to food insecurity.

URBANISATION

5.1. Introduction

Urbanisation can be understood as a growth in the proportion of people living in urban areas. In the most populous nation of China, having the largest urban population in absolute numbers, the urbanisation rate situates 10 % under the world average. It's lower level of urbanisation can be explained by the restricting migration policies which were put in place before the economic reform as has been described in chapter 4. Since the start of the economic reform, urbanisation has accelerated and the urban population is to be expected to exceed 60% of the total population in the year 2030. The process of urbanisation is dependent on a stable supply of natural resources, e.g. fresh water, food, fuel and land, although the urbanising world in general is facing resource scarcity and environmental degradation. Urbanisation has led to income increases which have stimulated demands for higher intake of animal protein and high quality fruits and vegetables. It broadened the markets of high-quality food products which are now affordable for the normally richer urban population which is demanding a more diverse diet than their rural fellows. Nevertheless, the diet difference is diminishing due to an increase in rural income which make that rural people are also able to afford high-quality food products. China's agricultural system is being restructured by the prevalence of changing diets and the more market-oriented agricultural policy. There is an increasing focus on a more diverse composition of agricultural production, in which the focus is shifted towards more high-value crops. (Chen, 2007)

This chapter about urbanisation aims to address the fourth and last sub-question “*Which impact does urbanisation has on the vulnerability of accessing available food for rural and urban people?*”. By describing the trend of urbanisation, the chapter explicitly tries to dismantle the struggle between the different land usages in which agriculture competes with urbanisation to show how the access and availability of land and food are influenced. Processes which influence the urbanisation trend, meanwhile impacting the access to capitals as well, are being discussed. By figuring this out, the vulnerability of rural and urban people with regard to their food access will be further investigated and contributes to answering the central research question. The potential and the consequences of Chinas cities to provide accessible and affordable food for its citizens, by relying on the rural areas as well as on their own capabilities to produce food within the city is being addressed.

5.2. Urban space expansion

In order to understand the pressure on agricultural land, partly caused by urban space expansion, it is important for this thesis to gain insight in how and why urban areas are expanding since it competes with the preservation of agricultural land. This pressure on the quantity of arable land relates to the availability of food and so to food access. This section is elaborating on this issue.

The urbanisation trend which the world is facing now is historically unknown and this trend, together with population growth, place heavy stress on the limited amount of arable land in order to meet food demands, also in China. China's urban population has increased over time. In 1979 20% of the total population was residing in the urban area while since 2011 more than 50% of the total Chinese population was living in cities. The number of cities has increased as well as the number of people living in those cities. There have been three waves of urban expansion in China, also called Chinese enclosure movements, which have occurred during the 1980s, around 1992 and 2003. Due to urbanisation, agricultural land is converted into urban usages. Changes in population numbers and land use policies, economic growth and city redevelopment contributed to land use changes within Chinese cities. (Li, Zhao & Cui, 2013; McBeath and McBeath, 2010; Liu et al., 2010)

Since the 1990s cities in China are expanding rapidly. Due to this development, villagers lose their land rights because of land requisition (more about this topic can be found in section 5.3.). Rural-urban migration and expansion of the urban areas leads to the creation of the 'urban village'. In China, urban villages exist as a result of rural settlements under development and are becoming transitional areas in the pace of rapid urbanisation. The Chinese call this phenomenon *chengzhongcun* which literally means *village circumvented by the city*. Rural villages have developed themselves into urban villages. This development of the urban village leads also to the disappearance of the right to use land by villagers. Nevertheless, they can keep their governance over their houses and housing plots within a system of collective land tenure. Unable to capitalise their assets through the selling of their house or land, villagers invest in the expansion of their houses. This is done in order to rent the extra created rooms out to migrant workers or urban citizens. It happens on the expense of the most important resource of farmers - land - which has provided them for generations with a certain degree of livelihood security. The habitat of traditional Chinese villages as it existed in the past is no longer present. These newly created villages are often associated with unsuitable land use, social disorder and worsened environment. On the other hand the urban village is a place for settlement for local landless farmers and migrants. Local landless farmers can generate income by renting out space in their expanded homes and migrants pay a considerable lower sum of money compared to the places available closer to the city centre. Even though several urban villages still have agricultural land at their disposal, the majority of land in urban villages is used for non-agricultural ends.

The concentration of migrants in urban areas and around the fringes of these areas, puts pressure on public facilities and public space. City governments are not triggered to redevelop or requisite the village settlement since this would be accompanied by immense costs. Due to the large inflow of migrants over time, demand for housing increases and this drives up the housing prices. For many farmers households, the income generated by housing rent contributes to a large part of the total income of the household. The rental income provides them with a certain security. This is an important support since landless villagers hold a marginalised position in the urban labour market as they have limited human capital. (Liu et al.

2010)

Land is not only needed to construct buildings on, also facilities for urban residents need space. Urban residents have more income at their disposal. This, together with a growing middle class, who wants to use their leisure time partly by engaging in recreational activities, are transforming agricultural land into non-agricultural practices. On the other hand, scholars are arguing that urbanisation under certain conditions may save arable land because land in that case is used more efficiently. (McBeath and McBeath, 2010)

Urban governments hold a superior authority position with regard to land acquisition. This power position generally deprives rural inhabitants of their land and can lead to distortions (e.g. inability of migrants to settle in cities, too many industrial sites and overcapacity). Under the name of development, public interest and planning, city planners can redraw the city frontiers and take up rural land in the urban space in which villagers cannot raise objection. When land is claimed by a city, rural residents are compensated and paid. This money is equivalent to 10 to 30 times the value of the agricultural land output. After the change of landownership, urban governments lease the land to industrial and business actors. Farmers often get a lower price for their land than the price the urban governments are leasing the land afterwards. This practice can therefore be referred to as being a money making machine. It has become a major business since the late 1980s and serves as an important income of cities budgets. In turn, this budget is reinvested in infrastructure, urban district development and projects to attract investment. (Cheng, Wang and Chen, 2014)

Estimates show that urban sprawl and industrial development contributed for half of land conversion from agriculture to construction area. Conversion of farmland near the cities is tried to prevent by the central government. The government has set rules which state that converted agricultural land needs to be replaced by other land which is transformed into agricultural land in other places. Therefore, flood and marsh land has been cultivated, often being of marginal quality. (Chen, 2007; Lang and Miao, 2012)

5.3. Land struggles

Urban space expansion as described in the previous section comes along with land struggles. It is useful to understand these struggles as they reveal power relations and demonstrate the vulnerability of rural people when accessing food.

Urbanisation needs land for its facilities although the division between urban and rural land markets forms an obstacle. During the time the planning system was governing land use, land was owned, allocated and used by the state. When China's economy became more globalised and liberalised, this system became less useful because it was an obstacle to foreign investments. Transforming land from rural to urban usages was one of the most common used ways to change land use in a way which was appreciated by the state. This way of land transformation is increasingly contested by the control of land rights of village communities, especially in urbanising areas where farmers strive for their land use rights. The current Chinese constitution states that the land in urban areas belongs to the supervision of the state and rural land is owned by village collectives. Households can use the land having fixed-term contracts. When time passed by, the land use rights had a longer duration time. This, together with more opportunities to rent the land to others led to a decrease in probability of land reallocation. (Song, 2015)

Currently land resource trade is not possible between the urban and rural area in China. The year 2002 brought the Rural Land Contracting Law and was aimed at supporting a secure

ownership of households' rights to use land. Thirty years of land-use contracts were promised in order to discourage large-scale land reallocation projects and to give households the opportunity to transfer land mutually. In some cases, urban expansion into suburban areas have allowed relocated people to return to the same area after a while. Even though reallocation is restricted by law, land reallocation exists. In order to lease the land to developers or other interested actors, the communal rural land has to become urban. Therefore, rural land has to be expropriated by the government to make it state owned land. Then, this state owned land can be traded as urban land, converting the land into urban usages in which private commercial development or developments to support the public sectors are facilitated. (Liu, 2014)

The study of Meng (2014) indicated that farming serves as a guarantee for people because it provides them with the opportunity to produce food themselves when they are old or when times of migration are bad. Safeguarding the agricultural land not only protects farmers but also protects the stability and food security of the whole nation.

The state has the power to define and enforce property rights. However, different state agencies have different goals and views according to property rights. While the state is concerned about food security, this runs counter to the local governments' aim to industrialise and urbanise. Often, local agents try to requisition land beyond the stated quotas. In 2008, a land management law was initiated by the central government but led to resistance amongst local governments and did not make it to pass, demonstrating the urban power.

Besides the land conversions initiated by local governments, rural communities themselves do not always keep up with the formal rules. In urban fringes, people construct illegal housing on their land to host migrants and low income population, due to the lacking existence of cheap housing facilities in cities. (Su, Tao and Wang, 2013) This process can be referred to as self-help development. Building illegal housing on the most productive resource villagers have, i.e. land, makes them rely on the rent incomes. (Song, 2015)

It is predicted that by the end of 2020, 100 million Chinese farmers will have lost their farmlands. The state pays the farmers a sum of money which is based on the value of land, the loss in crops and the allowance to resettle. In order not to convert too much agricultural cropland into urban usage, quota's have been set. Even though this measurement has been taken, massive rural land conversion has occurred, leading to the loss of land for farmers who are meanwhile lacking rights and so do not receive sufficient compensation. Moreover, they lack a certain human capital which gives them a deprived status on the urban labour market. There are no proper guidelines which explain what a just compensation should contain. There are no independent courts where farmers could go to in order to bring their unjust treatment under attention. They are only allowed to negotiate with the local government and are not equipped with the right to reject land conversion. Several new policies are aiming at improvement of land management and are more peasant-oriented.

When farmers are relocated and dispossessed of their land, they have to rely on economic capital in order to access food on the market. Prior to this, they raised their own animals and grew their own crops. Farmland serves the same purpose as the urban social security system does. (Hui, Bao and Zhang, 2013; Ong, 2014)

5.4. Urban agriculture

The previous sections mainly discussed the access to and usage of land for rural citizens. Producing food is not only an issue of the rural areas, it is besides also an issue of urban areas. Therefore this section outlines the potential of agriculture in the city, focussing on Beijing.

Urban agriculture can be understood as agricultural practices which are located within or on the borders of a town, city or metropolis. This type of agriculture raises and grows, processes and distributes food and non-food products by making use of products, services and material and human resources which are found in and near the urban area. Urban regions are struggling with food security. On the one hand, the urbanisation process is leading to higher standards, greater diversity and more food consumption, demanded by a richer urban population. On the other hand, farmland is being lost due to urban land encroachment. The importance for food in urban planning is becoming widely recognised in China. In the early 1990s, China's urban agriculture was lifted from the ground and was implemented in Beijing as well. A large share of high-value agricultural production, like fruits and vegetables, in China is located in urban areas and areas around the urban fringes. Here the accessibility to markets is better, the infrastructure is more developed and there is a greater amount of economic capital available. Agricultural production in those areas is enforced by the stimulation development of efficient farming systems and intensive use of the soil. (Chen, 2007; Redwood, 2009)

In Beijing Municipality the agricultural land available has declined. The areas of orchards have spread, which is a direct cause of the increased demand for fruits from the urban residents. Besides, the conversion of arable land into perennial crop lands is subsidised by the government. This reasoning builds upon the thought that farmers cannot compete with their grain crops on the world market and that produce from the orchards can better meet the demands of urban dwellers. According to Van Diepen et al. (2003), the Beijing Municipality is largely self sufficient in vegetables, although the study did not distinguish different kinds of vegetables and for certain types of vegetables there might be a shortage in certain periods of time. Beijing integrates urban agriculture into its development plans by designing agro-parks in areas around urban fringes to support food production and tourism. Five different zones have been recognised, each focussing on different crops. The inner urban core contains exhibition, landscaping and gardening activities. The inner suburban plain is mainly aimed at tourism and the usage of highly developed techniques. The outer suburban plain focuses on large-scale agricultural production. The mountainous area is assigned to grow fruits and for ecological protection. The zone of regional cooperation helps to build food security in a way that stimulates relationships with cooperatives. The '221 project' guides this development of the implementation of the five zones, together with the established 221 information platform in order to support urban agriculture. Besides, urban agriculture in Beijing is supported to use resources as efficiently as possible.

The Beijing Statistical Yearbook of 2010 made a prediction about rural to urban land conversion within the municipality by the year 2020. Nevertheless, this forecast has been exceeded already. The urban fringe functions as a specific economic and geographic region in the transition area between rural and urban places. Land use is constantly changing and it is in this region where protection of farmland is important.

Not far away from Beijing, 30 miles southwest of the centre, a large agricultural Eco Valley is planned, based on food sustainability production. The purpose of the project is to grow and produce food in the area itself. The area where this project is situated is integrating farming families in the project. (Jianming, 2014; McManus, 2014; ; Van Diepen et al., 2003)

5.5. Conclusion

The fourth sub-question “*Which impact does urbanisation has on the vulnerability of accessing available food for rural and urban people?*” is answered by demonstrating how access to and availability of food for rural and urban people are affected by the trend of urbanisation and the processes which do relate to this trend, revealing how vulnerability of food security is influenced. The struggle over land came mainly to the fore.

The availability of domestically produced food is issued by the urban space expansion which is increasingly present throughout China. By converting more agricultural land into urban usage, the potential to make food available is weakened. The urban governments hold a power relation with regard to land acquisition in which farmers are often marginalised and deprived of their land. Rural residents cannot raise objection but are economically compensated for the loss in their natural capital. This provides them with greater economic capital on the short run but is taking away an important asset of their natural capital on the long run which had provided them with a source to access food. Nevertheless, the government tries to combat this loss of agricultural land by means of legislation. Marginal land is allocated to replace the converted agricultural land. Whether this land is able to make the same amount of food available in the long run remains questionable. Moreover the chance of land re-allocation has been reduced by law. This gives rural households greater security over their land and their right to use it and so the possibility to access food. Nevertheless, reallocation exists.

While the central government is concerned about food security, this runs counter to the local governments' aim to industrialise and urbanise. Rural-urban migration and expansion of the urban areas leads to the creation of the 'urban village'. This deprives villagers of their right to use land, therefore taking away their most important resource in accessing food - land - which has provided them for generations with a certain degree of livelihood security. The landless farmers seek other methods to access food. Therefore they try to strengthen their economic capital by renting living spaces to migrants. This is an important support since landless villagers hold a marginalised position in the urban labour market as they have limited human capital. Urbanisation is dependent on a stable supply of natural resources, e.g. fresh water, food, fuel and land, although the urbanising world in general is facing resource scarcity and environmental degradation. In addition urbanisation has helped to increase the economic capital of the Chinese people, rural and urban. This has led to more demand for diverse food and activities, placing more pressure on natural capital to make food available. The inflow of migrants leaves cities with questions about space allocation. As an example, Beijing has acknowledged the importance of food for its residents and has set up urban agriculture projects in the city to meet the changing demands of the population. By doing this, more food becomes available to the urban people, although the inflow of migrants can weaken this strengthening in food availability. The city is largely self-sufficient in vegetables and fruits but has to rely on other regions for additional produce.

CONCLUSION

This thesis has focused on the vulnerability of food security in China, highlighting the developments of migration and urbanisation. The focus of this study was to investigate the interrelation between the trends of urbanisation, migration and the vulnerability of food security for rural and urban people by applying the capital asset approach in order to answer the main research question adequately:

'How do domestic migration flows and urbanisation influence the vulnerability of food security for rural and urban people in China?'

By choosing this vulnerability perspective, vulnerability of food security is understood as the risks people bear to get food insecure, looking at which capital assets they have at their disposal in order to access available food. This central question was divided into four sub-questions: *"What is food security? ", "How do Chinese food security policies relate to the vulnerability of accessing available food", "Which impact does migration has on the vulnerability of accessing the available food for rural and urban people in China?", and "Which impact does urbanisation has on the vulnerability of accessing available food for rural and urban people?"*.

Having tried to answer the four sub-questions in the best possible way in the previous chapters by making use of the capital asset approach, now the central research question can be answered. Throughout this thesis, four main categories of people in the Chinese society were apparent, i.e. the farmer, the migrant, the landless farmer and the urban resident. It has come to the fore that the risk farmers bear to get food insecure, looking at the urbanisation and migration trends, is mainly influenced by the access to natural and economic capital. Farmers access to economic capital is strengthened but the access to natural capital remains vulnerable due to the insecure land use rights. When expelled of their lands, farmers usually have little other assets to rely on to access food, meaning that the risk to get expelled of the land contributes to an insecure situation, which makes them vulnerable in the trend of urbanisation with regard to their food security. Indirectly this also affects other rural and urban people in their vulnerability to food security since less available domestically produced food can be accessed. It is highly important for farmers to have a stable access to land since this is a very important natural capital asset to access food and make food available.

The conversion of rural to urban land has led to the development of urban villages. Although farmers are also dispossessed of their land, they have the opportunity, due to migration practices, to strengthen their economic capital, which is a stable capital asset. With this economic capital they are able to access available food. These landless farmers are not able to make food available themselves but since the economic capital is a stable capital asset, their access to food is also stable when the availability of food remains stable as well. This means that their vulnerability to food security is not as vulnerable as in the case of other farmers who cannot rely on such a stable source of economic capital.

The trend of migration has its own effect on the vulnerability of food security for rural and urban people. Because the hukou system is relaxed, rural people are able to obtain economic

capital in the urban areas. Permanent migrants have enough economic capital and socio-economic safety-nets at their disposal to access food, while temporary migrants obtain a more vulnerable position. Nevertheless, temporary migrants are able to access economic capital, which is used to support the people left behind in their access to food. This diversification of capital assets to access food, i.e. land and off-farm jobs, contributes to a less vulnerable position in accessing food. When one capital asset is weakened, the access to the other capital asset can be relied on to access food.

The availability of food finds itself in a risky position due to a large outflow of human capital, leaving a part of the arable land idle. Who will work the land in the longer run remains questionable. Mechanisation and large-scale farming practices are occurring in China, partly due to migration. This forms a risk to the small-scale farmers who have less capital assets at their disposal to make food available. Whether this is a good development with regard to increasing yields, making more food available, remains speculative.

Urbanisation and migration lead to a strengthening in economic capital of rural and urban people. This provides them with the possibility to demand another quality of food, which need more natural capital to produce, placing pressure on the arable land and the availability of domestically produced food.

The large inflow of migrants into urban areas places more pressure on urban facilities. Arable land is decreasing around cities due to urban expansion, which make cities rely on regions further away for food provisioning. This reliance make urban areas more vulnerable in making food available for urban residents. In order to relief the pressure, migration is tried to control strictly and urban agriculture is taken up in policies to make the cities less reliant on other regions as an attempt to decrease the vulnerability to food insecurity. For urban residents, economic capital is essential in accessing food since they are not provided with natural capital to access food.

Thus, the availability pillar of food security seems to be vulnerable through the perspective of trends of urbanisation and migration since these trends make the supply of domestically produced food in the future doubtful. The economic capital asset which is used as one of the main assets to access food, seems to have gained in strength for both rural and urban people due to migration and urbanisation. Nevertheless, the security about the access to land for farmers is vulnerable. This natural capital provides farmers with the main access to food where economic capital provides urban residents with the main access to food. When only relying on the natural capital, farmers obtain a vulnerable position with regards to food security when they are deprived of their land. Relying on both natural and economic capital strengthen food security for farmers, making them less vulnerable in accessing available food.

This thesis has mainly focussed on the domestic food production, threats to and possibilities of agricultural land. The domestic food security policy to provide 95% of the grains by domestic production has been investigated, not addressing other policies regarding other food production sectors, like livestock and fisheries. This certainly also has its impact on the vulnerability of food security for China. No attention has been given to the situation of international trade and how this influences the vulnerability of food security for China's population. This could be an interesting topic to deepen out in future research since China is increasingly opening up its markets. Besides, it could strengthen food availability which now seems to be vulnerable. Therefore the picture which is provided in this study can be altered. Furthermore, the (English) literature which exists about urban agriculture in China is not widely available, although this topic is interesting and might be very important for the future of

food security in China's cities. This could be another valuable issue in further research in order to gain a better understanding of Chinese peoples' situation of vulnerability to food insecurity. The very new development of food orders over the internet and how this relates to the weakening or strengthening of food security for rural and urban people could be an interesting issue too.

How exactly the compensation for the loss in land influences food security on the longer run should be investigated into further detail since land functioned as farmers most important capital asset to access food and a significant part of Chinese farmers have to deal with this issue. Also, the development of the agricultural modernisation process should be further deepened out in relation to the availability of food for the nation and influence on small-farmers with regard to vulnerability of food security.

As one can see, the issue of vulnerability of food security is very complex and dependent on processes, structures and a context of vulnerability. Taking food security as it is conceptualised by the FAO, frames the way this study has viewed the vulnerability of food security. This vulnerability of food security did not account for the nutrition part and therefore covers not all aspects of the food security concept of the FAO. Nevertheless, access and availability are two important components when reviewing vulnerability of food security and therefore can capture the vulnerability of food security to a certain extent.

The FAO conception about food security does not account for the rights people can access in order to be provided with food, as the food sovereignty concept does account for. Though, rights concerning access to land and socio-economic facilities are found to be important in one's vulnerability to food security. Therefore, the capital asset approach has been chosen in order to capture these access to rights and other processes of legislation, institutions, power relations and policies which are thought of to be highly important in influencing the vulnerability of food security. Nevertheless, the capital asset approach bears limitations too. It is not clear whether the strengthening of one capital asset can compensate completely for the loss in another capital asset. Also, having access to capital assets does not induce that these capital assets are actually used.

In this thesis only specific perspectives have been investigated due to its' scope, in this way neglecting other perspectives. This limitation of the literature research can have caused a distorted picture of the vulnerability of food security for rural and urban people in China. It is not sure whether important literature has been overlooked or wrongly interpreted. In addition, the concept of food security is not the only way to look at accessing and availability of food. In this study, the case of Beijing has come to the fore to express the difficulties and possibilities urban areas face in the pace of urbanisation and migration and the vulnerability of food security. When another city or urban area would have been investigated, other conclusions could have been conducted. On the other hand, Beijing shows clearly how migration and urbanisation is impacting the vulnerability of food security for urban people.

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