

The rush for the last South-American land reserve: the Paraguayan Chaco

A analysis of new investors in the Paraguayan Chaco and their economic, social and environmental effects

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The journey has been a great professional and personal experience.

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Summary

This study assessed how and to what extent the rush for land and agricultural expansion has affected the Chaco. It tried to reveal motives and drivers of new investors to come to the Chaco using the theory of translocal development. Moreover, this research assessed how new investors have affected the Chaco socially, economically and environmentally. The land-use changes were addressed using a livelihood approach and looking at the outcome of CSR-values. Several semi-structured interviews were conducted, together with an analysis of secondary data, in order to answer the research question. Opinions, perspectives and experiences from the different investors, governmental institutions, experts and NGOs were collected to give a general overview of the developments in the Chaco.

Most of the investors invest in cattle farming and to a lesser extent in oil and gas prospections, soy experiments and land speculation. The reasons for investors to move into the Chaco differentiated between local and global developments. The introduction of a new grass type in the nineties made it possible to extend cattle farming. The laws in Paraguay are easy for an investor to comply with and the taxes are low. In addition, land prices in the Chaco are relatively low. It is the global growing demand for meat, soy and fossil fuels that have stirred investors to invest and move into the Chaco. Foreign investors mainly come from Paraguay, Brazil and Uruguay.

As a result of the arrival of new investors the Chaco as a region is getting more important for the national economy. Moreover, commercialization and enhanced infrastructure emerge in the Chaco. Socially, the arrival of new investors affects the indigenous people negatively mostly. While the Mennonites experience more competition, they also benefit from the new job opportunities that arise with the arrival of new investors. There have been multiple cases of displacement of indigenous communities because they do not legally own their traditional lands. In addition, indigenous people see their livelihood assets declining with less access to resources, less secure shelter, less self-determination, less freedom and less amount of land. The access to health and the ability to work did enhance since the arrival of new investors. The environment is affected through deforestation, biodiversity loss and salinization.

Resumen

Esta investigación aborda el cómo y en qué medida la precipitada búsqueda por obtener tierra y la expansión de la agricultura han afectado a la región del Chaco. Así mismo, esta investigación aplica la teoría del *'desarrollo translocal'* con el fin de desentrañar los motivos e impulsos que los nuevos inversionistas tienen para concentrarse en la región del Chaco. De la misma manera, esta investigación explica el cómo las nuevas inversiones han afectado a la región en el ámbito social, económico y ambiental. Adicionalmente, los cambios en el uso de suelo son abordados desde un enfoque sustentable contrastando el resultado con lo que conlleva el concepto de *Empresa Socialmente Responsables* (ESR). Para esta investigación se realizaron entrevistas en conjunto con análisis de datos secundarios con el fin de proveer una respuesta a la pregunta de investigación. Dentro del mismo esquema, esta investigación recopila diversas opiniones, perspectivas y experiencias de varios inversionistas, instituciones gubernamentales, expertos en el tema y *organizaciones no gubernamentales* (ONGs) con el fin de proveer una vista general del panorama del desarrollo que experimenta la región.

En resumen, los resultados de esta investigación arrojan que la mayor parte de las inversiones se concentran en la ganadería, y por consiguiente el resto de estas se extiende en menor medida en petróleo, gas, experimentos con soya, y en la especulación en cuanto al precio de las tierras. Las razones que tienen los inversionistas para enfocarse en la región del Chaco diferencian entre desarrollos locales y globales. En retrospectiva, la introducción de un nuevo tipo de césped en los años 90 hizo posible la extensión de la ganadería. Adicionalmente, para un inversionista en Paraguay los impuestos son bajos y las leyes son fáciles de cumplir. Sumando a lo anterior, el precio de las tierras en el Chaco es relativamente bajo. Paralelamente, el desarrollo global en la demanda de productos cárnicos, soya y combustibles fósiles ha incentivado tanto la inversión nacional como la inversión extranjera proveniente de Uruguay y Brazil.

Como resultado de la llegada de nuevos inversionistas, la región del chaco se ha convertido en un creciente e importante sector para la economía nacional. Así mismo, en esta investigación hace denotar la emergente presencia de actividades de

comercialización y la intensificación del desarrollo de infraestructura. Por otra parte, la evaluación desde una perspectiva social arroja que la llegada de nuevos inversionistas ha afectado mayormente a la población indígena de la región. Sin embargo, evaluando desde un distinto ángulo, mientras la etnia '*Menonita*' experimenta un incremento en la competencia, esta se ve a su vez beneficiada con las nuevas oportunidades de trabajo que conllevan las nuevas inversiones.

Destacablemente, la llegada de nuevas inversiones a la región ha traído consigo una notable mejoría en el acceso a los servicios de salud pública y en la especialización de la fuerza laboral. Sin embargo, esta investigación descubre diversos casos que han resultado en el desplazamiento de varias comunidades indígenas debido a la falta de títulos de propiedad. Por consiguiente, la población indígena experimenta un notable detrimento en sus medios de subsistencia; lo cual a su vez representa para estas un importante agravio y disminución de su libertad, del acceso a sus recursos, de su libre autodeterminación, y finalmente de los límites geográficos de sus tierras.

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1. Introduction

Background

The growing demands for food, fuels and other commodities have led to a global rush for land. An ever-increasing world population and a rising level of consumption by the growing world middle class feed this growing demand. In addition, the shrinking resource base has made investing in and obtaining land more interesting for countries that want to secure their access to resources. The changing conditions of the global market have led investors to seek for large agricultural lands, which is a crucial mean of production in agriculture. The liberalisation of trade on an international level made this quest for investing and speculating in land a possibility and reality (Anseeuw, Cotula & Taylor, 2012). In the current global economy in which connections between countries are intensified, developing countries are used as exporters of natural resources and agricultural products for the growing demands of emerging economies and developed countries. Lands in Africa, Asia and Latin America are rapidly turned into agricultural lands (Garcia-Lopez & Arizpe, 2010). While reliable numbers surrounding the total amount of investments in land are scarce, the amount of land owned by foreign companies and foreign governments in Africa, Asia and Latin America, has rapidly been growing since 2008 (Cotula, 2012). The afore mentioned global dynamics have resulted in capital intensive and large-scale industrialized agriculture based on export in these developing countries (Garcia-Lopez & Arizpe, 2010).

The global rush for land is associated with the expansion of agricultural frontiers. Since the demands for food and fuel are growing, the often unused frontier areas experience a land-use change from areas covered by forest into areas used for agricultural production. Areas around the borders that have been neglected and left alone by both governments and the private sector are now included in development policies in order to exploit their natural resources. Governments want to use these long neglected frontier areas and include them into its national economy. Agricultural expansion in frontier areas therefore has to be seen as an investment decision. Native habitats are converted into agricultural lands to meet the growing demands of the world population (Angelsen, 1999). The Brazilian Amazon already experienced the

consequences of the need to involve the Amazon into the national economy in the 1960s. As a result of the encouragement by the government to have access to new lands, there has been an emergence of agricultural expansion in frontier areas in the Brazilian Amazon. More and more areas in the Amazon rain forest are made accessible through the establishment of roads. Large areas of high value rain forest are turned into an agricultural frontier. These developments led to the inclusion of the Brazilian Amazon into the national economy (Carvalho, Nepstad, McGrath, del Carmen Vera Diaz, Santilli & Barros, 2002). Other countries in the world are also expanding their agriculture in frontier areas. In the last two decades the Paraguayan Chaco, which will be the focus of this study, is being converted in agricultural land and included in the national economy.

The rush for land and the expansion of the agricultural frontier have not gone without any consequences for the concerned areas. Both developments have effects on the local economy, society and environmental. The land-use changes in frontier areas have resulted in different living conditions for the population. Not only do the inhabitants have to use the land differently, they are also confronted with newcomers moving into their living sphere. In addition, the rush for land and land-use change is often linked to displacement of the local people (Susanti & Burgers, 2013). Economically the land-use changes are beneficial, because the returns of the land are higher. Environmentally, agricultural expansion in frontier areas is often related to deforestation, as has been seen in the Brazilian Amazon (Carvalho, Nepstad, McGrath, del Carmen Vera Diaz, Santilli & Barros, 2002).

This tendency of growing (foreign) investments in agricultural lands and land-use changes in frontier areas is also apparent in Paraguay. In the past decades there has been a dynamic in which Paraguayan lands are being integrated into the expanding agricultural frontiers of Brazil and Argentina. These land investment are a result of the strategic agribusiness expansion (Galeano, 2012). Domestic and foreign investors are making large investments, which are linked to displacement and commercial pressure on lands. The investments mainly focus on the production of soy, wheat, fast-growing corn varieties and pasture for livestock (Borras, Franco, Gomez, Kay & Spoor, 2012).

In the beginning these investments were mainly apparent in the eastern part of Paraguay, also known as the Oriental. In this area the Atlantic forest frontier was turned into agricultural land for soy and cotton. Production incentives and changing economic conditions were a driving force behind these land cover changes. The production of cotton and especially soy brought about much more profit than leaving the lands unchanged (Richards, 2011). The expansion of soy is related to the changes in the global food-energy regime and led to a rush for land. The growing global demand for soy led to the expansion of commercial farms in this crop in different countries, hence also in the eastern part of Paraguay (Borras et al., 2012). Almost 80 per cent of the agricultural land in the Oriental is used for soy production (Guereña & Riquilme, 2013). In the last two decades the soy production has been rising rapidly: between 1997 and 2013 the soy production rose from 2.8 to 9.2 million tons, which makes Paraguay the world's fastest growing soy producer (Abramson, 2009). Foreign investors and medium- and large-scale landowners mainly control this growing soy production and export (Itraigo, 2012).

In the Western part of Paraguay, known as the Chaco or the Occidental, soy cultivation is not yet possible. The main economic activity of this area has been focusing on cattle production. While investments in the Chaco are less controlled by foreign investors and relatively low compared to the eastern part of Paraguay, a significant proportion of land deals in recent years in Paraguay were for cattle farming in the Chaco. The Paraguayan Chaco is part of a larger region called the Gran Chaco, which also covers parts of Bolivia, Argentina and a small part of Brazil. The Gran Chaco, seen as the last large land reserve of South America, has become an interesting investment area since the growing global demand for food, fuels and other commodities. Before the growing investments, the Paraguayan Chaco was a frontier of forest with a small population and little interference and interest from the outside world. However, the global rush for land is changing the Paraguayan Chaco into an agricultural frontier dominated by foreigners who purchase large areas of land. Foreign investments raised from 6 per cent in 1991 to 34 per cent in 2008 in *Alto Paraguay*, a department of the Paraguayan Chaco. These investors mainly invest in large-scale farms. Between 2006 and 2010 the number of investors in *Alto Paraguay* who bought more than a 1,000 hectares grew to 900,000. Brazilians, and to a lesser extent Uruguayans mainly control the foreign investment in this department (Galeano,

2012). The Uruguayans, for example, have bought more than 1 million hectare in the Paraguayan Chaco (Antunez, 2013).

Until now, the interest in the Chaco has been relatively low, especially compare to the Oriental where the number of (foreign) investments has been significantly higher. This is partly a result of the unfavourable climate of the Chaco to cultivate crops and the relative low interest in the Chaco from both the government and the Paraguayan citizens. Not only do few people live in the Chaco, the government hardly interferes or invests in the Chaco. Until a year ago, there were no municipalities in the Chaco. The Paraguayan Chaco functioned as a frontier between the economic viable eastern part of Paraguay and Bolivia. In a world regulated by global economic demands, the Paraguayan Chaco has been abandoned for a long time. However, the last untouched land reserve of South-America, driven by the global rush for land, is turning into an agricultural frontier.

Research objective and structure

To contribute to the literature about global land rush and agricultural frontiers, this research aims to assess if and how these global dynamics have affected the Paraguayan Chaco. Firstly, this research examines drivers of investment currently taking place in the Chaco. It addresses how the global rush for land has affected new investors to move into the Chaco. The focus is on the characteristics of these investors: why do they invest in the Chaco; in what do they invest; where do they invest; where do they come from. These characteristics will be positioned in the debate concerning the rush for land. In addition, developments on a lower scale are included in the research. There are also local dynamics that contribute to the growing interest of investors to come to the Chaco and to the expansion of agriculture in the Chaco. Guereña & Riquilme (2013) observed, for example, that investors from nearby places move into the Chaco because land is cheap. They state that current investments in the Chaco are mainly domestic instead of foreign. Owners of large cattle ranches in the Oriental are selling their lands to purchase less expensive land in the Chaco.

Secondly, the economic, environmental and social effects as a result of the global rush for land and land-use changes with regards to the Paraguayan Chaco are assessed in

this research. The effects of the Chaco turning into an agricultural frontier are discussed and the implications for local populations are addressed.

In the following chapter the theoretical framework will be explained. The theory is two-sided: first, it will address theories explaining investors and their motives; secondly, it will address theories explaining effects of the rush for land and large-scale investments. This division is implemented throughout this study. The research question, methodological approach and analysis are all two-sided. In Chapter 3 the research question and methodological approach are introduced. Chapter 4 and 5 provide, respectively, relevant contextual information concerning Paraguay and the institutional framework. Chapter 6 to 9 will provide results to answer the research question. Lastly, chapter 10 will represent the conclusion and will include a discussion, recommendations and future prospective.

2. Theory

As mentioned in the *Introduction* the theoretical framework will be divided into two parts. At first motives for investment will be addressed using the concept of translocal development. In the second part, the effects of these investments will be addressed using the livelihood approach and the concept of Corporate Social Responsibility (CSR).

Motives for investment

Translocal development

To explain the motives of investors from different countries to move into the Chaco, the concepts of translocal development, development corridors and development chains will be used. These concepts challenge the notion that development is a local appearance. Development studies often focus on the consequences of development for local features and see localities as separate and delineated entities. However, local development is determined by other localities, sometimes directly, sometimes indirectly. Local development is linked to what is happening in other places and is therefore translocal (Zoomers & van Westen, 2011). In the light of the global rush for land, these growing dependencies of different localities are especially apparent. The growing demand for biofuels in western localities, have led investors to seek for agricultural lands to cultivate soy in localities in the eastern part of Paraguay. But also: the growing demand for meat in localities with a growing middle class, have led investors to expand their meat producing business to other localities. This illustrates how growing demands in localities reach to other far-away localities. The Gran Chaco and in particular the Paraguayan Chaco is one of these localities that is affected by the growing demands. The current developments in the Chaco, therefore, have to be viewed from the perspective in which global dynamics that are a sum of developments in other, sometimes close by and sometimes far-away, localities.

For this reason the concept of development corridors is used with respect to the phenomena in the Chaco. Because people and places are linked, a process of solidification appears, which creates path dependency. Therefore, the outcome of development cannot only be seen in a local context, it goes beyond that. Development will create a chain of effects, which is called the development chain (Zoomers & van

Westen, 2011). The development chain could describe the motives of investors and explain the underlying reasons of investors to come to the Chaco. This is approached from different sides. The concept of translocal development will not only explain why developments in the Chaco make the Chaco a favourable locality to invest in, but will also explain why there is interest from investors from a certain locality. Regarding the latter, political, social or economical developments in another locality can result in movements from investors to another locality. As the concept explains, the different developments create a chain of effects, which resulted in the current situation.

Social, economical and environmental impacts

The livelihood approach and land acquisition

The global rush for land has had several social impacts in different localities. Land acquisition has been associated with both negative and positive effects. It is argued that local population can profit from new employment opportunities, new markets and improvements in infrastructure. However, land acquisition could also lead to loss of land and displacement of people. People lose part of their capital due to land acquisition. Often they are not capable to recover from or cope with this shock. Moreover, due to land-use changes local communities see their traditional land changing, which results in loss of connectedness to their traditional territories and to their cultural heritage (Zoomers, 2010).

The global rush for land and the land-use changes have had several impacts on the livelihood of local populations, often small farmers or indigenous communities. To investigate the social implication of new investments for the people who have been living in the Chaco, the livelihood approach is used. The livelihood approach is a framework that helps to understand and analyse the livelihoods of poor people and to identify more effective development policies and interventions. Robert Chambers and Gordon Conway (1992) developed the sustainable livelihood framework. They state that a livelihood entails:

“The capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood

opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels in the long and short term.”

The framework distinguishes five categories that entail different kinds of capital that people may or may not have to pursue their livelihood: human capital, social capital, natural capital, physical capital and financial capital. Besides these five categories, the aspect of vulnerability has to be taken into account. This aspect focuses on the sometimes inability of poor people to control many of the factors responsible to their poverty. Vulnerability can be caused by trends such as changes in economy, natural resources and policies. These processes will affect people’s livelihood capital and their livelihood strategies, which are activities and choices people have to achieve their livelihood goals. The growing economic investments in the Chaco will be one of these trends. This will affect the vulnerability of poor people.

With regards to the Chaco the effects of new investments on the local population will be most prominent for the indigenous communities who have been living there for centuries. To assess the social implications of these new investments in the Chaco, the five categories of capital will be used. This research investigates to what extent the changes caused by new investment lead to a different amount of capital and how this change in capital affects the livelihood of indigenous people.

Corporate social responsibility

The framework of CSR will provide insight in how new investors and investment will affect the Chaco socially, economically and environmentally. The values concerning CSR are derived from the *new economic order*. Effects of globalisation, like the rapid increase of communication, the decrease of trade barriers and the increase of knowledge transfers caused the transition to this new order. The *new economic order* led to the desire for a new understanding of social responsibility of business on an international level (Arthaud-Day, 2005). CSR became a new standard for multinational corporations. It is because of the growing importance of the CSR-values that these will be taking into account in this research to explain economical and environmental impacts of new investments. Holme and Watts (2000) state that CSR entails the following:

“Corporate social responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large”

CSR-values can be implemented into different areas in a business. In total there are four areas where CSR-values can be implemented: market place, workplace, community and environment (Crane et al., 2008). This research focuses on the latter three. CSR-values through the Code of Conduct (CoC) for transnational land transitions have been apparent in the literature about the rush for land. The World Bank and the International Food Policy Research are promoters of this conduct. In the CoC good governance and self-regulation are spearheads. According to the principles of the CoC corporations should implement good business practices to enable these spearheads and to ensure that negative economic, social and environmental effects of land acquisition are limited. Investments in land have to be a win-win situation for both businesses as local people (Borras & Franco, 2010).

CSR-values are gaining support in large influential corporations, who are setting the standards for other companies. With a growing number and influence of international corporations, CSR-values gain terrain all over the world. An influential corporation as Nestle argues that it is important for a business to create value for society. They implemented sourcing guidelines and a supplier code in order to achieve more sustainability within the company (Katoomba Meeting XIX, 2014). The initiatives of Nestle will have far reaching consequences, since Nestle is a global business, present all over the world. The guidelines that are set in the headquarters of Nestle have to be implemented by local farmers who are far away from these headquarters. The implementation of CSR-values set by influential international corporations will also trickle down to the local level in the Chaco.

According to CSR-principles, businesses have a responsibility towards the public. While CSR-values are used in dozens of empirical studies, there are some controversies concerning the framework. This controversy mainly stems from the different perception of the definitions and conceptions of CSR by different people. When Carrol (1991) introduced his pyramid of corporate social responsibility, he put profitability (economic responsibility) as the main interest of businesses. This was

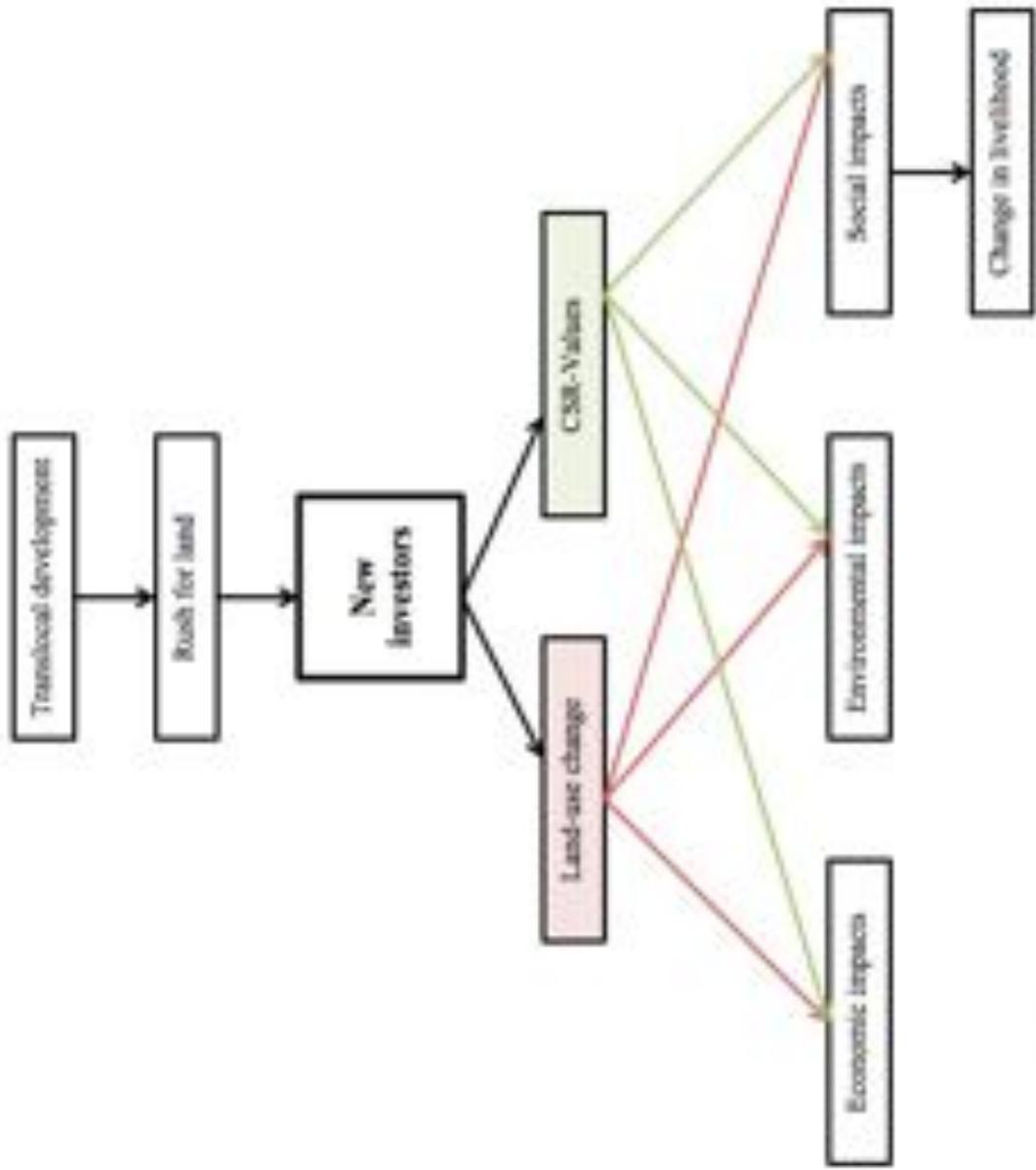
followed by legal and ethical responsibility. The last responsibility of a business is its philanthropic responsibility. Carrol believes that a business would only strive to be a good corporate citizen if all the other responsibilities are already fulfilled. While this assumption is plausible, Visser (2008) stated that these considerations would most likely vary in developing countries. CSR is a western concept, and countries such as Paraguay will have other opinions and convictions, which will not always be similar to western convictions. According to Arthaud-Day (2005) these different considerations make it difficult to create and implement a universally accepted code of responsibility.

Because CSR values are perceived differently, it is difficult to hold on to one definition of the concept. This notion will also hold for new investors in the Chaco. Their perceptions of CSR will differ, which makes it difficult to assess the degree of presence of CSR-values in businesses in the Chaco. While most of the current studies that address CSR focus on the implementation of CSR-values by businesses, this study will take a different approach. The focus of this research is on the outcome of the implementation of CSR-values. The social, economic and environmental situation in the Chaco after the new investment reveal if CSR-values were apparent in the establishment of new businesses in the Chaco. The social, economical and environmental impacts of new investors give an indication of the importance and scope of CSR-values in the Chaco.

Conceptual model

Below one can see the conceptual model, which gives an overview of the theories and concepts used in this research.

Figure 1. Conceptual model



The conceptual model, seen in figure 1, illustrates the different theories and concepts used to explain the dynamics concerning new investors in the Chaco. New investors are motivated to invest through translocal development. The growing demand for food and fuel in other localities has led to rush for land. This motivates new investors to move into the Chaco. They try to obtain land in frontier areas and converse these lands into agricultural land. These investors implement a certain amount of CSR-values. Land-use change and CSR-values all affect the Chaco economically, environmentally and socially to a certain degree. The social implications of new investments will result in a change in livelihood.

3. Research questions & Methodology

Research question

While the interest and investment have been relatively low, the (Gran) Chaco can be seen as the last large land reservoir in South-America that was not yet fully occupied by (foreign) companies and private investors. Large amounts of lands in the Chaco, a frontier area, were still untouched and interference of any kind was hardly present. Research about the growing interest in the Paraguayan Chaco is however scarce. In depth knowledge about growing investments and effects of these investments on the until so far undisturbed lands, is hardly available. Most of the research about Paraguay has been focusing on investments and effects of soy cultivation in the Oriental. To fill the knowledge gap this research aims to explain why investors come to the Chaco by using the theoretical concepts described in Chapter 2. Besides contributing to the literature about the global rush for land and agricultural frontier, knowledge about the dynamics in the (Paraguayan) Chaco could give insight into relevant policy issues. Conditions for foreign investments, laws concerning investments and implementation of laws contribute to the number of investments being made. Taking this into account, this research aims to contribute to the understanding of the institutional framework of Paraguay and provide information for policy makers to mitigate negative effects of new investments. This research will look at the origin of new investors and their main motives to come to the Chaco. Moreover, this research will focus on the economic activities investors are interested in, the specific places they invest in and the main characteristics of investors. Assessing the main characteristics of investors could contribute in understanding which type of companies mainly invest in land. Therefore, market orientation, size of business and business model are taken into account.

In addition, the arrival of new investors will have an impact on the Paraguayan Chaco as a region. The sale of large properties in the Chaco will, just as in other regions where land acquisition took place, affect the original population. They now have to share the Chaco with others. The growing investments will also affect the economics and the environment of the Chaco, which have been stable and similar before the arrival of new investors. Frontier expansion is often linked with inclusion of the

frontier in the national economy and land-use changes that result in deforestation. This research will therefore, in addition to the description of new investors, aim to assess the economic, social and environmental impacts of new investments. Mapping out these impacts will reveal negative and positive effects of investments. It provides information on the current situation of the Chaco and what can be changed or improved in and for the future.

The research question of this research will therefore be:

What are the drivers of investments currently taking place in the Paraguayan Chaco and what are the economical, social and environmental implications of new investments for the Paraguayan Chaco?

The sub-question for this research will be:

1. *In what do new investors invest in the Chaco and what are their main characteristics?*
2. *Where do new investors invest in the Chaco?*
3. *Why do investors move into the Chaco and where do these investors come from?*
4. *What are the economic, social and environmental effects of new investments being made in the Chaco?*

Important to note is that the government will play an important role. The rules and laws and the monitoring and implementation of these laws will define what investors are legally allowed to do and to what degree the economy, the people and the environment are affected. For this reason relevant rules and laws and governmental institution will be addressed when answering the research question. Addressing these rules and laws and governmental institutions can also give insights in the weaknesses of the current political framework, which is useful for policy makers.

Definitions & conceptualization

Before addressing the used methods, it is important to specify, define and conceptualize the research question and used theories, to make them measurable. At first it is important to define the word *new investors*. Galeano (2012) states that foreign investments in Paraguay increased in recent years, which is for a large part a

result of the land deals for cattle farming in the Chaco. Galeano shows, as stated in the *introduction*, that foreign purchase in one of the three departments in the Chaco has raised. Also other sources state that investments in the Chaco have been rising since the beginning of the 21th century (Vázquez, 2013; Inter-American Court of Human Rights, 2010). If you look at the growth of production quantities of meat, the main activity in the Chaco, there was an annual growth rate of 4.17 per cent from 2001 to 2006 and 2.04 per cent from 2006 to 2011 (FAOSTAT, 2014). Therefore, new investors will entail investors who have been investing in land in the Chaco after the year of 2000.

To avoid confusion, a distinction between an investor and a producer/rancher has to be made. An investor is the one who invests in the land, to start, for example, a cattle farm. However, often they do not live or are not active on the farm. The producer or rancher is the one who takes care of the farm, but does not own the farm. This research will focus on the investors and not on the producer/rancher.

Concerning business characteristics it is important to specify and operationalize *market orientation*, *size of the business* and *business model*. A business sector is export oriented when it exports more than 50 per cent of the production; a business sector is focused on the domestic market if more than 50 per cent of the production is used for the domestic market.

The business size can be classified into four different categories: micro entities, small companies, medium-sized enterprises and large-sized enterprises. It entails the size of purchased land, number of employees and number of locations. Since Paraguay is known for the unequal distribution of land, in which large landowners own most of the land, the main indicator for the size of the company will entail the size of purchased land. Besides that, number of employees and number of location will also be an indicator. The Rural Association of Paraguay (ARP), an influential agricultural organization that represents the largest and most important owners of cattle farms in Paraguay, measures the business size by looking at the number of cows on a ranch. On average a ranch has one cow per hectare. The size of purchased land can be derived from this notion, in which it entails the following (using the same four categories mentioned before): micro-entity, 1-20 hectare; small companies, 21-100 hectare; medium-sized companies, 101-1,000 hectare; large-sized companies, more

than 1,000 hectare. The European Commission (2003) defines the business size by looking at the number of employees. It uses the same four categories for the size of a business: micro entities, up to 10 employees; small companies, up to 50 employees; medium-sized enterprises, up to 250 employees; large-sized enterprises, more than 250 employees.

The conceptualization of the business model is derived from the work of Osterwalder and Pigneur (2010), the creators of the business model canvas. A business model describes how an organization creates, delivers and captures value. A business can make different decisions concerning different segments of the business. Osterwalder and Pigneur identify 9 segments in which businesses can choose different approaches. For this research the value proposition, key resources, key activities and key partners are relevant. The indicators of the business model canvas can be seen in table 2, in which also the market orientation and the size of the company are included.

Table 1. Operationalization business characteristics

Concept	Indicator	Specification
1. Market orientation	1. Domestic market	Less than 50% exported
	2. International market	More than 50% exported
2. Size of company	1. Size of purchased land	In hectare
	2. Number of employees	
	3. Number of locations	
3. Business model canvas	1. Value proposition	Products and services that create value for customers and solve their problem
	2. Key resources	Resources needed to deliver product
	3. Key activities	Most important assets required to make a business model work
	4. Key partners	Business partners to create product

The UN Global Compact (1999) has divided CSR into three different domains: labour, human rights and environment. In the domain of labour, elimination of forced labour, freedom of association and elimination of discrimination are included. Concerning human rights, a business should support and respect the protection of human rights and a business should prevent human right abuses. In the domain of

environment, the promotion of greater environmental responsibility, the encouragement of development of environmentally friendly technologies and the support for precautionary approaches to environmental challenges are taken into account. This research will use the same principles as the UN Global Compact. However, since people perceive CSR differently, companies and investors are first asked how they would define sustainability and, in particular, CSR-values. Moreover, as is stressed in the theoretical chapter, the focus is on the outcome of CSR-values, hence the labour conditions, if human rights are generally respected by businesses and to what extent environmentally friendly technologies and precautionary approaches are used.

To assess the change in livelihood, poor people were asked to what degree things have changed after new investors arrived. This was done on the base of the five different kinds of capital of the livelihood approach mentioned in the theoretical chapter. An overview of the operationalization of the change in livelihood can be seen in table 2. The livelihood approach is only used for poor people, in this context the indigenous people. The Mennonite population, another community present in the Chaco, was not addressed through this approach, since they are not considered poor. The Mennonite population was asked to what extent new investment affected them on a social, economical and environmental level.

Table 2. Operationalization change in livelihood

Capital	Indicator	Specification
Physical	Secure shelter	
	Access to primary needs	
	Access to transport	
Financial	Income	From work
Social	Freedom	
	Self-determination	
Natural	Amount of land	In hectare
Human	Education level	
	Health	
	Ability to work	

Methods

Two different methods will be used to be able to answer the two-sided research question. To answer the first part of the research question, it is important to identify new investors. The impossibility to identify all new investors in the Chaco must be stressed. Given the size of the surface of the Chaco and given the timeframe of this research, it was impossible to identify all new investors and give a representative statistical overview. Therefore, this research only gives a general overview of the motives and characteristics of new investors, and will not include statistical information about investors. Identifying new investors started by consulting literature and key persons. Subsequently, snowball sampling was used to identify more new investors.

Several semi-structured interviews were conducted with (employees of) investors in the Chaco. It is important to note that businesses are often closed, which made it difficult to talk to them. Especially those businesses that were publicly criticized were hard to encounter. In total 10 investors were interviewed. These 10 investors are not representative for all new investors in the Chaco. Moreover, the low number of interviews with investors made it impossible to generalise. Therefore, with the exception of some important information, specific information about their businesses will not be included in this research. Also because some of the businesses stressed that they wanted to stay anonymous. Besides investors, experts and key figures, such as people from (governmental) organisations, were approached in order to get more information and a better overview of the identity, motives and characteristics of new investors.

The second part of the research entails the economic, social and environmental impacts. To describe the economical and environmental impacts of new investors, literature is consulted for specific numbers and other statistical information. In addition, semi-structured interviews with key figures and experts were conducted to also give, besides numbers, explanatory and additional information.

To address the impacts for people who have been living in the Chaco, semi-structured interviews with people from the Mennonite colonies and people from NGOs, who represent the indigenous people, were conducted. In addition, a case study with one of the indigenous communities, the Cuyabia community, is incorporated in the analysis.

The case study illustrates the effects of new investments for the indigenous people. It shows in what ways and to what extent their livelihood has changed. The case study is also intended as an example to what extent human rights of indigenous people are respected. For this case study, semi-structured interviews with the lawyer who represents the community and the community leader were conducted. In addition, an examination of the lands of this community and their village has been carried out.

Annex 1 and 2 provide specific information about, respectively, the questions asked during the interviews and who has been interviewed.

Limitation data

One of the main limitations of the data is the number of new investors spoken to. This made it impossible to provide new statistical information. In addition, it made it harder to generalise and to identify where new investors specifically settled.

Another limitation of the data is that this research mostly relies on information from interviews. The interviewees all have their personal opinions and interest and will therefore never be completely objective. The given data by the interviewees is therefore, to a degree, subjective. As an outsider it is hard to filter this. To stay objective and to enhance the reliability of the data, the interviewees are categorized. This should be taken into account when reading the chapters with results.

- *NGOs who do not work together with businesses* (ICCO; Base-IS; P.C.I.; Tierra Viva; Iniciativa Amatacodie): These NGOs do not work together with businesses for ideological reasons or fundamental differences. They do not (or hardly) take the economic incentives of investors into account and mainly focus on the environment and the rights and culture heritage of minority groups (such as indigenous people);
- *NGOs who work together with businesses* (Guyra Paraguay; WWF; Solidaridad): These NGOs do work together with businesses and take economic incentives into account. They focus on trying to achieve sustainability (mainly concerning the environment) in cooperation with businesses;
- *Businesses focused on sustainability* (DAP; Erurales S.A.; Paraguayan company): These businesses aim to be more sustainable (concerning both the

environment and the society) in their business practices. They sometimes work together with NGOs;

- *Businesses* (Chortitzer; Fernheim; VLW S.A.; ARP; Belgium investor; Dutch investor; French company): These businesses mainly focus on economic incentives and are hardly associated with sustainability projects outside their own businesses;
- *Government* (INFONA; SEAM; INDI): The interviewees of these governmental institutions are part of the government of Cartes, who has a liberal/right economic rule.
- *Ex-government* (INDERT; SENAWE; Vice-Ministry Energy and Mining): The interviewees who belonged to these institutions were in service of the government of Lugo, who had a social/left economic rule.

4. Context

Paraguay is a Latin-American land-locked country surrounded by the emerging economies Brazil and Argentina and Bolivia. Paraguay can be divided into two parts, the Eastern part, the Oriental, and the Western part, the Chaco. The Chaco exists out of three departments: *Boquerón*, *Presidente Hayes* and *Alto Paraguay*. The river Rio Paraguay divides the Oriental and the Chaco. The river is a rupture between



Map 1. Paraguay per department



Map 2. The Gran Chaco

two different ecosystems (Glatzle & Stosiek, 2001; Reynolds, 2006). The Chaco makes up 60.7 per cent of the surface of Paraguay (Vázquez, 2013), with an area of 246,926 square kilometres (Kleinpenning, 1984). The Chaco is part of the Gran Chaco, a region that contains parts of Paraguay, Argentina, Bolivia and a small piece of Brazil.

Environment

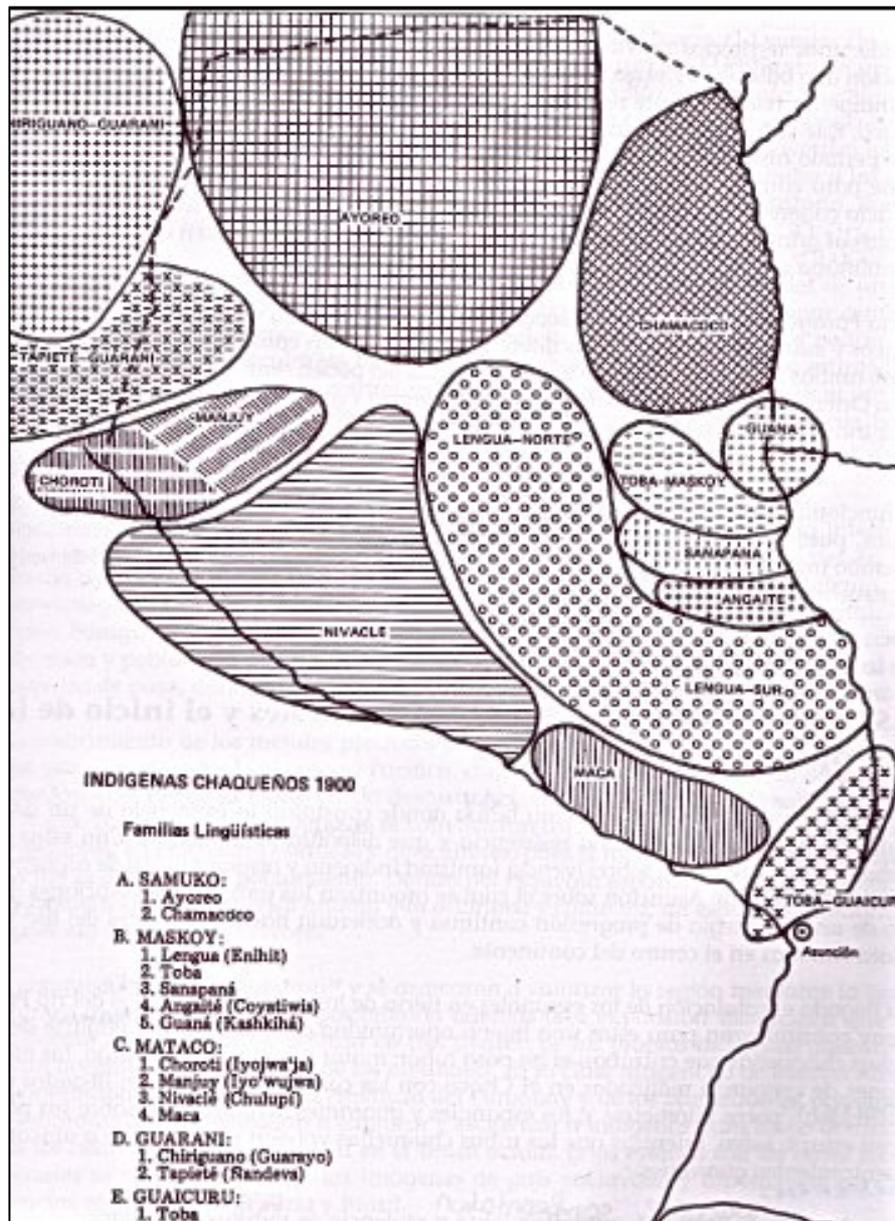
The two different regions in Paraguay have two completely different ecosystems. The Chaco is characterized by a dry climate with a low average rainfall that ranges between 400 to 1,400 milometers a year and a high average temperature that ranges between 23 to 25 degrees. Concerning the Oriental this respectively ranges between 1,400 to 1,800 milometers a year and 21 to 23 degrees (Vázquez, 2013). In addition, the rainfall in the Chaco is more concentrated than in the Oriental, where the rainfall is more equally distributed. About 80 per cent of the rain in the Chaco falls in the summer. As a consequence, the growing season in the Chaco only last from October

to March, while in the Oriental lands are often cultivated two times a year (Glatzle & Stosiek, 2001; Reynolds, 2006).

The soil in the Chaco originates from the sediments from the Andes. As a consequence, the Chaco is relatively plain, ranging from 80 to 380 meters. The climate of the Chaco can be distinguished into three zones: humid Chaco (Bajo Chaco), dry Chaco (Chaco Boreal) and Central Chaco. Thorny and dry bushes characterize the forest in the Chaco, which is a result of the high temperatures and the dry periods that often appear. There are two types of soil, a sandy and a clay soil. Both soils have no limitations in soil fertility, but are limited by the scarce availability of water. In addition, some of the soils in the Chaco are salty, which makes it less suitable for agriculture (Glatzle & Stosiek, 2001; Reynolds, 2006).

The Chaco up until the 1920s

The first territorial organization in the Chaco was characterized by the 12 indigenous groups who made up the population of the Chaco. The indigenous communities in the Chaco lived, unlike the indigenous communities in the Oriental, as nomads. They survived through hunting, gathering, fishing and some seasonal agriculture. The scarce resources that the Chaco offered made it impossible to settle at one place for a longer period of time. In contrast with the indigenous communities in the Oriental, who were able to cultivate some crops and keep livestock. For a long period of time the indigenous communities could practice their traditional lifestyles without any outside interference (Vázquez, 2013). Below one can see the traditional territories of the indigenous communities around 1900.



Map 3. Territory of Indigenous Communities in 1900.
 Source: Sthal, 1986, In: Vázquez, 2013

In 1524 the Spaniards crossed the *Rio Paraguay* into the Chaco by making an alliance with the *Guaranies* from the Oriental. The Spaniards wanted to explore if metals could be conveyed in the Andes region through the Chaco. However, the hostile attitude of the indigenous communities, the absence of water and the extreme heat and drought made these expeditions problematic. Soon different routes were found and the interest in the Chaco region disappeared again. Because of the favourable conditions for agriculture and cattle rising and because of the easy cooperation with the indigenous communities in the Oriental, the Chaco was, with the exceptions of a French colony and some Jesuit missions, left alone till the end of the Triple Alliance

War in 1870. This war left Paraguay depopulated, ruined and indebted. To provide the government with sufficient income, the state, which at that moment owned the property rights in the Chaco, sold their lands. As a consequence large amounts of land in the Chaco came into the hands of foreign capitalists, who were often land speculators. One of the investors was the Argentinian Carlos Casado, who bought more than 5,500,000 hectares in the Chaco in 1886 and till today still owns parts of these lands (Kleinpenning, 1984).

The selling of the land was the end of the undisturbed lives of the indigenous communities. The new landowners started extensive cattle farming, mainly in the lower Chaco that has a more favourable climate and was near the markets in the Oriental. In addition, the forest was exploited for timber production. Because of the lack of sufficient infrastructure to transport the timber, these activities mainly took place alongside the river. The traditional way of life of the indigenous communities came to an end, as hunting, gathering and fishing became prohibited on private properties. At the end of the 1920s all state land was sold and Argentinian companies owned half of the Chaco. However, while these developments mark the beginning of the Chaco as an economic region, the living conditions in the Chaco were still hard. The Oriental stayed a more attractive place to live in and for many investor the main focus and interest (Kleinpenning, 1984).

The arrival of the Mennonite colonies

In the early 1920s Canadian and East European Mennonite colonies settled themselves in the Chaco. Different Mennonite colonies from different places in the world were looking for a new place to settle themselves after they had to leave their current country of residence because these countries did not support their religious convictions (Vázquez, 2013). The government, who wanted to populate the Chaco because of the growing conflict over ownership with Bolivia, supported this. They gave the Mennonites rights and privileges only applicable to the Mennonites, in order to meet them in their wishes to be able to live their own religious, cultural and economic life. They were, for example, dismissed from military service and had freedom of religion (Kleinpenning, 2009).

The first Mennonite colony, called Menno, settled themselves in 1927 in the centre of the Chaco. The second Mennonite colony, called Fernheim, and the third Mennonite colony, called Neuland, settled themselves near the first colony in respectively 1930 and 1947. They sustained themselves by keeping various kinds of livestock and by growing a variety of crops for their own use. After harsh first years in which the Mennonites struggled to survive, their agriculture became more successful with the help of the Mennonite Central Committee and the mechanization in the 1950s. The Mennonites organized themselves in cooperatives, which functioned as a mediator in land transfers, as the colonies bank, took care of the processing of agricultural products and offered financial help. In addition to the cooperatives, infrastructure was greatly improved. With the establishment of the Trans-Chaco Highway that connected Asuncion to Bolivia in 1964, the transportation of poultry, meat, milk and dairy production became easier. The prosperity of the Mennonites grew and the establishment of the Mennonite colonies can be seen as the first successful foreign colonisation in the Chaco (Kleinpenning, 2009).

The relationship between the indigenous communities and the Mennonites has been relatively good. The arrival of the Mennonites brought job opportunities, which stirred migration of indigenous people into the Mennonite colonies. However, tension increased with the mechanisation of the agriculture and the reducing demand for employees. In 1955 a programme of settlement was started by the Mennonites to assist in social and economic development for indigenous communities (Kleinpenning, 2009). This incentive still exists today under the *Asociación de Servicios de Cooperación Indígena-Mennonite* (ASCIM).

Despite the success of the Mennonite colonies, no other foreign colonies settled themselves in the Chaco. The Chaco remained a thinly populated area after the arrival of the Mennonites. This was a result of the still unfavourable living conditions of the Chaco and the lack of governmental interference that did not have the capital or the manpower to organise large-scale agriculture in the Chaco. Despite different initiatives to fully include the Chaco into the national economy and while cattle farming gained in importance in the area of the Mennonites, the interests of others in the Chaco, especially if you compare it to the Oriental, remained relatively low (Kleinpenning, 1984; 2009).

The economic situation of Paraguay today

As has been the case in the past, the economy of Paraguay today is focused on agriculture. Most inhabitants earn their living in the agricultural sector, which is owned by private farmers and landowners. In 2012, soy and cattle, and to a lesser extent wheat and maize were the most produced goods (FAOSTAT, 2012). The crops like soy, wheat and corn are mainly cultivated in the Oriental, because of more favourable climate conditions, while in the Chaco livestock breeding and cattle farming are the main activities.

The past few years, the economy of Paraguay has been growing. Besides the growth in the production of agricultural products in the last decades, the export of agricultural products also has been growing (FAOSTAT, 2014; FAOSTAT, 2014). Between 2007 and 2012 the annual growth rate of the agricultural production per capita was 2.36 per cent (FAOSTAT, 2014). In addition, the Human Development Index (HDI) and the Gross Domestic Product (GDP) of Paraguay is growing. The GDP of Paraguay has been growing every year, with an exception of 2012, when there was extreme drought and an outbreak of the foot and mouth disease. However, this decline was corrected in 2013 with a GDP growth of 13.6 per cent. In 2014 it is expected that the economic growth will return to the average of the last decades of 4.8 per cent (World Bank, 2014). Also the HDI shows a trend of development: between 1980 and 2012 the HDI of Paraguay grew with 22 per cent from 0.549 to 0.669, and Paraguay now takes the 111th position from the 187 countries. The life expectancy, expected years of schooling and Gross National Income (GNI) have been growing as well. However, if you compare the HDI of Paraguay with the average of 0.741 of Latin American and Caribbean countries, Paraguay scores low (UNDP, 2013).

While there is economic growth in Paraguay, the distribution of this economic growth has not been equal. Paraguay has a history of unequal land distribution. In 2008, 77 per cent of the total agricultural land was owned by 1 per cent of the landowners. On the other hand, 40 per cent of the landowners own 5 per cent of the total agricultural land (Garcia-Lopez & Arizpe, 2013). A rising Gini-coefficient confirms this view. If one considers that perfect equality would score a 0 and perfect inequality would score a 100, Paraguay belongs to the countries with the highest inequality in the world with a score of 52.4 in 2010. Moreover, the Gini-coefficient grew if you compare it to the

number of 51.0 in 2009 (World Bank, 2014). As a consequence of the unequal distribution, there is a lot of poverty in Paraguay. In 2011 49.6 per cent of the population lived in poverty from which 28 per cent lived in extreme poverty. The poverty is mainly apparent in the rural areas. It needs to be noticed, that, although the poverty is still high, it has been declining. In 2003 the national poverty was 64.1 per cent (CEPALSTAT, 2014).

Population development in the Chaco

Because of the unfavourable climate, it is hard to live in the Chaco. The Chaco region is a sparsely populated area. While the Chaco contains 60.7 per cent of the total surface of the land, it only holds 2.7 per cent of the total population of Paraguay. The people who live in the Chaco are not scattered, but centred on a few points, namely, near Asuncion, in the centre near the Mennonite colonies and near *Rio Paraguay* (Vázquez, 2013). However, as table 1 shows, in the last 30 years the number of inhabitants in the Chaco has been growing. In 1972 the Chaco only held 69,415 inhabitants and this grew to 181,096 inhabitants in 2012. In 40 years the population grew with more than 160 per cent. Though, if one compares the growth in population numbers of the Chaco to the growth in population numbers of Paraguay in general, the population of the Chaco relatively did not grow.

Table 3. Evolution of the population of the Chaco compared to Paraguay in general

	1972	1982	1992	2002	2012
Total Chaco	69,415	56,832	105,633	142,501	181,096
Total Paraguay	2,357,955	3,029,830	4,152,588	5,163,198	6,672,631
% of total Paraguay	2.9	1.9	2.5	2.8	2.7

Source: DGEEC, 2012

The population numbers of both the indigenous communities as the Mennonite colonies have also been growing over the years. In 2002 the number of indigenous people living in the Chaco reached 42,151, a growth of 52 per cent if one compares it to the number of 27,615 in 1992 (DGEEC, 2002). The Mennonite colonies existed out of 14,946 people in 2006. Their population has tripled since the 1940s (Mennonite Cooperatives, 2008).

5. Institutional framework

A turbulent political history

The political situation in Paraguay has been unstable for the last 200 years. This began with the Triple Alliance war that lasted from 1864 to 1870, a revolution in 1912, a Civil War in 1922 and 1923, several coup d'états and the Chaco War that started in 1928. The latter concerned a war about the borders of the Chaco, where both Bolivia and Paraguay claimed certain areas as their own. This resulted in a war that lasted till 1935, in which both parties were economically and physically exhausted and in which Paraguay gained control over almost the whole Chaco. While the Chaco War was the last war that Paraguay experienced, it was not the end of the turbulent political dynamics. The rivalry between different political parties led to more coup d'états and frequent changes in leadership. This ended in 1954, when General Alfredo Stroessner became president. Stroessner, a member of the *Colorado* party, ruled for 35 years. Under his rule Paraguay experienced economic successes, but at the same time encountered undemocratic rules such as no freedom of press and the harsh violation of human rights with the imprisonment and torturing of political opponents (Kleinpenning, 2009).

While Stroessner was forced out of power in 1989, the *Colorado* party remained the supplier of the Paraguayan presidents until 2008. In this year, Fernando Lugo came into power. Lugo, in contrast with the liberal agendas of the presidents of the *Colorado* party, had a more social agenda with, for example, the introduction of free public health care and free secondary education. However, Lugo was deposited in 2012 after a massacre in which 15 people, both police officers and indigenous people, died as a consequence of the intervention on a land that had been occupied by landless farmers (Guereña & Riquelme, 2013). In August 2013, Horacio Cartes, a powerful Paraguayan businessman and a member of the *Colorado* party, became the new Paraguayan president and is still into office today.

Tax system for investors

The conditions for (foreign) investment are favourable for investors in Paraguay. Between 1990 and 2010 the tax burden had the lowest increase in Latin America and Paraguay, therefore, has one of the lowest tax burdens in the region. There is also no

tax on exports (Itraigo, 2012). This is favourable for investors if one considers that Argentina has a tax on export of 40 per cent. Moreover, the state supports land reforms and investments, which enhances the favourable conditions for investors (Borras et al., 2012).

In addition, the taxes that have to be paid to the government by investors is extremely low and does hardly contribute to the revenues of the state. The existing taxes for investors consist out of agricultural income taxes, which are carried out under IMAGRO, and property taxes. The total revenues of the taxes from IMAGRO make up 0.1 per cent of all national collected taxes. The agricultural income tax is based on the value of the property. The maximum amount of agricultural incomes taxes that has to be paid by investors is 1.8 per cent of the estate's value. A small amount if one considers the low land prices in the Chaco. The property taxes make up 0.4 per cent of the GDP annually. The tax is equal to 1 per cent of the assessed value of the land (Glauser, 2009).

Relevant institutions

Paraguay is a constitutional republic and has divided their governmental powers into three different powers: executive, legislative and juridical. This is derived from the latest constitution made in 1992 after the authoritarian regime (Library of Congress, 2005). Paraguay has 11 ministries, including the Ministry of Agriculture and Cattle Farming (in Spanish: MAG). Below the relevant national political institutions that (new) investors have to deal with will be addressed. The MAG covers all these addressed institutions.

INFONA & SEAM

The National Forestry Institute (in Spanish: INFONA) and the Environmental Secretariat (in Spanish: SEAM) focus on and monitor the management of the lands and forests of landowners. The INFONA handles the administration and promotion of the sustainable development of forest resources and the SEAM is an entity that coordinates and supervises the preservation and management of natural resources.

Every landowner needs a plan of used land of its property that has to be approved by the SEAM and INFONA before it can be developed into agricultural land. For the

Chaco this entails that a landowner has to show how they will manage the land, where they are planning to deforest and where they will keep the forest. In contrast to the Oriental, where the zero deforestation law is in force, it is allowed to deforest in the Chaco. However, there are some rules concerning deforestation:

- Every purchased land has to reserve a block of forest, which covers 25 per cent of the surface of the land;
- If there is high-value forest on purchased land, the block of forest needs to cover 50 per cent of the surface of the land;
- Between pasturelands and roads or rivers there has to be a barrier of forest of 100 meters, which serve as windbreaks in order to prevent desertification.

These rules and the implementation and monitoring of these rules by the INFONA and SEAM will influence the environmental impacts of new investors and will therefore be taken into account in this research.

INDERT

The National Institution of Rural Development and Land (in Spanish: INDERT) is the main institution that deals with the allocation of state land. It follows the rules of the *Estatuto Agrario*, which was introduced in 1940 to achieve more equal land distribution and improvements of economic and social conditions. The aim of this statute was to give as much land to Paraguayans as possible. At the time, one of the functions of this statute was to integrate the Chaco into the Paraguayan economy by giving favourable conditions for Paraguayans to obtain land relatively easily (Kleinpenning, 1984). Land speculation was tried to be avoided by not allowing the owners to sell the land in the first 10 years. In addition, the statute had to ensure that there would be less foreign investors by forbidding foreign investors to buy land within 100 kilometres from the border. This part of the statute was however negated in 1963. In 2005, law 2532/5, partly put this part of the statute in place again. At the moment this law is the only law that tries to reduce foreign investments. It states that it is forbidden for foreigners who are natives from a bordering country to buy property within 50 kilometres from the Paraguayan border (Glauser, 2009). The rest of the *Estatuto Agrario* is, with some alterations, still in force. Paraguayans can obtain a piece of state land of 4,000 hectares to practice agriculture. However, there are controversies concerning the *Estatuto Agrario* and foreign investment. It is also

associated with double land titling. Since both of these are present in and relevant for the Chaco, the INDERT is addressed in this research.

INDI

The National Institute for Indigenous (in Spanish: INDI) aims to protect and ensure the full compliance of indigenous rights. The rights of the indigenous people is captured in *Ley 904* (1981), which concerns the social and cultural preservation of the indigenous people; defence their traditions; improve their economic conditions; achieve effective participation in the process of national development; and give access to the legal process that guarantees the property to their lands. Concerning the latter, the law states that the rightful settlement of indigenous people will be according to the actual possession of indigenous people or to the traditional lands of indigenous people. The state will provide and ensure that indigenous people will have free and undivided land that will have sufficient surface to sustain their lifestyles. Every indigenous family should have 100 hectares of land. In addition, the law states that the Paraguayan state should ensure that untouched tribes are not forced to have contact. The INDI helps to achieve this.

In addition to the Paraguayan law, the Paraguayan state has to comply with international laws. The Declaration on the Rights of Indigenous Peoples (2007) states that there is an urgent need to respect the rights to the lands of indigenous people. They state that indigenous people have the right to the lands that they have traditionally owned. They mention that states have to consult and cooperate with indigenous communities if any project affects their lands and that they are obligated to give compensation to indigenous people if their land is affected. However, according to the sentences of the Inter-American Court of Human Rights, the Paraguayan state has been violating the rights of indigenous communities in the Chaco (Inter-American Court of Human Rights, 2005; 2006; 2010). In the case of Xákmok Kásek in 2010, the Paraguayan state recognized that there were violations of the law concerning the communities right to property, however they did not take measures to restore the land claim.

6. Investments and business characteristics

Cattle Farming

Growth in the sector of cattle farming

The main economic activity in the Chaco has always been cattle farming. New investors, too, also mainly invest in cattle farming. As a result, cattle production in Paraguay in general and specifically in the Chaco has been rising. The development of cattle farming in Paraguay in general illustrates that there has been a growing importance of cattle farming since the growing investments in the Chaco. Between 2002 and 2014 the number of cattle has been growing with 4.3 per cent on average annually. This mainly took place in the Chaco. When looking at the growth of the number of cattle in the 17 departments of Paraguay, the three departments that make up the Chaco scored first, second and fourth on largest growth of cattle in 2013. In 2014, cattle farms constitute a total surface of 20,892,324 hectare in the Chaco, of which 8,248,336 hectare is used as pasture land. These cattle farms own 5,691,848 head of cows (ARP, from Medina, personal communication, April 15 2014). In table 4 the growth of cattle between 2011 and 2014 for both the Oriental as the Chaco can be seen.

Table 4. Growth of cattle in Paraguay between 2011 and 2014

Region		2011	2012	2013	2014
Oriental	Number	7,793,350	8,054,685	7,964,001	8,435,060
	Growth in % compared to last year	-	3.4	-1.1	5.9
Chaco	Number	4,643,770	5,236,479	5,412,455	5,691,848
	Growth in % compared to last year	-	12.8	3.3	5.2
Total	Number	12,437,120	13,291,164	13,376,456	14,126,908
	Growth in % compared to last year	-	6.8	0.6	5.6

Source: ARP, from Medina, personal communication, April 15 2014

Table 4 illustrates the large growth of cattle in the Chaco in comparison to the Oriental and Paraguay in general. In both 2012 and 2013 the growth of cattle was substantially higher than in the Oriental. While the growth of cattle in 2014 was lower

than in the Oriental, there was still a growth of 5.2 per cent compared to last year. This table illustrates the growing importance of the Chaco as a region in the sector of cattle farming in Paraguay. The development and investments in the Chaco have had a large impact on the growth of cattle farming in Paraguay in the recent years.

Business practices of investors in cattle farming

Statistics retrieved from the ARP show that the cattle farming sector in Paraguay focuses on export. Between 2000 and 2013 the export of meat produced in Paraguay increased from 97,550 tons of carcasses a year to 307,172 tons of carcasses a year. Also the value of the meat export has grown between 2000 and 2013 from 148 million dollars a year to 1,335 million dollars a year. In 2013, 53 per cent of the produced meat in Paraguay was exported. Assuming that the Chaco does not differ from Paraguay as a whole, investors can therefore be considered as export oriented. The numbers concerning export also indicate that the meat sector in Paraguay is growing, which, as is mentioned before, is largely a results of the investments in the Chaco. In comparison to other South American countries the importance of Paraguay as a meat producing country for the global market has risen as well. Between 2003 and 2012 the amount of meat export of Brazil, Uruguay and Argentina has multiplied respectively, 3.6, 3.7 and 1.8 times, while the amount of export of meat produced in Paraguay has multiplied 17.2 times. Most of the meat that is considered to be of good quality is exported, while the meat that is considered to be of lesser quality is used for the domestic market.

Since the Chaco only produces the meat, the main customers of the meat produced in the Chaco exist out of foreign buyers. These buyers come from different markets that all have different requirements. At the moment most of the meat is exported to Russia and in a lesser extent to Brazil. The export to the Asian market is growing in importance, however, because Paraguay acknowledges Taiwan as a sovereign country, the large market of China is not available for export. Also the access to the European market is denied, because of the breakout of the foot and mouth disease in Paraguay in 2011 (Medina, personal communication, April 15 2014). The European market, in contrast with for example the Russian market that has no requirements, asks for high sanitary standards. Currently they are trying to gain access to the European market again, not only because of the business opportunities of the

European market, but also because the access to the European market gives access to other markets, a result of the high requirements of the European market. If meat is approved by the European standards, other buyers know that the meat is of high standard.

Looking at the number of owned hectares, most of the new investors in cattle farming invested in large-sized companies. A Belgium investor states that this is a result of the harsh climatic conditions (personal communication, February 25 2014). It is easier to survive in the Chaco when you have more land. Statistics concerning the sizes of cattle farms in Paraguay in general confirm these findings. The amount of producers that have more than 1,000 hectares of land has grown with 86 per cent between 2005 and 2013 (from 1,541 to 2,880 producers). On average the number of producers rose with 29 per cent during this timeframe. Large-sized companies, which cover 1.97 per cent of the total number of producers, own 54.6 per cent of the cattle in Paraguay in 2013. In contrast, micro-entities hold 5.1 per cent of the cattle and cover 58.22 per cent of the producers (ARP, from Medina, personal conversation, April 15 2014).

When looking at other indicators that determine the size of the business, a lot of businesses of new investors will not be classified as large-scale companies. Concerning the number of employees, most of the farms do not employ more than 20 people permanently. An average farm of 10,000 hectare does not need a lot of employees during the year, because relatively speaking, cattle farming is not labour intensive. Taking the terminology of the European commission into account (2003) new investors will be classified as small-scale companies. Looking at the number of locations, new investors will not be classified as large-scale companies either. There are a lot of individual investors who only own one farm. In addition, there are several companies (often classified by the determinant *Grupo*) who own more than one farm. However, often these companies do not own more than two or three farms. It is important to note that there is a growing tendency in which investors own several farms, because a lot of Paraguayan investors are looking to expand their businesses. While the number of employees and the number of location do not indicate that the Chaco exists out of large-scale companies, the number of hectares owned by investors does. Taking the context of the Chaco into account, this is considered to be the most important indicator as is stated in Chapter 3. Therefore, one could argue that most of

the new investors own large-scale companies, although they do not have a lot of employees or locations.

Investors in cattle farming in the Chaco can choose two business models: *Cria* and *Engorde*. The first focuses on the breeding of calves and the latter concentrate on the fattening of the cattle. The main costs investors encounter are the purchase of land and cattle, the development of pastures and research that helps to improve production. The investors, with the exception of the Mennonites, do not execute other activities in the value chain. Because the investors only perform one activity in the value chain, they need to reach out to other partners, such as slaughterhouses and milk processing factories, to process their products. In addition, to develop the land, they have to work together with construction workers and land clearing workers.

Oil and Gas Exploration and Prospections

Investments in oil exploration and prospection have been present in the Chaco since the end of the Chaco war. The first ones that moved into the Chaco to look for oil were an American and an English corporation (Ortega, 2014). After that other companies followed. In the seventies the companies started with oil explorations and recently investments in oil gained momentum again. In addition, the interest in gas increased. While there is growing interest, oil and gas exploitation in Paraguay has not yet been profitable. This has several reasons. Firstly, there is no proof yet that there is a large quantity of oil and gas under the surface of Paraguay. Secondly, the quality of the oil and gas in Paraguay is insufficient. The amount of oil and gas found is low and the quality of this oil and gas is too low to exploit (Ortega, personal communication, April 7 2014). Thirdly, there is a lack of facilities to extract oil and gas. To make oil and gas exploitation possible, a network of infrastructure needs to be established. This is a costly operation, especially if the available oil and gas does not bring a lot of revenues. A lot of the current investors who are not active in the oil and gas industry are therefore sceptical towards the oil and gas prospections. They do not believe it will be profitable in the near future.

As a result of the low profitability of oil and gas exploration, the investments only occur on a small-scale. At the moment, there have been 49 oil perforations in total in Paraguay. In the Chaco there are 9 oil and gas companies active. Until this day, there

is only one company who actual found gas. This is the Paraguayan company named *Primo Cano Martinez* who is situated in the Northwest of the Chaco. The government receives 10 to 14 per cent of the royalties of the oil and gas. This is relatively low if one keeps in mind that the revenues of the remaining percentage belong to the company in question (Canese, personal communication, April 11 2014).

Soy experiments

In comparison to the Oriental, soy cultivation is unimportant in the Chaco. At the moment investments in soy experiments are low, but because of the potential soy could have in the Chaco, it could attract investors to the Chaco. Monsanto is currently trying to develop dry resistant seeds to make soy cultivation possible in dry climates such as the Chaco. If these seeds are developed, it is likely that soy cultivation is possible on a large scale in the Chaco. In addition, some parts of the Chaco are suitable for soy. This applies for the places that contain black soils, which are more fertile soils. Soy is cultivated in places in the Argentinian Chaco where they have these soils. At the moment there are two places where experiments with soy take place in the Chaco.

The results of the harvest of this soy have been mixed, which makes a lot of people sceptical about the possibilities of soy cultivation in the Chaco. Until so far, soy cultivation on a large scale has not been possible in the Chaco, which is mainly a result of its unfavourable climate. The scarcity of water, salt in the water and the type of soils of the Chaco, make agriculture a risky business. With the high returns of cattle farming, a substantially less risky, less costly and more stable business than soy cultivation, make investments into soy cultivation less attractive. This is enhanced by the fact that, at the moment, a lot of land is necessary to produce soy. The yields in the Chaco are very low, especially in relation to the yields in the Oriental. In addition, logistics needed for the production of soy are not present in the Chaco. These need to be established first, before being able to start soy cultivation. Considering the risky nature of agriculture in the Chaco, investments in soy is a large investment without guarantees for profits.

Land speculation

Around 2003 and 2004, a lot of American and European investors came to the Chaco, buying large amounts of land without having a clear purpose for these lands. These land speculators only bought land to later sell it with large profits. For example, between 2000 and 2002 a group of Dutch investors bought 4 blocks of land in the Chaco with a total amount of 200,000 hectares. They started some projects to make profits, but failed in their attempts. However, this was not a loss for the investors, because they earned money by selling the land with large profit (Iniciativa Amatacodie, personal communication, March 5 2014). Another example of land speculation, which was surrounded by controversy, is the investment of a Korean Christian group, better known as the *Moon-sect*. This group came in the nineties of the last century to the Chaco for religious reasons and now owns around 600,000 hectare mostly in *Alto Paraguay*, which they bought partly from Carlos Casado (Glauser, 2009). Just as the Dutch investors, they did not have clear business purposes for the land. Another form of land speculation that occurs in the Chaco is land speculation in relation to nature reservation. Investors, sometimes in cooperation with NGOs, buy pieces of land in order to reserve the nature and prevent deforestation and biodiversity losses. Land speculation is losing interest from investors the last few years. The growing land prices make it less favourable for investors to speculate in land. Investments in land are larger and the outcome is not sure. It is less harmful to lose 50 dollar than to lose 600 dollar. Growing land prices has made land speculation more risky.

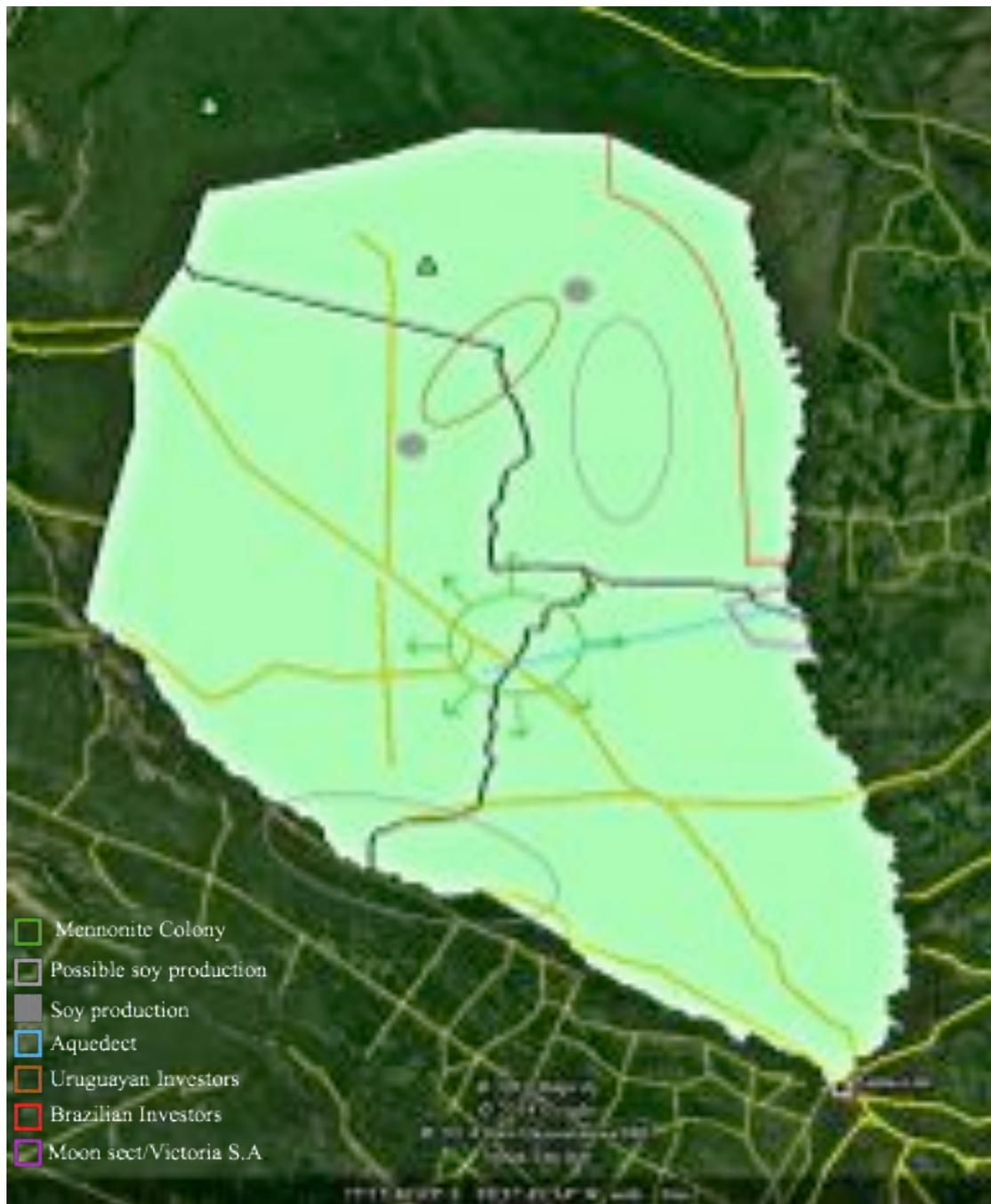
7. Overview of new investments in the Chaco

Most of the new investors that invest in cattle establish themselves in the Northern part of the Chaco. In the Southern part of the Chaco, under the *Ruta Transchaco*, most of the land is already being used for cattle farming for a longer period of time. The relative closeness of Asuncion, the capital of Paraguay, and the relatively favourable climate of this part of the Chaco, resulted in investments in an earlier stage. Also the available facilities in this part of the Chaco made investments in an earlier stage more interesting. In addition, the Mennonites already used the Central Chaco, which left the North of the Chaco, in the department of *Alto Paraguay* unoccupied. The Brazilian investors concentrated themselves near the Brazilian borders, close to *Rio Paraguay*. The Uruguayan investors also concentrated themselves in the North. The Paraguayan investors did not concentrate themselves in one area, but are scattered all over the Chaco.

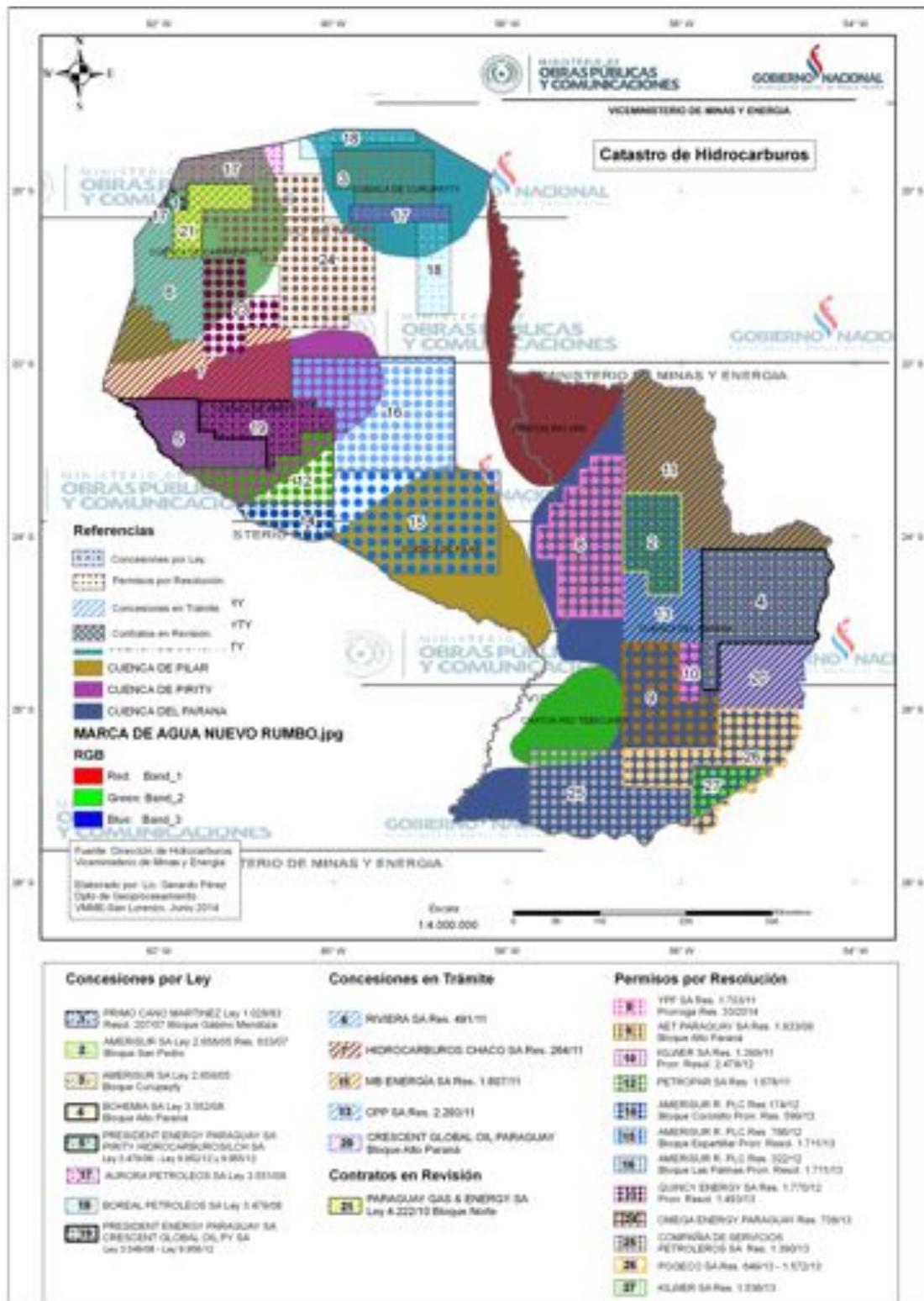
There have been some experiments with soy cultivation on a small scale in two places in the Chaco. The first is situated in the department of *Boquerón*, and is called Cresca S.A., a company owned by Carlos Casado S.A. and Cresud S.A. They have been cultivating soy on 3,000 hectare for 3 three years. They had one successful harvest so far. Someone of the Mennonite colony of Neuland owns the second one. This soy farm is active for 5 to 10 years and the harvest is used as nutrition for the cows owned by members of the relevant colony.

Below one can see an overview of the places where new investments, mentioned in the previous two chapters, took place. This first map, map 4, is constructed together with the interviewees. The reader must note that this map is not completely accurate, because it was impossible to pinpoint the exact places. However, it gives a good overview of the approximate places where the developments are happening. In the second map, map 5, one can see the present oil and gas companies active in Paraguay. The map makes a distinction between concessions by law, concessions in process, contract under revision and permission to be determined. The government is able to give oil and gas companies rights, based on the Paraguayan law, to explore if a certain area contains gas or oil. The government has this right, because the government owns everything that is in the soil. An oil or gas company that belong to this category does not need property rights of a piece of land to be legally allowed to perform oil

prospections and explorations. These companies are categorized under concession by law.



Map 4. Overview new investments in the Chaco



Map 5. Present oil and gas companies in Paraguay
 Source: Vice-ministerio de Minas y Energía

8. Motives and origin of new investors

Different reasons have triggered the interest of investors to invest in the Chaco. These investments are caused by developments on a local and global scale.

Paraguay and the Chaco as a favourable investment opportunity

Local conditions and developments in Paraguay, and more specifically the Chaco, have resulted in favourable investment opportunities for investors. The Paraguayan state makes the conditions for investments favourable. This is partly a result of the lack of laws that constrain foreign investors to settle themselves in Paraguay. Rules concerning deforestation, which are relatively easy for investors to comply with when one compares them with rules in other countries or even the Oriental, confirm this. Where in the Oriental it is not allowed to deforest, investors in the Chaco are allowed to cut down part of their forests for their business activities. As a result the production costs in the Chaco are lower than in other producing regions. It is also relatively easy for foreign companies to access Paraguay for gas and oil prospection and exploration. There are no obligations or laws concerning the environment or indigenous communities for companies who are established on the prospection and exploration sites. When oil and gas prospection will transition into exploitation, it is not clear what will happen to indigenous people or cattle farms established on the place where oil or gas exploitation will take place. The Paraguayan state also makes the conditions for investments favourable because of the low tax burden. Paraguay has one of the lowest tax burdens in the region.

Before the arrival of new investors, the Chaco as a region was not yet developed. This not only applies to sufficient infrastructure and other fundamental services like access to electricity, but also to the conditions of the land to perform cattle farming. Before the arrival of new investors, most of the land was not yet turned into pastureland for cattle farming. This was due to the harsh climate of the Chaco. It was hard to find a type of grass that could maintain in the Chaco and that contains enough nutritional values to feed a cow. After disappointments with other grass types, the Gatton Panic, another grass type, was introduced in the 1980s. While it took until the mid nineties for this grass to overcome the unfavourable climate of the Chaco and to be successfully implemented, the introduction of the Gatton Panic made it possible to

extend meat production in the Paraguayan Chaco to a larger scale. At first it took 4 to 5 years to be able to sell cows. The development of the new grass type lowered this to 2 years. Even though the Gatton Panic had and still has its limitation in the more dry or humid areas of the Chaco, the Gatton Panic has resulted in the extension of sown pastures in the Chaco. Without the implementation of this grass type, the interest of investors to start a cattle farm in the Chaco would be lower, because the returns of cattle farming would be substantially lower (Glatzle, personal communication, April 25 2014).

In addition, the Chaco is favourable for cattle farming because of the number of kilos produced per head of cow. The number of kilos is higher and the number of hectare needed per head of cow is lower, because of the high concentration of phosphor in the Chaco. This is good for the fattening of the cattle. It makes the Chaco a favourable region in Paraguay to invest in if one compares it to the Oriental. In the Chaco one can keep 1.45 cow on average per hectare, while in the Oriental one can only keep 0.95 cow on average per hectare. This means that less land is needed in the Chaco to raise cattle in comparison to the Oriental. This is also illustrated in the kilos meat produced per hectare, in the Chaco 200 to 220 kilo of meat per hectare is produced, while in the Oriental the production of meat is only 150 kilos. Also if other regions in South America are taken into account, the amount of meat produced in the Chaco is substantially higher. In Uruguay the production of meat is only 20 to 50 kilo of meat per hectare (ARP, from Medina, personal communication, April 15 2014).

Oil and gas prospections and exploration recently gained interest again after a study that was conducted in Paraguay by an American company in 2009. This study stated that there is potential for gas and oil in Paraguay and especially the Chaco. In countries surrounding Paraguay, such as Bolivia and Argentina, who have the same geology as the Chaco, both oil and gas have been found. In these countries they already started with exploitation. According to an employee of the vice-ministry of Energy and Mining, this makes it plausible that there is also oil and gas in Paraguay (personal communication, April 11 2014). For investors this was one of the reasons to invest in oil and gas prospections.

Global developments

While the reasons above make Paraguay and the Chaco a favourable place to invest in, it are the global developments that motivate investors to invest in agriculture, cattle farming and oil and gas. The growing meat demand on a global level stirred the growing interest in cattle farming. The value proposition of the investors is to meet the demand of the growing middle class in emerging economies, such as the ones in Asia. In the localities of the emerging economies the income of people rose because of economic development, which made it possible for them to buy meat. Between 1980 and 2005 the global per capita consumption of meat has risen from 30 kilo to 41.2 kilo (FAO, 2009). The growing demand for meat caused a price rise in meat, which makes it an interesting product to invest in. Between 2000 and 2013 the price index of meat has risen from 96.5 points to 184.1 points (FAO, 2014). In other places in the world the extension or intensification of cattle farming is impossible. Australia, for example, is at its limits concerning meat production and the meat production in North America is even declining. This leaves an opportunity for South-America, and in specific the Paraguayan Chaco, where there are favourable conditions for cattle farming (Medina, personal communication, April 15 2014).

The developments on a global level do not only affect cattle farming in the Chaco. The growing interest in soy and oil and gas in the Chaco are also a result of global developments. The global rise in oil prices and the need to find more fossil fuels has driven the interest of finding oil and gas in the Chaco. Before, gas was not an interesting product to invest in, but with the growing demand for gas, gas prospections and exploration became interesting for investors. In addition new techniques have made it easier to exploit oil and gas. The behaviour of businesses has been affected by these global developments. As mentioned in the introduction, the growing demand for food and fuel have let to a global rush for land. The current interest of investors in the Chaco exemplifies this rush for land. In the past 15 years large areas are sold to investors who turn the lands into pasturelands and, in a lesser extent, into agricultural lands to meet the growing demand. The Paraguayan Chaco, seen as part of the last land reserve of South America, has a lot of room for these different business opportunities. The Chaco was an unused frontier area, which is now turned into an agricultural frontier.

South-American investors moving into the Chaco

The investments in cattle farming have mainly come from Paraguayan farmers and from foreign investors that mainly come from Brazil and Uruguay. These investors are all driven to move or extend their businesses to the Chaco as a result of developments on a national scale. The Brazilians started to invest in the Chaco after the arrival of the new president Lula, who has a left political orientation, in 2002. A lot of Brazilian investors left Brazil to then settle themselves in the favourable investment climate of Paraguay. They continued their business in the Chaco. The Brazilians bought 1,5 million hectare and according to the ARP, 57 per cent of the investors is from Brazilian heritage. Around 2005 the Uruguayans came to the Chaco to invest in cattle farming. They left Uruguay, because a lot of Argentinian soy farmers bought their lands as a result of the increase in Argentinian taxes. The Uruguayan tax system was more favourable for the Argentinian investors. As a result, the Uruguayan investors sold their farms for high prices to the Argentinian soy farmers, and afterwards bought much cheaper land in the Chaco. According to Fabricio Vazquez, a Paraguayan researcher, a hectare in Uruguay cost 5,000 dollars around 2005, while the land in the Chaco cost 40 to 200 dollars per hectare at that time. Also Paraguayan farmers who had originally been established in the Oriental moved to the Chaco because they could sell their lands for high prices to soy farmers in the Oriental and buy cheaper lands in the Chaco.

In addition to the foreign new investors, Paraguayans from both the Chaco and the Oriental, buy property in the Chaco to extend their businesses. There is a tendency, in which Paraguayans who already own a cattle farm buy more property, because the economic profits of cattle farming in the Chaco is promising. The three Mennonite cooperatives belong to this group of investors. They still try to expand in order to obtain land for their offspring. The newly bought land is used for the children of the Mennonites to start their own businesses. While these investors, both from the Mennonite colonies and other investors from the Chaco, technically are not new investors, they do contribute to the land-use changes in the Chaco from forestland into pasturelands.

Besides the Paraguayan, Brazilian and Uruguayan investments, investments in cattle farming are made from all over the world. The (foreign) investors often only invest in

the farms, but do not live at the farms. This also applies to the European investors. They stay in Europe and hire ranchers who stay at the farms permanently. These ranchers have to report to the investors who own the farms. The investments in cattle farming made by Europeans are sometimes linked to land speculation. A Dutch investor states that the investors do not have to be there, because even if the farms do not have high returns, the investors will still profit from the farm (personal communication, May 16 2014). Investors can sell their land with large profits as a result of the rising land prices.

Concerning oil and gas exploration, investors come from different parts of the world. From the 9 companies that are present in the Chaco, 3 companies are from Paraguay, of which the government owns one of the companies (*Petropar*). Concerning foreign companies, 2 of the oil and gas companies are based in the United Kingdom, 2 in the United States and 1 is based in Colombia. For the other company it is unknown where it comes from (Ortega, 2014).

Development chain

The investments in the Chaco are a result of national developments in other localities, as is shown above. The current developments in the Chaco can be seen as translocal development and has created a development chain. This starts with local developments in other localities:

- The rising level of consumption of meat by the growing world middle class in other localities have led investors to look for places to increase cattle production. This resulted in investments in the Chaco, where the expansion of meat production was still possible;
- The rising demand for fossil fuel in other localities, have led investors to look for places to exploit oil and gas. Since it is likely that there is oil and gas in the Chaco, investors qualified the Chaco as a good region to look for oil and gas;
- The rising demand for soy in other localities, have led investors to look for places to cultivate soy. Because the production of soy is being developed in other localities like the Oriental and Uruguay, cattle farming loses relevancy in these localities. This development has led to the movement of cattle farmers from these localities to the Chaco;

- Changes in laws and policies in other localities are direct and indirect drivers for the movement to the Chaco. In both Brazil and Argentina political changes led investors to move their businesses to other countries with more favourable conditions;

9. Economic, social and environmental effect of new investments

Economic effects

Macro-scale effects: growing economy

The arrival of new investors in the Chaco has led to a growing economy for Paraguay in general and the Chaco in particular. As is stated before, the GDP of Paraguay has been growing the last few years. This is mainly a result of the growing importance and investments of cattle farming in the Chaco. The Chaco as a region is gaining importance in the cattle farm sector in Paraguay, one of the largest economic sectors in Paraguay. The contribution of the Chaco to the national economy is therefore growing. The Chaco is no longer only a frontier between the Oriental and Bolivia, but has transformed into an agricultural frontier that contributes to the national economy. Both oil and gas prospections and soy experiments have relatively contributed minimally to the growing economy. Because both activities are just starting up, they have not yet been profitable.

Micro-scale effects: commercialization, infrastructure and job opportunities

There are also micro scale effects for the economy of the Chaco as a region. As a consequence and side effect of the growing investments in the Chaco, small-scale investments are made into the development of the Chaco. One of these investments holds the commercialization of the Chaco. The Chaco as a region is opening up for commerce. Banks and shops are being established in places such as *Filadelfia* and *Loma Plata*. This is partly a result of the arrival of new investors and partly a result of the modernization within the Mennonite colonies. Parts of the Mennonite colonies want to modernize and break out of isolation.

A second small-scale investment stream entails investments in the infrastructure and logistics. Agricultural frontier expansion is often linked with the establishment and enhancement of infrastructure, in order to enhance the accessibility of the area. Before, infrastructure and facilities such as electricity were controlled and maintained by the cooperatives of the Mennonites. With the arrival of new investor, abandoned roads are being improved and new roads are developed. Investors themselves invest in

these, often sandy, roads, to be able to reach their businesses. The government is supporting these initiatives. These roads are not only to connect parts in the Chaco, but also to connect Chile to Brazil in order to move soy and cattle more easily between the two countries. At the moment, there is a large-scale infrastructure project happening. Since 2012 they are constructing an Aqueduct. It is yet unknown when it will be finished. The Aqueduct will be 202 kilometres and will connect *Puerto Casado* to *Neuland*. The investments in this aqueduct were made in order to help farms to overcome their problems concerning water scarcities (Ortega, 2014). Moreover, in more and more places electricity and (phone and internet) networks are accessible. As a result of these developments, doing business for investors is facilitated.

The growing amount of investment has also resulted in growing opportunities for jobs. While new established farms do not need a lot of employees, the growing number of farms ensures that job opportunities in the Chaco enhance. Moreover, the growing number of shops and banks ask for more employees. As a consequence of the growing job opportunities, the population in the Chaco is growing. People from all over the country have been moving to the Chaco since the arrival of new investors to look for work. As a result the 'urban centre' of the Chaco has been growing, also with regard to commerce. While the Chaco still only holds 2.7 per cent of the population of Paraguay, the population has been growing with 27 per cent between 2002 and 2012 (DGEEC, 2012).

This has triggered the interest of the national government of Paraguay. Since a year, the Chaco has a municipality. Moreover, the Chaco is now connected to the national power network. Before, the interference of the state was minimal, but this is changing since the growing interest and the growing population. Most of the properties within the 'urban centre' of the Chaco are owned by the cooperatives of the Mennonites. This has resulted in segregation. Because other groups, such as the Paraguayan people, are not members of these cooperatives they cannot buy properties owned by the cooperatives. They have set up their own separate neighbourhood, in which interaction with other groups is limited. The same applies to the indigenous communities, who are also situated in a separate neighbourhood with limited interaction with other groups.

The small-scale effects just mentioned can be seen as a trickle down-effect of the development in other places. The development chain does not stop with the arrival of new investors in the Chaco. The small-scale effects are put in motion by the development chain: because the demand for food and fuels in other localities is rising; investors start developing the Chaco into agricultural lands or oil and gas prospection sites; which creates working opportunities for the local people in the Chaco; which subsequently attracts Paraguayans from other localities to come to the Chaco; as a consequence the population is growing; which triggers the government to interfere in the Chaco.

Double land titling

A growing problem in the Chaco as a region, since the arrival of new investors, is the growing number of double land titles. This problem originates from the *Triple Alliance War*, when the government sold most of the state properties in the Chaco to private investors. Subsequently, the investors sold their properties again to land speculators and such. When they tried to divide the land, they used old maps. The state, and in particular the INDERT, lost overview on who owned which properties, because properties were sold repeatedly. As a consequence, some lands have double (or more) titles. In addition, double land titles appear, because if an investor is using the land for over 20 years, it can go to a judge to get property rights of the concerning land. In other cases investors act like they have a larger amount than they actual paid for. They extend their fences outside the boundaries of their property. Once these fences are established it is hard to prove the land is not from the concerning investor. As a member of the Lugo government stated, while Paraguay is only 40 million hectare, it holds 52.5 million hectare of land titles (personal communication, March 12 2014). These double land titles are mostly in the Chaco and do not include the lands in which the indigenous people live. While the indigenous communities often do not own property rights to these lands, the law states that they are entitled to have (parts of) their traditional lands. The numbers concerning double land titles would be even higher, if these property titles would be included.

A lot of new investors are confronted with the problem of double land titles, especially in *Alto Paraguay* and near the Bolivian border. Double land titles have existed for a longer period of time, but have not been as problematic before as is now

the case. Because the Chaco is an area with low population density, it was relatively easy to sell land titles to more persons, mostly land speculators. Few investors noticed this, because they did not buy the property for development purposes, but as an investment to later sell with profit. They often did not visit their properties, also because the properties were hard to reach, as a result of the poor infrastructure. The investors of now mostly buy properties for cattle farming instead of land speculation. These investors do want to use of the land. When new investors want to develop a farm, they run into other owners who also have a title to the property.

Besides the problems concerning double land titles, a problem has been arising concerning foreign investors. According to the *Estatuto Agrario*, investors who are originated from bordering countries are not allowed to own properties near the border. The INDERT should monitor if lands near the borders are not sold to foreigners, but is not succeeding in this effort. The signs that were placed in order to mark the places 50 kilometres from the border are often destroyed. Moreover, Brazilians own most of the properties near the Brazilian border. This shows that the law is not implemented or enforced by the Paraguayan state.

Social effects

In this part the impacts of new investments for the two groups that have been living in the Chaco before the arrival of the new group of investors are discussed: the Mennonites and the indigenous people. Concerning the latter a case study will be included.

Mennonites

Until so far, the Mennonites lived in the Chaco being able to perform their religious convictions without much interference. This was for them a decisive reason to move to the Chaco in the first place. However, the arrival of new investors led to a growing number of and a more diverse group of people in the Chaco. This has forced the different Mennonite colonies to come out of their isolation and open up. New investors ensure that the Mennonites have to mingle with others. Because the Mennonites have a lot of experience in and know-how of cattle farming in the Chaco, they are often asked to help new investors to start up their farms. They offer their services and equipment for the clearing of land, for establishing permanent pastures

and for construction work. As a consequence, the Mennonites have a lot more work. This is economically beneficial for them. In addition, they economically benefit from new investors because the investors sell their unprocessed meat and dairy products to them. While dairy products are not the main focus of new investors, the investors do sell their dairy to the Mennonites for processing. One of the Mennonites cooperatives in the Chaco owns a dairy factory. They own and produce for one of the largest dairy brands in Paraguay. Lastly, the investors buy goods in the shops and supermarkets that are often owned by members of the Mennonite colonies. The cooperation with new investors is, in this regard, seen as something positive. However, within the Mennonite colonies there is diversity, in which more conservative and traditional Mennonites prefer to keep on living in isolation to keep their traditions, while more progressive and modern Mennonites value this less and focus on economic development.

The downside of the arrival of new investors is that the Mennonites have to compete over land. Before the arrival of new investors, the Mennonites were one of the few investors in the Chaco. As a result the demand for land was low and the prices of land remained steady and low. The arrival of new investors changed this. As mentioned before, the growing interest led to rapid rising land prices. Moreover, land in the Chaco is getting scarcer because more land is occupied and used for cattle farming. The Mennonites, who are still trying to expand their businesses in order to take care of their offspring, have to pay higher prices for land. This makes it harder for the Mennonites to buy land. Especially, since most investors have more money to spend on land than the Mennonites have. New investors also have an advantage when it comes to employees. Because they have more money, they are able to offer better salaries to professionals. This makes it harder for the Mennonites to hire qualified professionals.

As a result, the Mennonites have to change their business strategy. The communication manager of one of the cooperatives stated that they only buy new land if they already have a specific project for the land. According to the communication manager, it is hard to find a fair price for land. Before the cooperative also bought land without having a clear purpose for the land. As the new investments, the business model of the cooperatives changed. They are investing in other projects. Currently,

they own most of the banks in the ‘urban centre’ of the Chaco. In addition, the focus has been on the industrial part of meat. The Mennonites own a milk-processing factory and a slaughterhouse. They are trying to maintain themselves by broadening their economic activities and by establishing themselves in different parts of the value chain of meat. Another initiative that they want to undertake in the near future is a toll system for the, at the moment, public roads. Most of these roads were built and are maintained by the Mennonites. A lot of new investors use these roads without contributing to maintain these roads (personal communication, March 28 2014).

Indigenous community

The arrival of new investors also had several impacts on the lives and livelihoods of the indigenous communities. The main impact of the growing number of investments and private properties for the indigenous people is displacement. As was mentioned before the global rush for land has resulted in displacement of local communities. This is also applicable for the situation in the Chaco.

Indigenous communities have seen their living space shrinking in a short period of time because of the growing number of farms. The indigenous group, the *Ayoreos*, who in the beginning of the 20th century covered a large part of the Northern Chaco, are now living in 19 appointed different settlements, which only holds a small part of their original territory (Iniciativa Amatacodie, personal communication, March 5 2014). Indigenous people, such as the *Ayoreos*, often have to move to other, mostly smaller places when farms establish themselves on the territories they have been living on for centuries. Because the indigenous people do not legally own the property rights, they are obliged to leave. However, according to both national as international human right laws the indigenous people have the right to claim the land they have been living on for centuries. The Paraguayan law states that indigenous communities have the right to property if they have the actual possession or if the property belongs to their traditional lands. Currently indigenous people are displaced because of the arrival of new investors. The outcome of the arrival of new investors led to a less secure shelter for indigenous people. This is not in accordance with the CSR-values of the UN Global Compact (1999), who states that Human Rights should be respected, or the CoC, where businesses should provide a win-win situation for both investors as local people. Investors need to respect laws and abuse of laws is disapproved.

However, the outcome of the arrival of new investors show that this is not accomplished.

Moreover, the government should ensure that their national law concerning indigenous people is implemented. However, the Paraguayan government has not been able to achieve this, as has been shown before in the sentences of the Inter-American Court of Human Rights (2005; 2006; 2010) in which the government did not take measures to restore the land claims of three indigenous communities in the Chaco. According to these sentences the government should have implemented the law. Also other examples show that the Paraguayan government does not ensure that the rights of indigenous people are respected. The Korean investors of the Moon-sect, for example, were associated with the displacement of indigenous people around 2005. Besides not being able to ensure that investors respect the rights of the indigenous people, the government itself also fails to respect the rights of indigenous people. Recently, the SEAM gave a license to a Brazilian investor to start developing forests into pasturelands for cattle farming on the land where the last untouched indigenous community in Paraguay, the *Ayoreo Totobiegosode*, are living. In 2008 this license was rejected in order to protect the forest and the rights of this indigenous community. However, a judge gave order to renew this license (ABC Color, 2014). The president of the SEAM, Christina Morales, stressed that it is the responsibility of the INDI, not the SEAM, to protect the indigenous people. Moreover, she mentioned that she is not aware of laws concerning untouched indigenous people (personal communication, April 10 2014).

Also in the case study of the Cuyabía community, which will be addressed later on, the government did not respect the rights of indigenous communities. NGOs stress that this is a result of the power relations in Paraguay. The government represents the owners of cattle farms. Some members of the government own a cattle farm themselves. According to the NGOs large investors that own farms in the Chaco, have an important role in the ARP and have a seat in the parliament. This has resulted in conflict of interests. NGOs state that the government has interest in protecting the interests of the owners of cattle farms instead of respecting the rights of indigenous communities. The government argues that they do not want to take land from investors who legally own it and invest money in Paraguay and give it back to

indigenous people who are hardly economically contributing to Paraguay. The government mainly focuses on the economic aspects and on the formal land titles. According to the NGOs, there is a lack of knowledge about international human right laws within the government. In addition, the current laws are not sufficient to reach out to indigenous people. Relevant governmental institutions like SEAM, INDERT and INFONA do not take the indigenous people into account. While there are several organizations that defend the rights of indigenous people, indigenous people often are unaware of these rights. Instead, they are displaced to places where they have less space.

Another impact of the arrival of new investors has expressed itself in the decline of access to resources. Indigenous communities are not longer allowed to hunt or gather on the farms of investors. Most of the lands in the Chaco have always been private properties. However, before the arrival of new investors these properties mostly belonged to land speculators. These land speculators did not have a purpose with the land and left the land unused. The indigenous communities were able to look for resources on the land without interference. They could move as hunters and gatherers to another place if resources ran out to later return to this place when resources, such as honey, were available again. Now, with the establishment of farms, the lands are being used. Fences and warning signs indicate that the indigenous communities are no longer welcome to enter the lands and look for resources. Also nature reserves contribute to this. While indigenous people are often allowed to enter those properties, they have to obey to rules that for example prohibit hunting. As a result the living space of the indigenous people is shrinking and the access to resources is declining. They have to sustain themselves with fewer resources and have to rely on other sources. The indigenous people have become dependent on aid. In addition, the self-determination and freedom of indigenous people has declined after the investments. The communities are no longer free to move on the lands were they have been living for centuries without any interference. Some of the places with large cultural and traditional values are no longer accessible to them, because they are on private properties. NGOs supporting the indigenous groups therefore push for right to self-determination, in which the indigenous communities can maintain their current lifestyles and maintain isolated. According to them, the state should provide the integrity of their territory and the right to legal ownership.

Originally the culture of the different indigenous groups was based on mobility, autonomy and trust in nature. The expression of their culture has become more difficult with the arrival of new investors. Not only because they are not allowed on their properties, but also because of the deforestation in order to establish pasturelands. Losing forest is losing life support for indigenous communities. Therefore, most of the indigenous communities cannot live solely from the forests anymore. There are still indigenous groups that have not yet been in contact with the outside world. However, with the shrinking of their living spaces and the reduction in isolation, their 'untouched' status is in danger. In addition, these 'untouched' indigenous people do not have an immune system for a lot of diseases in the outside world. Getting in contact with this world could be fatal for these people.

On a positive note, the abilities to work rise with the job opportunities on the farms. Since it is harder to live from the forests, the jobs on the farms help the indigenous communities to provide them in their basic needs. While there are few permanent jobs on the farms, temporary jobs for building fences and such give indigenous people the opportunity to earn a living and have income. However, NGOs note that often the labour conditions on these farms are far from ideal. While there is a norm for minimal wages, the employees sometimes have to wait for their salary for a long period or they get paid in goods instead of money. Moreover, women often get underpaid, because they are seen as part of the contract of their husbands. The NGOs stress that, according to the international labour convention, employees should receive equipment, food and education on their jobs.

In addition, the developments of facilities in the Chaco had positive effects for the indigenous people. The development of infrastructure and access to electricity and networks has driven the indigenous people out of their isolation. While this could result in loss of cultural values, indigenous people embrace the use of some modern facilities such as cell phones. Moreover, the access to health care has improved, because of the improvements of the infrastructure. While these developments have led to improvement of the situation of indigenous people, NGOs stay critical. They state that most of the established services are focused on the benefits for businesses. Indigenous people can often not use them, because of lack of resources. Moreover, some projects, such as the Aqueduct, lead to further displacement of indigenous

people, because they have to move in order to complete the project. Again, since the living spaces of indigenous people are shrinking, the use of more modern techniques is necessary to provide them in their basic needs.

Case study: Cuyabia Community

The situation of the Cuyabia community illustrates the just mentioned effects of new investors. The Cuyabia community belongs to the indigenous group the *Ayoreos*. At the moment the Cuyabia community is situated north of *Mariscal Estigarriba*. Their current territory is 25,000 hectare and is inhabited by 54 people that make up 19 families.

The living situation of the Cuyabia community illustrates how new investors have affected the lives and livelihoods of indigenous communities. The arrival of new investors made it impossible to conduct their traditional lifestyles. On their property they live in primitive, wooden cabins. Water is only accessible in a nearby dwell and through collection of rain and access to electricity is established by using a generator. In addition, the Cuyabia community uses modern devices and goods such as cell phones. They have access to a mobile network via a nearby ranch. This illustrates that the arrival of new investors has introduced modern 21th century goods into the traditional lives of indigenous people.

The men of the community generate income by working at nearby ranches. The ranches do not always pay them on time or pay the right amount to their employees.

Below: Figure 2. Cuyabia Community

Right: Figure 3. Bag made by women from the community with material from the forest

Source: Tierra Viva



The women in the community contribute by making bags in which the material is collected from the forest. In addition they cultivate some crops such as pumpkin. Before the deforestation they also cultivated watermelon. Hunting and gathering is still part of their livelihood assets, but has been losing significance. The leader of the community states that this is firstly a result of deforestation. Secondly, this is a result of the impossibility for the indigenous community to move around freely on private properties (personal communication, March 29 2014). Most of the food that is currently consumed by the community is bought in the supermarket with the money they collected through labour and the sales of handicrafts.

The Cuyabia community was involved in a case of displacement. In 2012 a Brazilian business bought the land of the Cuyabia community from the governmental institution INDI. The INDI bought the land that the Cuyabia community currently inhabits in 1996 and gave it to the Cuyabia community in 2010. The minister of the INDI at the time, Ruben Quesnel, illegally sold the property of the Cuyabia community for a price far below the market value. The INDI, originally established to protect the rights of the indigenous people, violated both national and international rights and laws of the indigenous people with this action. The minister took advantage of his position, while it should have protected the indigenous people. As a result, the livelihood assets of the Cuyabia community came in danger. They were no longer secure of a shelter and there was a possibility that the Cuyabia community would be displaced.

Tierra Viva, a NGO that defends the rights of indigenous people in the Chaco, gave legal support to the Cuyabia community in order to regain their territory. They informed the Cuyabia community of their rights and took the preferences of the community into account. At the moment the land of the Cuyabia community is back with the INDI. Moreover, the ex-minister of the INDI is currently serving his sentence in prison. The current minister of the INDI acknowledges that the INDI has made mistakes regarding the situation of the Cuyabia community. He thinks that it is a result of corruption and the impunity of corruption. The INDI is now trying to be more transparent to overcome this problem (personal communication, April 14 2014).

At the moment Tierra Viva is trying to determine and analyse which lands exactly belong to the Cuyabia community. Two neighbouring ranches, from a Brazilian and a Paraguayan investor, are occupying some of the lands of the Cuyabia community.

They have not yet developed the land into pasturelands, but did put up fences to mark their presence. The two investors got the titles to this land in 2010, when the Cuyabía community was not yet living on the land, but the land already belonged to INDI. At the moment the indigenous community uses 12,000 to 14,000 hectare of the 25,000 hectare. The leader of the community states that it is important for a sustainable livelihood of the community to inhabit the whole area (personal communication, March 29 2014). Tierra Viva is examining if they can, in corporation with the INDI, undertake steps to return the remaining part of the land to the Cuyabía community. This will be a long process, whereby insufficient manpower and money sources will enhance the difficulty. In addition Tierra Viva is, in corporation with another NGO, analysing by conducting an anthropological research which ancestral lands are important for the indigenous community. According to the leader of the community, there is a tomb on one of the nearby ranches that has cultural value for the community.

According to the investors: indigenous people

Investors are aware that the current developments in the Chaco affect indigenous communities. However, it is argued that it is not realistic to return the land that the indigenous people traditionally owned. The economic development that is linked with the arrival of new investors is the main reason for this. It is economically not viable to leave such large amounts of land unused. For investors it is often unclear what indigenous people do with the land and how they use it in a profitable way. Indigenous communities should get properties to sustain themselves, but in smaller amounts. Moreover, investors argue that cattle farms lead to job opportunities for indigenous people. However, they stress that is difficult to maintain employees. The farms are often isolated and not close to any facility. Most of the employees leave as soon as they saved enough money. They do not take the long-term advantages of having a job into account (Belgium investor, personal communication, February 25 2014).

According to some investors, while NGOs try to help, they sometimes fail in their attempts. NGOs often assume that indigenous communities want to keep living in and from the forest. Some investors stress that indigenous communities also want to modernize, progress and make use of modern facilities. Therefore, investors stress

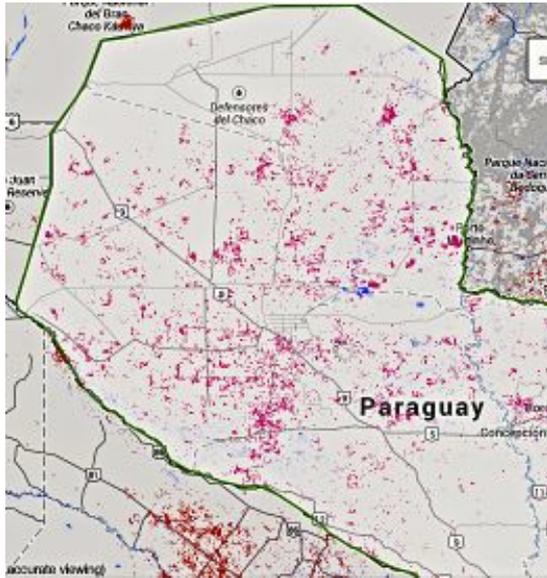
that indigenous people, not NGOs, have to decide how they want to live and how they want to achieve this. Moreover, they see a possibility for indigenous people to start with keeping cattle themselves. Keeping a small number of livestock could help indigenous communities to sustain themselves. The cost of a small number of livestock is low, because they relatively do not need a lot of place and food. They do however generate money. The ARP wants to promote these initiatives for small-scale farmers and poor people (Medina, personal communication, April 15 2014).

Lastly, investors stress that education is a problem. Most of the indigenous people had on average 2 to 3 years education, while other Paraguayans had 7 years of education. Investors think that education will help indigenous people to sustain themselves in the future.

Environmental effects

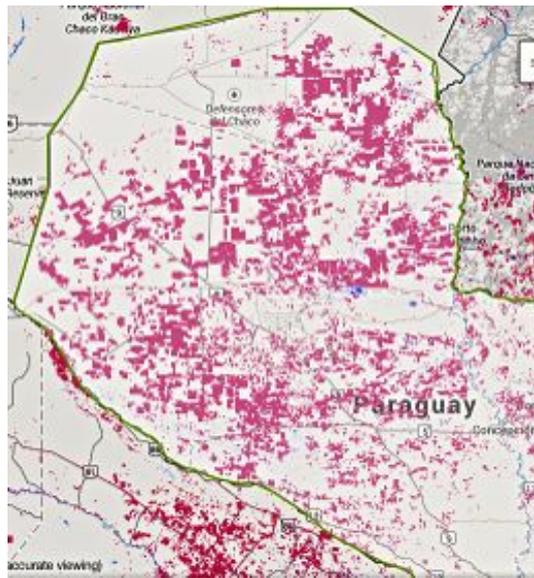
Deforestation, biodiversity losses and salinization

New investors had and are still having large effects on the environment of the Chaco. The largest effect has been on the forest, as is often the case with agricultural frontier expansion. Large numbers of trees are cut down in order to establish pastures. But also the establishment of infrastructure for, for example, oil exploration, resulted in deforestation. As a result, the Chaco belongs on a global scale to the places that are most rapidly being deforested. Between 2001 and 2013 a total number of 3,795,843 hectare was deforested, while only 51,024 hectare of forest was restored (Hansen et al., 2013). In 2010 and 2011 1,400 hectare was deforested per day in the Gran Chaco (includes deforestation rates in the Argentinian and Bolivian Chaco). In 2012 and 2013 this grew to an average of 2,000 hectare per day. The total number that was deforested in the Paraguayan Chaco in 2013 was 236,869 hectares (Cabellero, Arévolos & Palacios, 2014). On Map 6 and Map 7 one can see the results of deforestation in the Chaco. The colour pink represents the tree cover loss (based on the UMD) in that moment. As one can see, the amount of pink is substantially larger in 2013 than in 2003.



Map 6. UMD Tree Cover Loss Chaco 2003.

Source: Hansen et al., via Global Forest Watch



Map 7. UMD Tree Cover Loss Chaco 2013.

Source: Hansen et al., via Global Forest Watch

As a result of the deforestation, the biodiversity of the Chaco is affected. The forest is fragmented, because of the establishment of pastures. This fragmentation of the forest makes it harder for larger animals such as pumas to move around. They have a smaller place to sustain themselves, which makes it hard for them to survive. Not only large animals are affected by the deforestation. Parts of the forest near water reserves are cut down in order for cattle to have access to water. As a result, it is harder for smaller animals to establish themselves near the water reserves. Investors try to reduce effects on the biodiversity by prohibiting hunting on their properties. However this has led to some criticism of NGOs, because this negatively affects the livelihoods of indigenous people. In addition the Chaco is vulnerable to soil degradation and desertification. This is a result of the high temperatures in the Chaco. While the law states that windbreaks need to be established to prevent desertification, desertification remains a problem. Because large amount of lands are deforested, the land is exposed to a lot of sun. The evaporation level is higher, which increases the risk of desertification. In addition, there are global effects of climate change. If the temperature rises and rainfall will diminish, these effects will be enhanced and desertification becomes an even larger problem.

Another effect of the establishment of farms is the increasing pressure on water reserves. Water is scarce in the Chaco. In addition, some of the soils in the Chaco are salty. Cattle needs water in order to survive. The arrival of new investors has increased the pressure on water. Access to water becomes harder. In addition, by having ground dwells, salinization of the soil becomes more apparent.

NGOs state that it is important to make investors understand the value of keeping the forest. They show that the forest is valuable to keep wild life and to reduce biodiversity losses. It keeps the microclimate in balance. In addition, forests protect the soil from too much exposure to sun. In this sense, the forest is valuable. The forests also have cultural value, because it holds several indigenous groups that live from the forest. Cutting down the forests has resulted in loss of traditional lifestyles. Moreover, in the light of global climate change deforestation is unwanted. The forest is valuable to absorb carbon dioxide and reduce global climate change effects.

It is for these reasons that CSR-values have been introduced in the *new economic order*. However, CSR-values surrounding the environment do not seem to be the highest priority of new investors in the Chaco. The outcome of deforestation and biodiversity loss illustrate this. The effects of new investors on the environment indicate that environmental responsibility and technologies are not promoted in such a way that it makes a difference. Also the importance of the forest for indigenous groups is hardly taking into account. Negative environmental effects of land acquisition are apparent, which indicates that also the CoC does not belong to the priorities of new investors.

The role of the government

While the forest is seen as something valuable, the deforestation in the Chaco is mostly being conducted legally. According to the national law, there has to be a block of forests on every purchased land, which covers 25 per cent of the surface of the land. In addition, there have to be windbreaks and a barrier of 100 meters of forest between roads and pasture lands. As a consequence, investors can use 50 to 60 per cent of their lands for cattle production. The remaining 40 to 50 per cent of the surface is covered with trees. While the laws do take forests into account and place limits concerning deforestation, the growing number of investors has still resulted in rapid deforestation of the Chaco. In addition the law does not take into account that

some parts of the forests are more valuable than others. Forests near water reservoirs are, for example, more important for animals and their existence. Cutting down these forests could result in biodiversity loss in the Chaco of certain species.

While there are some errors in the law, the largest problem concerning the laws surrounding deforestation is the implementation and monitoring of the law. Every investor has to have a forest management plan, which has to be approved by the SEAM and INFONA. The SEAM, who is monitoring if investors comply with the forest management plan and the law, does not have enough manpower to sufficiently control this. They have 11 employees that have two cars at their disposal to cover millions hectares of land. It is impossible for them to cover and control the whole country. As a result, the SEAM only review farms if they get complaints. Even checking up on the complaints is hard, taking into account that they get 15 complaints daily. Because there is a lack of control, illegal deforestation emerges. There are investors that cut down more forest than is legally allowed, because the chances of getting caught are not high. In addition, the SEAM is often associated with corruption. Both NGOs and investors state that officers of the SEAM take bribes from investors if they have deforested above the legally allowed level. Therefore, they believe that the SEAM is incapable. The INFONA has a better image than the SEAM, even though it is also associated with corruption concerning the management plan. The INFONA has more manpower and more offices than the SEAM has. However, the INFONA is not responsible to monitor if laws concerning deforestation are respected. In this regard, they do not have to prevent illegal deforestation.

Illegal deforestation happens mostly in the Northern part of the Chaco. Illegal deforestation is also associated with investments in land speculation. Most of the investors who invest in cattle farming respect the laws, because they need to forest on the long run to be economically viable. Firstly, it provides shadow for their cattle and is needed for the cattle in dry seasons. Secondly, these investors aim to have a business in the Chaco for a longer period of time. Taking care of the environment of the Chaco is therefore of more importance. In contrast, land speculators often stay in the Chaco for a short time. For them, the value of the forest is lower, which makes them less opposed against illegal deforestation.

Both, investors and NGOs, state that the government should improve monitoring and implementation of the laws. Both parties believe that the laws concerning deforestation are, more or less, sufficient as long as investors comply with these laws. However, the government is not strong and present enough to force investors to comply with the law. The private sector and the NGOs, themselves, have to take care of this. Moreover, they state that illegal deforestation can be counteracted if the government would use GPS and satellite photos.

According to the investors: climate debt

According to the ARP, the agricultural sector is responsible for 65 per cent of the annual carbon dioxide emissions in Paraguay. In this sense, the ARP acknowledges that agriculture has large effect on the impacts on the environment. On the other hand, they stress that Paraguay is not the biggest emitter of greenhouse gases. In 2009 they have carried out a study that showed that Paraguay emits less carbon in comparison with the world average. According to this study, the world on average emits 4.5 million ton of carbon a year, while Paraguay only emits 3.8 million ton of carbon a year. The European Union and the United States emit a substantially larger amount of greenhouse gases with respectively 8.3 and 16.4 million ton of carbon a year. With regards to this finding, the ARP, just as a lot of investors, think that their impact on the climate is relatively low. These results justify the deforestation for them.

In addition, the investors criticize foreign NGOs, especially the ones coming from Europe and the United States, for their comments on deforestation in the Chaco. Their comments should be viewed from the climate debt theory. This theory was introduced as a reaction to the initiatives to reduce climate change. The climate debt principle states that developed countries owe a twofold climate debt towards developing countries. Firstly, their current emission per person has resulted in the denial of a fair share of emissions for developing countries. According to this concept, it is the developed countries that need to reduce their emissions, and provide developing countries with finance and technology to meet the energy needs. Industrialized countries, therefore, owe an emission debt. Secondly, the disproportionate contribution to climate change resulted in the requirement of developing countries to adapt to climate change. Developed countries should help developing countries to adapt to climate change. Industrialized countries, therefore, owe an adaptation debt

(World Development Movement, 2009). A lot of investors agree with this view. In their eyes, it is hypocritical to criticize the deforestation in the Chaco, because the European countries and the United States did the same themselves. Moreover, as is shown in the numbers above, they are not the ones that emit the most and cause or caused climate change.

Most investors think the economic development overrides the negative effects of deforestation. Leaving the forest as it is does not provide profits. Especially, because investors do not perceive the forest in the Chaco as high-value forest. They argue that it mainly exists out of dry bushes and does not have a lot of high trees, which they associate with high-value forest. Moreover, they argue that there is still a lot of forest. At the moment, forests cover 14 million hectare of the Chaco. In their perception this is sufficient. The ARP states that in the future they want to deforest another 5 million hectare for cattle farming, mostly in the northern part of the Chaco. Lastly, the investors note that the climate of the Chaco is not changing. The investors do not experience higher temperatures or less rainfall as a result of global climate change or land-use change.

New initiatives

While CSR-values and the CoC are not yet visible in the Chaco, there is a growing tendency where new initiatives to protect the environment of the Chaco are introduced. Sustainability in the cattle sector in the Chaco is still a relatively new subject of interest. The growing global disapproval of deforestation and the growing global interest to prevent climate change, has led investors to take the environment into account. Before, most of the initiatives in the cattle sector have been focusing on gaining access to new markets, such as the European market at the moment. However, requirements to retrieve access to markets mostly focuses on certification concerning hygiene and not on certification concerning sustainability. Still, a tendency for growing interest in CSR-values can be distinguished. Not necessarily for philanthropic reasons, but mainly because lenders demand higher standards. European banks, for example, set rules concerning sustainability. In order to qualify for a loan, businesses have to comply with the rules set by the bank. Some of the businesses in the Chaco that prioritize sustainability are connected to such a bank. Economic drivers are therefore still the main drivers for investors to reduce pressure on the

environment and to introduce environmental friendly technologies. Legal and ethical considerations and philanthropic values are seen as less important reasons to strive for sustainability.

There are other initiatives coming from the business sector to become more sustainable. Just like there is a Global Roundtable for Sustainable Soy, there is a Global Roundtable for Sustainable Beef (GRSB). The GRSB is a relatively new initiative and is not yet active in the Chaco or Paraguay. They want to achieve sustainable beef by taking social responsibility and deliver an environmental sound and economically viable product. They take natural resources; animal health and welfare; people; safety; and efficiency and innovation into account (GRSB, 2014). According to one of the initiators, most of the investors in Paraguay are not interested in this initiative, because it is already hard to survive in the Chaco (personal communication, 2014). However, at the moment a similar roundtable is constructed for Paraguay in corporation with the Dutch NGO Solidaridad. This initiative will take the principles of the GRSB as a starting point. Moreover, they want to label the meat produced in the Chaco as natural beef. Cattle produced in the Chaco is only fed with grass. Cattle does not receive other nutrition like food mixes that for example include genetically modified soy. In addition, the beef can be seen as natural, because the cows have a lot of living space. The initiative to set up a round-table is planned to be established in 2 or 3-years time. To create support for the initiative, the ARP will be included. The main focus of the round table will still be on market incentives. However, certification and requirements concerning sustainability and CSR-values are gaining importance on the market. Some of the ranchers want to show their good intentions to the society.

Also a growing number of influential organizations in Paraguay see the importance of sustainability. FECOPROD, a trade organization for agriculture that works together with the ARP, is one of them. Members have to respect a set of rules that preserve the environment. They state that investors should respect both national as international laws concerning deforestation and chemicals. Moreover, they try to reduce harmful environmental effects in order to let future generations use the land. However, there is a shortcoming in their initiative. If members do not comply with the rules, there are no sanctions for them. It is even possible to join FECOPROD if one is not complying

with the rules. The ex-president of this organization states that this is due to the fact that FECOPROD is not a law making institution. It is the government who has to take care that ranchers comply with the laws (personal communication, March 31 2014). This shows that while there are new initiatives, the initiatives still lack power to push for more environmentally friendly businesses.

10. Conclusion

The growing demand for food and fuel has resulted in a rush for land. Investors are looking for agricultural lands to meet this growing demand. Large unused frontier areas experience a land-use change. In order to include these frontier areas in the national economy forests are converted into agricultural areas. In the last 15 years, the Paraguayan Chaco has experienced a transformation from a forest frontier with a small population and little interference to an agricultural area with the arrival of new investors. This study assessed how and to what extent the rush for land has affected the Chaco. It tried to reveal motives and drivers of new investors to come to the Chaco using the theory of translocal development that states that local development is linked to what is happening in other places. Moreover, this research assessed how new investors have affected the Chaco socially, economically and environmentally. The land-use changes were addressed using a livelihood approach and looking at the outcome of CSR-values. The research question of this research was:

What are the drivers of investments currently taking place in the Paraguayan Chaco and what are the economical, social and environmental implications of new investments for the Paraguayan Chaco?

Several semi-structured interviews were conducted, together with an analysis of secondary data, in order to answer the research question. Opinions, perspectives and experiences from the different investors, governmental institutions, experts and NGOs were collected to give a general overview of the developments in the Chaco.

Most of the investors invest in large-scale cattle farming focused on export and to a lesser extent in oil and gas prospecting, soy experiments and land speculation. The reasons for investors to move into the Chaco differentiated between local and global developments. Local conditions have made the Chaco an interesting investment opportunity. The introduction of a new grass type in the nineties made it possible to extend cattle farming. In comparison with other regions on the continent, the meat produced per hectare in the Chaco is high, which is attractive for investors who are interested in cattle farming. The laws in Paraguay are easy for an investor to comply with and the taxes are low. In addition, land prices in the Chaco are relatively low and

substantially lower than in other places in South-America, which makes the Chaco a favourable place to invest in.

It is the global growing demand for meat, soy and fossil fuels that have stirred investors to invest and move into the Chaco. The investments in the Chaco are a result of developments in other localities. Foreign investors mainly come from Brazil and Uruguay. In addition, there are also investors from Paraguay who move their farms from the Oriental to the Chaco. Concerning oil and gas prospection investors mainly come from Paraguay, the United Kingdom and the United States.

As a result of the arrival of new investors the Chaco as a region is getting more important for the national economy. Moreover, commercialization and enhanced infrastructure emerge in the Chaco. This can be seen as the trickle-down effect of the development chain. Socially, the arrival of new investors affects the indigenous people negatively mostly. While the Mennonites experience more competition, they also benefit from the new job opportunities that arise with the arrival of new investors. There have been multiple cases of displacement of indigenous communities because they do not legally own their traditional lands. In addition, indigenous people see their livelihood assets declining with less access to resources, less secure shelter, less self-determination, less freedom and less amount of land. The access to health and the ability to work did enhance since the arrival of new investors. The environment is affected through deforestation, biodiversity loss and salinization. Considering the outcome of the investments, CSR-values for both the environment and human right do not seem to be spearheads for new investors.

In order to mitigate negative impacts of the arrival of new investments for indigenous people or the environment it is important that the government control and implement the laws. Different actors indicate that some governmental institutions are not able to achieve this. This is due to different reasons. Firstly, the government itself does not always comply with the law as was seen in the example of the Cuyabía community. Secondly some institutions lack manpower, which makes it hard for them to implement laws and monitor. The SEAM, for example, does not have enough resources at their disposal to combat illegal deforestation. Thirdly, the government does not always possess information to mitigate negative effects. This is especially the case with regards to double land titling. Fourthly, some employees of governmental

institutions are corrupt. As a consequence, illegal deforestation and the violation of rights of indigenous communities are apparent. It is important for the government to comply with, implement and monitor laws to overcome negative effects. Besides the importance of a stronger government, the introduction of social responsibility from businesses could mitigate negative impacts of investments. While there are some new initiatives to enhance this, these initiatives are still in its infancy.

The main limitation of this study is the amount of investors interviewed. As a result it was harder to generalize. Moreover, this research could not give specific information about where specific new investors settled themselves. This was also a result of the large, impassable surface of the Chaco that had to be covered. However, despite these limitations, the respondents provided sufficient information to give a general overview of the developments in the Chaco and to answer the research question. Since research about the Chaco is scarce, this study contributed by giving more information into the current developments in the Chaco. A more focused and specified research about investments in the Chaco could help to overcome the limitations of this study. Focusing on a smaller area or a specific business sector could provide more specific information. Moreover, a study with more specific statistics surrounding the amount, the origin and the specific places where new investors settle themselves could give valuable data, especially with regards to mitigating the negative effects of investments.

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Annex

Annex 1 – Interview guide

Interview guide for experts

1. What have been the flows of investment and main activities in the Chaco?
 - Who are the new investors?
 - Where do they come from?
 - In what do they invest?
 - Why do they come to the Chaco?
2. What are the effects of the investments?
 - On indigenous communities: effects on livelihood assets
 - On Mennonite colonies/existing companies
 - Environmentally
3. What is the role of the government?
 - Concerning property rights
 - Laws concerning deforestation
 - Corruption

Note: the focus of the interview depended on the expertise and field of the expert

Interview guide for investors

1. Introduction
 - Who are you (from which company do you come)?
 - Where do you come from?
 - In what do you invest; type of land-use: crop/livestock
 - Where in the Chaco do you invest?
 - What is your reason to come to the Chaco?
2. Size
 - How many hectares is your land? Or: number of cows
 - How many farms/location do you have?
 - How many employees do you have?
3. Characteristics
 - On which market do you focus?
 - Who are your customers and what is your relationship with them?
 - What value is your product adding in the chain?
 - What are your key resources?
 - What are your key activities?
 - Who are your key partners?
4. Working conditions
 - How many hours a day?
 - Health and safety regulations

- Training and schooling
- 5. Environment
 - What do you think about climate change?
 - Is it important to minimise pressure?
 - What is the role of the forest?
 - Deforestation
- 6. What are the consequences of new investors for your business?
 - Negative/positive
- 7. What are your future plans?
 - Selling/buying land?
 - Other activities?
 - Extensification/intensification

Interview guide for governmental organisations

1. What is the role of this institution/what does this institution do?
2. What are the laws (concerning deforestation, property rights, etc.)?
 - Requirements
3. How do you monitor and implement the laws
 - Role of corruption
 - Are rules respected?
4. How is the cooperation with other governmental institutions?
5. What should be improved
 - Do you have sufficient means to pursue your purposes?

Annex 2 - List of interviewees

Table 5. List of interviewees

Name	Organisation	Date #1	Date #2
Oscar Sanchez	ICCO	18/02	27/04
Guillermo Ortega	Base IS	25/02	08/04
Investor	Belgium company	25/02	
Eddie Ramirez	PCI	26/02	
Julia Cabello	Tierra Viva	03/03	
Nora Mongelos	Iniciativa Amatocodie	05/03	
Miguel Llovera	Ex-president SENA VE	12/03	
Fabricio Vázquez	Researcher	13/03	
Marcos Glauser	Researcher; Anthropologist	13/03	
Rodrigo Villagra	Anthropologist; Lawyer	14/03	
Daniel de Boer & Ruraid Peter	Mc Donalds & GRSB	19/03	
Simone Llovera	Global forest coalition	20/03	
Oscar Rodas & Enrique Bragayrac	Guyra Paraguay	21/03	07/04
Marianne Hilders & Luca Eufemia	WWF	21/03	
Guillermo Terol	DAP S.A.	24/03	
Juan Leon	Lawyer	25/03	
Agate Herder	Fernheim Cooperative	27/03	
Patrick Friesen	Chortitzer Cooperative	28/03	
Unine	Cuyabía leader	29/03	
Maximiliano Mendieta	Tierra Viva	29/03	25/04
Michael Rudolph	PCI	31/03	
Gustav Sawotzky	Chortitzer cooperative; ex-president Fecoprod	31/03	
Harry Bartel	VLW S.A.	31/03	
Employee of investor	French company	01/04	
Roberto Cudas	Erurales S.A.; Solidaridad	02/04	
Sustainability manager of investor	Paraguayan company	08/04	
Diane & Antonio Espinoza	Erurales S.A.	08/04	
Christina Morales	President SEAM	10/04	
Mercede Canese	Ex-vice president mining & energy	11/04	
SEAM Officers	SEAM	11/04	24/04
Jorge Servin	President INDI	14/04	
Marcos Medina	ARP; Fondo Ganadero	15/04	
Gustavo Ruiz Dias	Solidaridad	15/05	
Reinerus Klein-Holkenborg	Dutch investor	16/05	
Albrecht Glatzle	Expert tropic grasses	25/04	
Olivia Cona	Tierra Libre; ex-INDERT employee	28/04	
Alberto	Ex-INDERT employee	30/05	
Marta Alvarez	INFONA	30/05	

Annex 3 –Other activities

Table 6. Other activities

Activity	Place	Date
Katoomba Congress XIX	Foz de Igauzu, Brazil	19/03 – 20/03
Guided tour Chortitzer Cooperative	Loma Plata, Paraguay	28/03
Visit Cuyabia Community	Near Mariscal Estigarribia, Paraguay	28/03 – 30/03

