

# **The Effects of Large-Scale Land Acquisitions (LSLA) on Households in Rural Communities of Peru**

**Gender relations, decision making and food security**

Two case studies in Piura, Peru

Laura Tejada

Berne, September 2015/ January 2017

## Contents

1.	Introduction.....	4
2.	Specific introduction to the case study.....	4
2.1	Summary of the main characteristics: land, history, political system.....	4
2.2	Characteristics of land tenure and land use.....	6
2.3	Characteristics of gender issues.....	7
2.4	Characteristics food security situation.....	8
2.5	History of LSLA at national level.....	8
2.6	Why the country is a good case to study.....	10
3.	General institutional context.....	11
3.1	Relevant public policies (public law) in connection with the food system:.....	11
3.1.1	Biofuels.....	11
3.1.2	Water.....	11
3.1.3	Forest.....	13
3.1.4	Joint titulation of land between men and women.....	14
3.1.5	Labor.....	15
3.1.6	Free Prior and Informed Consent (FPIC).....	16
3.1.7	Free trade agreement.....	17
3.2	Formal property rights.....	17
3.2.1	The State of «Property Rights Formalization» in Peru.....	17
3.2.2	Relevant legislation defining formal property rights.....	18
3.2.3	Information about cadaster and register of deed, use and transfer rights (incl. inheritance) 19	
3.3	Relevant customary institutions in connection with the food system.....	19
4.	General description of the two case studies.....	20
4.1	“Issue at stake”.....	20
4.2	Description of the spatial and temporal boundaries of the two case studies.....	21
4.3	Independent variable.....	23
4.4	Intermediary variable: Actors of the food system and their organizations.....	23
4.5	Dependent variable: Description of the local food system.....	28
4.5.1	Food Production.....	28
4.5.2	Food Processing.....	29

4.5.3	Food Distribution .....	29
4.5.4	Food Consumption .....	29
4.5.5	Differences between the lower (Caña Brava) and the lower-middle (Maple) Chira Valley	29
4.6	Documentation of available data .....	30
5.	Analysis of the different phases of the LSLA process and of its impacts.....	31
5.1	t <sub>-1</sub> situation.....	31
5.1.1	Organization of the food system.....	31
5.1.2	Actor constellation and actors' strategies.....	32
5.1.3	Decision Making .....	33
5.1.4	Condition of the food system ⇒ ability to guarantee food security .....	33
5.2	t <sub>0</sub> situation.....	34
5.2.1	Organization of the food system.....	34
5.2.2	Actor constellation & actors' strategies .....	35
5.2.3	Decision Making .....	37
5.2.4	Condition of the food system ⇒ ability to guarantee food security .....	38
6.	Diachronic comparative analysis of the case at t <sub>-1</sub> and t <sub>0</sub> , including predictions for t <sub>+1</sub> .....	39
6.1	Comparison .....	39
6.2	Prediction.....	40
	Bibliography.....	41

## 1. Introduction

The report at hand forms part of a larger research project entitled «The effects of large-scale land acquisitions (LSLA) on households in rural communities of the Global South: gender relations, decision making and food security». This research project investigates the impacts of LSLA on gender relations, decision making and food security by analyzing three variables: institutions, actors and the condition of the food system (see Gerber et al. 2013). The central questions guiding this research project are:

1. What are the impacts of LSLA on the configuration of actors who are using, maintaining and organizing the local food system and what coping/resisting strategies do these actors develop?
2. What are the impacts of the configurations of actors and their strategies on the local food system in terms of food security?

The research project in Peru is based on a comparison two case studies along the northern coast, a domestic biofuel investor (Caña Brava) and a transnational biofuel investor (Maple Ethanol S.R.L.). For each case study the above mentioned variables will be analyzed at three different moments in time: (1) before the implementation of LSLA ( $t^{-1}$ ), (2) today, thus 7-8 years after the implementation of the LSLA in the case of Peru ( $t^0$ ), (3) in the near future, in the form of a prediction ( $t^{+1}$ ). Accordingly, the comparison takes place both within (diachronic comparison) and between the case studies (synchronic comparison).

Giving an introduction into the case study area will form part of the initial section of the report. In a third step the general institutional context – including public policies, land tenure law and customary law – enabling large-scale investments in agriculture and in which actors develop their strategies, will be presented. The fourth section contains a description of the case study area including a depiction of the three variables – institutions, actors, food system - in the local context. The fifth section will focus on the presentation of the results and comparison of the different phases of the LSLA process, followed by a comparison between the domestic and the transnational investor. The report concludes with a discussion of the research hypothesis and an overview of planned publications.

## 2. Specific introduction to the case study

### 2.1 Summary of the main characteristics: land, history, political system

Peru can be divided geographically into three different regions: the coast, the highlands and the Amazonian lowlands. As José Carlos Mariátegui – a famous Peruvian writer - has already stated in 1928, this division is not only a physical one, but also reflects fundamental differences in the social and economic reality. Nothing has changed regarding the biophysical differences since Mariátegui's statement. The arid coastal strip, the Andean highlands with its plateaus and valleys and the tropical rainforest have geographically little in common. However, the borders have become more blurred in the second half of the 20<sup>th</sup> century, when hundreds of thousands of Andean migrants began migrating into the coastal cities, fleeing from war and violence. (von Oertzen & Goedeking 2004). Nowadays more than half of the 31 million Peruvians live along the narrow coastal strip, 9.8 million (INEI 2015) in the region of Lima. The region of Piura – where fieldwork for this report was conducted – is situated in the northern coastal and Andean highlands of Peru and is the second most populated region after

Lima. Piura's richness in natural resources can be attributed to the two cold and warm ocean currents – the cold Humboldt and the warmer El Niño current – and make the region occupy an important position in the national economy. The warm current periodically disrupts the trajectory of the cold current, leading to the appearance of other fish species and heavy rainfall causing floods. Thus, the region of Piura is of great importance for both the agricultural and fishing sectors of Peru. (Oft 2010). Yet, the economic and commercial importance of Piura is a relatively new phenomenon that has its origins in the early 20<sup>th</sup> century. The continuous improvement of the hydraulic infrastructure of the rivers Chira and Piura<sup>1</sup> was a decisive factor for the transformation of the agrarian landscape, enabling a steady growth of the productive capacity (see chapter 2.2). (Revesz & Olliden 2011). The region of Piura has a population of around 1.8 million (INEI 2015) and 30.1 percent of the economically active population works in agriculture. Piura is characterized by the direct cultivation or processing of traditional crops like rice, cotton, maize and coffee as well as non-traditional crops like banana, organic coffee, limes, mango, «menestras», grapes, chili and sugar cane. (Cabrejos Vásquez 2011). In 1969 the military government of Velasco Alvarado initiated an agrarian reform in the coastal and highland area, which left deep marks in Peruvian agriculture until today. The agrarian reform set maximum limits to the amount of land that could be owned by individual land holders, corresponding along the coast to 150 hectares for irrigated and 300 hectares for non-irrigated land. These regulations resulted in the expropriation of large agricultural enterprises – so called «haciendas» - including 12 enormous sugar estates along the coast. The military regime envisaged the development of co-operative forms of organization on the land of the expropriated haciendas, accordingly a vast majority of coastal estates were transformed into Agrarian Production Cooperatives (CAPs)<sup>2</sup>. (Kay 1982). Besides the CAPs, also another model emerged: the Communal Cooperatives of Workers (CCTs). While in the case of the «state cooperative» CAP model the former workers of the haciendas became associates of the land properties, in the «community-based» CCT model the land is property of the community. In Piura the first cooperatives evolved in the Chira river basin and the highlands of the Piura river basin, followed by the lowlands of the Piura river basin. In parallel to this, an alternative model of association emerged, the so-called Communal Production Units (UPCs). Even though the reform has been successful in remodeling agrarian properties, it did not present solutions for the control of markets and prices by powerful economic groups. Besides, the new enterprises failed to manage themselves effectively and the administrative corruption resulted in the partitioning of the land amongst the associates of the CAPs in the highlands, whilst the cooperatives in the Chira valley were reshaped and reformed into smaller entities. (Oft 2010). The agrarian reform did not leave large estate owners empty handed, they were compensated for the loss of land as well as other fixed assets and livestock (Kay 1982). Besides, «hacendados» who gave away their land voluntarily – like the Romero Group (later setting up the company Caña Brava) – were rewarded with influential positions in directorates of state-run enterprises and commissions of the ministries (Durand 2013).

---

<sup>1</sup> There are three river basins in the region of Piura. One of them, - the Huancabamba river basin – leads to the Atlantic Ocean and is shared by the regions of Piura, Lambayeque and Cajamarca. The other two watersheds, leading to the Pacific Ocean, comprise the Piura river basin and the binational river basin called Catamayo-Chira coming from Ecuador and concerned with in this study. (Oft 2010).

<sup>2</sup> The CAPs were intended to be indivisible production units, in which both ownership and usufruct of all productive assets are collective. In theory no individual production was permitted. All members (associates) were supposed to work in the collective enterprise and to participate in the management of the CAP through democratically elected bodies. The earnings were used for financing a reserve, investment and development fund as well as social security and education. After the deduction of all these contributions, the leftover profit was distributed among members either equally, or according to the number of days worked. (Kay 1982).

## 2.2 Characteristics of land tenure and land use

The productive modernization the Piura region has experienced during the 20th century can be attributed to the continuous improvement of the hydraulic infrastructure as well as to the regional specialization in the exportation of high-quality cotton. The construction of an extensive canal system from 1895 onwards<sup>3</sup>, made it possible to quadruplicate the irrigated surface of the coastal valleys of Piura and provided the basis for the concentration of land in the hands of new cotton «haciendas», which displaced the native farmers and reduced the weight of the peasant economy. With the Agrarian Reform of 1969 the «haciendas» started disappearing and were replaced by a small-scale commercial agriculture<sup>4</sup>, which dedicates itself primarily to the cultivation of rice and cotton. However, even though these two monocultures have persisted, the region of Piura has experienced a productive reorientation in the last 30 years, which is strongly dominated by fruit trees. In the Río Chira valley this trend towards fruit production, has manifested itself basically in the development of organic banana plantations. A relatively new phenomenon - at regional level - is the decline in cotton production and its substitution through rice production. This phenomenon can be attributed, basically, to the stagnation of the cotton price at international markets and was even worsened with the massive control of its commercialization in Peru. Yet, there are also regional factors, which have to be taken into account, like the possibility to cultivate rice due to the permanent access to water enabled by the improved hydraulic infrastructure and the Niño Phenomenon of 1998, which destroyed the cotton campaign. (Revesz & Oliden 2011).

In the Lower Río Chira Watershed – where research for this report has been conducted - the acquisition and sale of land by agribusiness firms has been intensified between 1996 and 2009. Different decrees released in advance enabled the arrival of large biofuel investors, which has created a completely new «post-agrarian reform» setting: the co-existence of large-scale agricultural investments and small-scale commercial agriculture. (Revesz & Oliden 2011). This process of (re)concentration of land in the region of Piura becomes evident when comparing the land tenure data from the agricultural census of 1994 with the one of 2012 (see figure 1). It is clearly visible that parcels with a size below 20 hectares have a much lower share of the total number of agricultural entities in 2012 compared to 1994, while the number of parcels with a size of 500 hectares or above has increased from 1 to 34 percent (of the total number of agricultural entities).

---

<sup>3</sup> The transformation of the waterscape in Piura happened in 4 stages: In the first stage (1895-1905) private farmers built the first canals in the «Chira» and «Bajo Piura» valleys; In the second stage – during the presidency of Leguía in the 1930s – some expansions of the canals were executed; In the third stage the discharge of the Río Quiroz was made possible with the help of the World Bank and the San Lorenzo colonization was realized (1951-1964); In the fourth stage the «Poechos Reservoir» as well as the «Proyecto Chira-Piura» were built. (Revesz & Oliden 2011).

<sup>4</sup> Entities which base their production fundamentally on family workforce and which mainly produce for the market (Revesz & Oliden 2011)

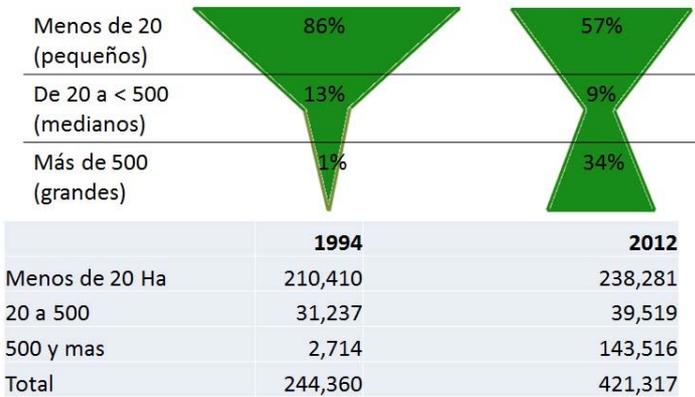


Figure 1: Structure of land tenure in Piura (Remy 2014a)

It should be noted, however, that the trend towards land concentration has not come along with a massive sale of parcels of small-scale farmers. The latter remain in the «old valleys», but their relative weight has changed due to the rising number of agricultural entities. (Remy 2014a).

### 2.3 Characteristics of gender issues

Two of the principal contributions on the situation of rural women in Latin America are the texts of Jacoby (1992) and Deere (2003, 2005). They both state a marked gender division of labor in the Peruvian Sierra. According to Jacoby (1992) women tend to invest more of their time in livestock production, while men are more involved in field work. Household surveys in the Peruvian highlands have shown that women and children are responsible for the greatest share of animal care, an activity that is very time-intensive and where labor is not hired for this purpose, while the estimated contribution of women to crop production is basically zero. (Jacoby 1992). The described gender division of labor can be observed in many regions of Latin America. Thus, agriculture is rather seen as a male activity and women are viewed essentially as housewives, no matter what their contribution to family agriculture actually is (Deere 2003). On the other hand, the literature suggests that women constitute at least 50 percent of the workers engaged in field work for nontraditional agro-export crops in Latin America. When it comes to packing operations required for export, the share of women in the workforce is even above 50 percent. Thus, while women are rather invisible workers on family farms, they are quite visible labor market participants in the agro-export industry. (Deere 2005). Most research in Peru on rural women and access to land has focused on the Sierra region (Francke 1990). However, some investigations of social science scholars have contributed to better understand the reality of rural women along the northern Peruvian coast (Rubin de Celis 1982, Van Kempen & Klarenbeek 1993, Boyle 1997).

There can be distinguished four principal mechanisms of acquiring land: through the family via inheritance, the community via inheritance or through land re-allocation, the state through land distribution programs or via land titling and market purchase. In Peru, the principal means by which women acquire land is inheritance with over 50 percent of women getting in possession of land through this mechanism. (Deere 2003). At national level there has taken place an improvement, with the achievement of co-titulation of land through programs like «Programa Especial de Titulación de Tierras» (PETT) for rural areas and the «Comisión de Formalización de la Propiedad para el ámbito urbano» for urban areas (Alvarado Merino 2004). But even though inheritance tends to be bilateral nowadays and law – in general – protects widows from property grabbing through other close

relatives, customary law often discriminates women. A factor that limits female inheritance is the fact that participation in assemblies is restricted to one person per family, which in general is the patriarch (FAO Gender and Land Rights Database 2015).

A good example of how formal property has not led to real equality in the distribution of economic goods between women and men, is the joint allocation and titulation of land to couples. As women along the northern Peruvian coast are excluded from direct access to land, the possibilities to participate in agricultural decision-making bodies is also restricted. The access to irrigation control boards is legitimated by masculine instruments of legitimation, as agricultural know-how and more sublime elements, like the separation of public and private spaces. Thus, even in cases where land property appears as «shared» in official documents, who manages the land is the male and widows often turn to sons or brothers. (Alvarado Merino 2004).

#### **2.4 Characteristics food security situation**

FAO states that Peru is in a state of food insecurity, which is mainly attributed to low levels of income and inadequate use of food by the population. It is estimated that in 2008, roughly 30.9 percent of the national population suffered from calorie deficiency in their diet. In rural homes this caloric deficit reaches close to 42.5 percent, compared to 28.9 percent among urban families. (FAO 2010). Therefore it is important to assess the impact of biofuel production on the food security of men and women, particularly of those living in rural areas of Peru.

The food availability is threatened because the export orientation of investors along the Peruvian Coast endangers the availability of water in the subsoil and land for the production of food for national consumption (FAO 2012b). According to Burneo (2011) it is undeniable that the problem of water scarcity has get worse with the arrival of national and foreign investors. The raising demand for food – due to population growth and increasing economic wellbeing – is increasingly covered by imported food (basically maize, wheat and soy) (FAO 2012b). This development puts the food access of the local population at risk, as it makes the local community more dependent on international food prices. A new trend - which aggravates the situation even more - is the fact that smallholders in Piura are being advised by the regional government of Piura to export the current production of rice, cotton and other crops or to replace these traditional crops with sugar cane. This is due to the low market prices currently paid for these crops in Peru (Benites 2012). To what extent the presence of biofuel investors improves the food access of the local communities through job creation, alternative energy sources and agricultural production technology has to be explored in the context of this research project.

#### **2.5 History of LSLA at national level**

During the presidency of Alberto Fujimori (1990 – 2000) the Peruvian government created favorable conditions for large-scale investments in agriculture. Beside the modification of different agrarian laws emanating from the period of agrarian reform in the 1960s (see chapter 3.2.2), the introduction of an exceptional labor rights regime for the agroindustry sector (see chapter 3.1.5), the signing of different bilateral and multilateral trade and investment agreements (see chapter 3.1.1), it is also the expansion of the agricultural frontier that has created a favorable environment for investments in the agro-export sector to develop. With the realization of large irrigation projects along the arid Peruvian coast, tens of thousands of hectares of land were made available for agriculture. The main beneficiaries of this agricultural frontier expansion were large-scale investors, as the land was divested in large-scale

plots, making it impossible for small- and middle-scale farmers to acquire those large land surfaces. (Eguren 2015). Another factor complicating the access of small-scale farmers to new agricultural lands is the increasing land price. In the auctions, where the divestment of uncultivated land is carried out, a base price of land and the minimum investment costs per hectare are set by the Agency for the Promotion of Private Investment (PROINVERSIÓN). However, the land price is likely to increase considerably - even quadruplicate – during the auctions and can vary according to the plot's location and access to water, making it impossible for small- and medium-size farmers to acquire the new agricultural land with access to irrigation water. Along with the expansion of the agricultural frontier, there are two other mechanisms through which large-scale investors obtain access to land for agricultural purposes: the land market and the privatization of large sugar companies. Regarding the land market, there is evidence that indicates that a significant number of farmers are selling their land – adding up to a considerable surface area – which is bought a small group of agro-industrial companies. The acquisition of land through the privatization of sugar cooperatives is a major issue along the coast. After the agrarian reform of 1969 the twelve major agro-industrial sugar production complexes were expropriated and converted into collectively held cooperatives. Due to a bad internal management and a deep national financial crisis, these cooperatives rapidly entered debt, which the state capitalized in the 1990s. The Fujimori government promoted the entry of private investors into the sugar sector with the sale of these shares. This allowed different powerful economic groups to concentrate large surfaces of land and to become «the new sugar barons» of the Peruvian coast. (Burneo 2011). After the description of the different mechanisms enabling the acquisition of land by large-scale investors, it becomes evident why in the Peruvian context it is prevalent to talk of «land concentration» instead of large-scale land acquisition. The processes that lead to the transfer of land to large-scale investors cannot be reduced to the divestment of large plots of irrigated state land to private actors in the context of public auctions. As we have seen, the acquisition of small-scale farmers' properties and the privatization of sugar cooperatives are not irrelevant mechanisms through which agro-industrial companies purchase land and expand their ownership.

In recent years the production of agricultural inputs for biofuels and the construction of biofuel processing plants have experienced a boom in Peru. This development is a response to the growing demand for biofuels in the United States and the European Union. Furthermore, the Peruvian State plays a central role in promoting the investment in this sector and has issued a set of measures to incentivize the production of biofuels (see chapter 3.1.1). The result of this framework is a large number of companies, which have begun to plant sugar cane – principally on the coast – and palm oil trees in the forest. (Burneo 2011). In the absence of official statistics, CEPES (2012) estimates that international investors are involved in the acquisition of at least 84'000 hectares of arable land along the northern coast and that a nation-wide area of about 164'000 ha can be attributed to on-going biofuel production, which is part of a planned total of 390'000 ha (CEPES 2012, 2013). Along the Peruvian coast some of the large sugar companies have already started to – or are planning to – devote a part of their harvest to the production of ethanol, due to the higher price paid on international markets for ethanol compared to sugar. Besides, the state has sold thousands of hectares of land to national and foreign investors recently, specifically for the production of inputs for biofuels. Some of the biofuel producing companies have also accessed land via the internal land market, buying land directly from local farmers. (Burneo 2011). Two biofuel investors of the northern Peruvian coast are subject of this study and will be presented with more detail later onwards.

There is little information available from the state or the private sector regarding the dimensions of land concentration for biofuel production in the Peruvian Amazon (Burneo 2011). However, IIAP & SNV (2008) have elaborated a list of all existent private and public sector initiatives for the production of biofuels, which comprises a total of 55 initiatives covering an area between 2 and 75'000 hectares. In the Amazon international donor agencies contribute significantly to the diffusion of biofuels, as the production of palm oil, jatropha, sugar cane, etc. is being promoted by alliances between the regional governments and development institutions like DED-CFC, United Nations, Fondo de las Américas, GTZ and SNV. There are also private initiatives who dedicate themselves to the production of sugar cane and palm oil on privately held properties, or land bought from small-scale farmers respectively received in the form of a concession from the state. (IIAP & SNV 2008). As the private sector initiatives lack a substantive inclusion of the local population, the arrival of these biofuel investments often leads to social unrest. Besides, land acquisitions in the Amazon region often conflict with territories of indigenous populations, whose land is only partially titled and thus makes these communities especially vulnerable to commercial pressures on land. (Burneo 2011).

## **2.6 Why the country is a good case to study**

With regard to country specificities, Peru is an interesting case to study because of the size of recent acquisitions. As mentioned above, the re-concentration of land has become an undeniable fact and the current large land holdings exceed by far the surfaces held by hacienda owners before the agrarian reform of 1969. The cumulative effects of large-scale land acquisitions can already be felt by rural communities in the form of a transition from being land owners to becoming laborers on the same land as well as a changing actor constellation, where the state is increasingly absent and private investors are filling the gaps that have developed. Furthermore, the expansion of the agricultural frontier along the arid coastal areas is driving up the agricultural water demand and leading to a declining availability of water resources, affecting especially small-scale farmers who lack the financial resources to access water via appropriate hydraulic infrastructure. (Burneo 2011). Another interesting aspect is the fact that – at least in Piura – the investors behind the current wave of large-scale land acquisitions are powerful Peruvian elite families, many of whom were large estate owners before the agrarian reform. Thus, the re-concentration of land ownership is bringing back to power the old «hacendados», who were expelled when Velasco Alvarado declared Piura a zone of agrarian reform.

Peru is also interesting for the fact that several authors (Anseeuw et al. 2012; Deininger et al. 2012) have praised the country's transparency laws allowing access to information regarding all planned large-scale land acquisitions prior to implementation. In a recently published World Bank report Deininger et al. (2012) describe the different mechanisms applied in Peru to divest public land for investment projects, pointing out that all intended investments are published in local, national and international media before concluding the deal. This study shall offer an opportunity to contrast these statements made by international financial and research institutions - based on short-time visits to the country - with the realities found on the ground. There is evidence that suggests that the acquisition of land by large-scale investors has not always been as transparent and harmonious as depicted in the literature. Burneo (2011) describes different cases where the privatization of former sugar cooperatives has resulted in an intense conflict between the investor and workers who still hold shares. The most serious case is one concerning the Pucalá company, which has provoked the death of 21 persons since the 1990s, including the lawyer of the major stockholder and the one of the workers.

### 3. General institutional context

#### 3.1 Relevant public policies (public law) in connection with the food system:

##### 3.1.1 *Biofuels*

In August 2003 the «Law on Promotion of the Biofuel Market» (Law Nr. 28054) was approved by the Peruvian congress, a legislation which commits to an obligatory mixture of diesel respectively petrol with biodiesel respectively ethanol. Since then, commercialized diesel has to contain 5 percent biodiesel and petrol 7.8 percent alcohol or ethanol (CEPES 2012). Shortly after the enactment of the new legislation - which created a national demand for biofuels - the «Proyecto Especial Chira-Piura» (PECHP) asked the regional government of Piura for the reservation of dry forest land in the Chira Valley for the development of a biofuel project (Urteaga 2013). Indeed, the production of biofuels can contribute to more private investment, to a higher energetic security in response to the constant price fluctuations of petrol and to the reduction of the excessive pollution in urban areas (FAO 2012a), yet little is known about the impacts of biofuel production on land property, socio-environmental conflicts, biodiversity and food security (CEPES 2012). In fact the «National Agroenergy Plan 2009-2020» mentions certain risks regarding biofuel production along the coast, which are related to water issues: the missing information regarding water supply in the watersheds, lacking clarity when it comes to rights and obligations related to water, the excessive informality of water rights, the water deficit along the coast, the defective hydraulic infrastructure due to sedimentation, etc. (Ministerio de Agricultura 2009). However, the majority of authorities assigned with the promotion of biofuels, did not take into consideration water issues in their investment schemes. (Urteaga 2013).

##### 3.1.2 *Water*

With the Agrarian Reform Law and the General Water Law of 1969, land and water resources came under the control of the state. New actors like the Agrarian Cooperatives of the coast, the Agricultural Societies of Social Interest (SAIS), the Companies of Social Property (EPS) and the Campesino Groups of the Sierra emerged, and the former actors started disappearing (Oré et al. 2009). The General Water Law of 1969 declared all the water in the Peruvian territory as property of the state:

«Water resources are, without exception, a property of the state and his authority is inalienable and imprescriptible. There is neither private property of water resources nor the acquisition of rights over them. The justified and rational use of water resources can only be granted in harmony with the social interest and the development of the country.» (General Water Law, Decree No. 17752 (1969))

The General Water Law of 1969 appointed the Ministry of Agriculture as central water authority and the Ministry of Health as authority in all issues related to water quality. However, about a decade after the initiation of the Agrarian Reform – at the beginning of the 1980s – the Agrarian Cooperatives along the coast were dissolved and their territory subdivided into small plots. Along with others factor related to the political economy of the military regime, these processes made way for a restructuring of water governance in Peru. (Oré et al. 2009). During the neoliberal government of Alberto Fujimori in the 1990s, the law D.L. 653 (Law on the Promotion of Investments in the Agricultural Sector) - enacted in 1991 - modified some important aspects of the General Water Law of 1969. During the 1990s, governmental institutions in charge of managing water resources in the country were reduced to a minimum.

In January 2003, 25 new regional governments came into operation. They were established on the basis of the political demarcation given by the departments. According to the «Decentralization Law» the design of the sectoral water politics is in hands of the national government and all the duties related to the sustainable management of natural resources as well as the improvement of the environmental quality, are a responsibility of both the national and regional level. The responsibilities of the regional governments are specified in the «Ley Orgánica de Gobiernos Regionales». Article 51 refers to the role of regional governments regarding agrarian subjects, when it comes to water issues digressions c) and f) are especially relevant:

c) «Participate in a sustainable management of water resources in the context of the watershed entities and the policies of the national water authority.»

f) «Promote and execute irrigation projects and constructions, improvement of irrigation, adequate management and conservation of water resources and soils.» (Ley Orgánica de Gobiernos Regionales, Ley No. 27867 (2003)).

Both functions are related to the utilization of water resources, but it represents a shared responsibility, as the design of sectoral water policies is – as mentioned before - a non-delegable responsibility of the national government. The decentralization process resulted in the transfer of almost all Special Projects along the Peruvian coast, which were in the hands of the «Instituto Nacional de Desarrollo» (INADE) to the regional level (Oré et al. 2009). Thus, the authority for these Special Projects was transferred to the regional governments. This is also true for the region of Piura (region where the case study material for this report was collected), where the irrigation scheme «Special Project Chira-Piura» (PECHP) was transferred to the regional government of Piura. In 2006/ 2007 PECHP became one of the key actors in the sale of lands along to foreign and national (biofuel) investors.

With loans and guidance from the Inter-American Development Bank (IDB) and the World Bank, Peru initiated an ambitious water reform in 2000, the so-called Water Resource Management Modernization Project. This modernization project is firmly grounded in the Integrated Water Resources Management (IWRM) and aims to integrate all aspects of water governance under the umbrella of one single authority, to develop a national expert-managed water information system, to impress a «new water culture» upon policy makers, civil servants, children, and the public as well as to transfer responsibility for water governance to the watershed level. There are three major institutional innovations which resulted from this initiative: (a) enacting of the first water law since 1969 in 2009, (b) the creation of a the new national water authority (Autoridad Nacional del Agua ANA ) in the same year, and (c) an on-going project with goal of introducing watershed governance councils (CRHCs) consisting of state and non-state actors. (Deutsch 2013).

The New Water Law (No. 29338) of 2009 defines the (a) structure of the new institutional setting, (b) sets rules for and prioritizes water uses, and (c) specifies water rights (Deutsch 2013):

- a. The basic structure of the ANA consists of the following organs: (a) Directive Council, (b) Directorate, (c) National Tribunal for the Resolution of Hydrological Controversies, (c) Backstopping and Consulting Organs, (d) Administrative Water Authorities (AAA), (e) Local Water Administrations (ALA), which depend of the Administrative Water Authorities (AAA).
- b. Article 35 of the New Water Law defines three different uses of water with the following priority: (1) primary use, (2) human use, (3) productive use. Regarding the sorts of productive

- use, the law determines the following ones: (i) agrarian sector: agricultural und animal husbandry; (ii) water supply management and fishery; (iii) energetic; (iv) industrial; (v) medicinal; (vi) mining; (vii) recreative; (viii) touristic; (iv) transport. However, the law does not comprise any sort of prioritization when it comes to productive uses, which the General Water Law of 1969 (article 27) still defined. The New Water Law of 2009 goes on specifying that in the case of having two identical productive uses, the one with the greater public interest should be preferred according to the following criteria: (a) the higher efficiency in the utilization of water; (b) the higher generation of employment; (c) the merest ecological impact. This can lead to a situation, where agribusiness-firms are prioritized vis-à-vis small-scale farmers due to their water-saving drip irrigation system.
- c. Article 45 of the New Water Law defines three different water rights: (1) water license, (2) water permit, (3) authorization for water use. Water licenses are issued without time-limit, as long as the activity for which a license was requested persists. They are not transferable, if the license holder does not wish to continue using it, he has to revert the license to the state through the ANA. Water permits for the use of an undefined amount of variable water in times of water surplus or for the use of a defined amount of variable wastewater – emanating from filtrations - are also issued without time-limit by the ANA. An authorization for water use has a limited duration (of maximum 2 years) and is issued to cover the necessities of water resources derived or elated to the following activities: Execution of studies, execution of constructions or soil washing.

The Regulation of the New Water Law (Art. 79.3) specifies the administrative proceeding for obtaining a water license and states that it is necessary to conduct a study following the subsequent steps: (a) authorization of the execution of a hydrological exploitation study; (b) approval of the hydrological exploitation study; (c) authorization of the execution of construction work regarding the hydrological exploitation study; (d) water use license. However, the law does not specify from which size of the production entity it is obligatory to conduct such a hydrological study. Small-scale farmers often do not have the economic capacity to commission such a study.

In the valley where research for this report was conducted, we can observe an interesting emergence of new water managers and users in the last decade. With the initiation of the decentralization process and the transfer of all «Special Projects» along the coast to the regional level, the regional government gained importance in water issues. In the valley where research for this paper was conducted, the emerging biofuel boom led to the arrival new agro-exporting firms and as a direct consequence of the New Water Law, the «Consejo de Recursos Hídricos de la Cuenca (CRHC) was introduced in 2009.

### 3.1.3 *Forest*

In 2011 the «New Forestry and Wildlife Habitat Law» (Law Nr. 29763) was approved. The validity of this law depends upon the approval of its decree, which is currently in the process of prior consultation and should be enacted shortly. The law prohibits a change in the use of land, which has the potential of forestry use and land which is protected – with or without forest cover (GFLAC 2014). The law establishes that in cases where a forest cover exists on land with an agricultural potential, the change in land use has to be realized with the conservation of at least 30 percent of the existent forest cover:

«In all the cases, in each plot or productive entity a minimum of thirty percent of the existent forest cover in land with agricultural potential is conserved, alongside the obligation to preserve the riparian or vegetation and special species.» (Ley Forestal y de Fauna Silvestre, Ley No. 29763 (2011)).

Even though this law has not affected the two biofuel investors studied for this report, it is likely that with the approval of the decree, future investments in the Chira Valley will have to commit themselves to conservation measures.

#### 3.1.4 *Joint titulation of land between men and women*

With funding of the Inter-American Development Bank (IADB), Peru started an ambitious land titling project in 1996, resulting in the titulation of more than 1.5 million of plots in less than a decade. According to the marriage regime of the Peruvian civil code all assets acquired during marriage or cohabitation are the joint property of the man and the women. The assets inherited or inter-vivo transferred from the parents form an important exception, as they represent the individual property of the heir. However, due to some regulations included in the new land titling law, land has to be jointly titled between a man and a woman who share their life in a nuclear family. Thus, the joint titling requirement had the effect of a gender-equalizing reform, as the parents tend to inherit their land to the sons more than daughters. Individual property rights were not respected by the land titling entity, both women and men became equal owners of the land, independent of the previous land tenure. Calculation based on the land cataster suggest, that nowadays 57 percent of the 1.5 million of title agricultural plots are owned jointly between women and men. This represents a substantial progress when compared to the data of 2000, indicating that only 13 percent of the plots are joint property between men and women. (Wiig 2013).

Regarding the impact of the co-titulation of land, Alvarado Merino (2004) comes to a rather pessimistic conclusion, asserting that the formal property of land has not resulted in a real equality in the distribution of economic goods between men and women. Based on a case study in the Bajo Piura region, she argues that even though land property may appear as shared in official documents, the one working the land is the man. The study does not demonstrate a positive relationship between property and control of a resource. Besides, the exclusion of women from the control of resources also deprives them of the possibility to actively participate in irrigation committees, where access is not determined by formal requirements, but legitimated by masculine instruments of legitimation, as agricultural know-how and more sublime elements, like the separation of public and private spaces. (Alvarado Merino 2004). Deere & Leon (2003) also point to the rules of membership in peasant communities, where the membership in assemblies is usually restricted to one person per household – the household head – resulting in only men having the right to voice and vote on topics such as future allocation of land within the community. Similarly, in Piura women continue to be excluded from decision-making bodies such as the irrigation committees because only the first name on the property titles is assigned the right to participate in the assemblies, which generally is the name of the husband (Alvarado Merino 2004). Less pessimistic conclusions are drawn by Wiig (2013), whose analysis of 1'280 households in the Peruvian highlands shows that joint titulation had a significant empowerment effect, particularly in decision-making around agricultural and land-related investment topics. Otherwise he also warns of a possible reversibility of the achievements of the joint titling initiative, as most of the interviewed parents indicated that they prefer to transfer their land to sons rather than daughters. (Wiig 2013).

### 3.1.5 Labor

In the year 2000 the «Law of Agrarian Promotion» (Ley No. 27360), which regulates the agrarian labor rights in Peru, was enacted. Initially the law 27360 should have been in force until December 2010, but its validity period was extended in 2006 until the end of 2021. All natural persons or corporate entities cultivating land or breeding animals – with the exception of the forest industry – come within the field of application of this law. Also included are natural persons or corporate entities that are involved in agro-industrial activities, as long as they mainly use agricultural products. (Campos 2014). Compared to the common labor regime in Peru, this law recognizes lesser rights labor rights when it comes to working hours, salary, holidays, gratifications, compensation for period of service, protection against arbitrary dismissal and health insurance:

	<b>Common Regime</b>	<b>Law No. 27360</b>
Working hours	Max. 8 hours per day or 48 hours a week	Working hours are cumulative; overtime is only paid when it exceeds (in average) the maximum limits established by the law.
Salary	Salary not below the minimum wage. Besides, compensation for the period of service (CTS) and gratifications.	Salary no below the minimum wage, but already including the gratifications and the compensation for the period of service (CTS).
Holidays	Paid holidays of thirty (30) calendar days per year of service	Paid holidays of fifteen (15) calendar days per year of service.
Gratifications	Two gratifications per year: one in July and another in December; the amount corresponds in both cases to the monthly salary corresponding to the worker at the moment of the payment.	Both gratifications are included in the daily salary of the worker.
Compensation for period of service (CTS)	The employer deposits as many monthly shares of the remuneration obtained by the worker, as months he has been working.	CTS is included in the daily salary.
Protection against arbitrary dismissal	The worker is paid 45 days (1.5 monthly salary) for each year of service, with a maximum of 360 daily salaries.	The worker is paid 15 days (0.5 monthly salary) for each year of service, with a maximum of 180 daily salaries.
Health insurance	The contribution to EsSalud corresponds to 9%	The contribution to the «Seguro de Salud Agrario» corresponds to 4%

Table 1: Comparison between the common labor regime and the Law No. 27360 (adapted from Gamero Requena 2011)

The «Law of Agrarian Promotion» was introduced in 2000 by the then agrarian minister José Chlimper – an influential agro-export entrepreneur of the Ica valley at the time - with the goal of supporting the emerging agroindustry by minimizing labor costs. For the workers the implementation of this new agrarian labor rights regime meant that working conditions became much more instable, there was a so-called «flexibilization» of the employer-employee relationship. Besides, the employers' contribution to social security and health of his workforce was reduced. It is very likely that large-scale investors will make pressure for the temporal extension of the law in 2021, probably with success. (Eguren 2015).

### 3.1.6 Free Prior and Informed Consent (FPIC)

The convention No. 169 of the International Labor Organization (ILO) is the only legally binding international instrument, which deals specifically with the rights of indigenous and tribal peoples. To date the convention has been ratified by 20 countries, among them also Peru. In conjunction with LSLA there is especially one basic principle of the ILO convention 169 which gains importance: the right to consultation with the name *Free Prior and Informed Consent (FPIC)*. This principle shall ensure that projects and measures that directly affect indigenous and tribal peoples can only be executed when the affected population is previously consulted. Besides, the consultation process has to be conducted with the indigenous and tribal institutions or organizations that are truly representing the peoples in questions<sup>5</sup>. Even though the convention No. 169 of ILO has already entered into force in Peru in 1995, it is not until 2011 that the Peruvian legislation releases the Law 29785 on the «Rights of Indigenous and Tribal People to Previous Consultation» and in 2012 its decree D.S. 001-2012 (La Revista Agraria 2014a).

However, the implementation of the Law 29785 and its decree D.S. 001-2012 encounters difficulties, as it is disputed who the beneficiaries of this «right to consultation» are. The application of this law leads inevitably to the question of how to define «indigeneity». There is a lot of confusion in Peru around the term «indigenous», as the people do not self-define themselves as such. When asked, they state being «ashaninka», «awajun» or «comunero from Pueblo Nuevo de Colán» (in the case of being member of a campesino community). The quechua and aymara people usually define themselves through the organization of the campesino community, as this institution is the most representative for their community. However, the state does not want to recognize the «campesino communities» as indigenous and hence does not grant them the right to consultation. The Peruvian state has tactically recognized the indigenous status of the «campesino communities» through norms like the «General Law on Campesino Communities» in the 1980s, but with the current economic situation and the intensive exploitation of natural resources, it seems inappropriate to do so anymore. The proof can be found in the fact that there has been conducted no previous consultation – since the implementation of the law - in the Andean region on mining projects. (La Revista Agraria 2014b). In a consultation process before the implementation of the Law 29785, indigenous organizations criticized the wording of article 7 of the Law 29785, which defines criteria for the identification of indigenous and tribal people. According to the national organizations representing indigenous communities, the law limits the designation «indigenous» to direct descendants and people who conserve entirely their cultural elements, excluding not only the «rondas campesinas» but also the campesino communities along the coast (Gamboa & Snoeck 2012).

Another problem with the implementation of FPIC lies in the varying interpretation of the term «consent». Conservative forces tend to define the «C» in FPIC as nonbinding «consultation» instead of consent. (Franco 2014). Thus, even though a majority of the local population may speak out against the realization of a project, it can still be executed. This alienation of the term «consent» turns FPIC more and more into an optional standard like the «*Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security*». The latter does include «consultation and participation» as a principle of implementation (FAO 2012c).

---

<sup>5</sup> <http://www.ilo.org/indigenous/Conventions/no169/lang--en/index.htm>

### 3.1.7 *Free trade agreement*

The free trade agreement (FTA) with the United States was ratified by the Peruvian congress in June 2006. This decision quickly became attached to criticism, saying that the FTA would force Peru to adapt its legislation according to certain commitments arising out of the agreement. However, the parliament had already approved the FTA, so the state was obliged to fulfill the requested legislative changes. Consequently, the Peruvian congress approved the Law 29157, which granted extraordinary powers to the Executive Authority to reform its legislation within a period 180 days. In that lapse of time 99 legislative decrees were enacted, 26 of which were related to topics such as agriculture, the use of water and forestry resources as well campesino and native communities. (CEPES 2008). Different legislative decrees enacted in these 3 months had to be repealed or modified, as they endangered community ownership as well as the ownership of unused community land. Indigenous mobilizations gained ground during this time span between the enactment and the repeal of these legislative decrees and culminated in a brutal confrontation between police forces and indigenous people in the city of Bagua. The clash in the northern Peruvian rain forest led to more than 30 deaths. (Burneo 2011)

In February 2009 the FTA entered into force and what followed was a reform of a number of regulations. Thereunder the decree D.L.994 authorizing that uncultivated land is given to individuals with the purpose of realizing irrigated cultivation works – when previously the state was the executor of such works and only exceptionally would transfer such tasks to individuals - and D.L.1089 establishing an exceptional period of four months during which the Organ for the Formalization of Informal Ownership (COFOPRI) is in charge of clearing away barriers to ownership. The latter led to the exclusion of the then Ministry of Agriculture (MINAG) – who was normally tasked with the formalization of ownership – from this task. (Burneo 2011). After an evaluation of the 99 legislative decrees enacted by the parliament, Fernando Eguren – a renowned Peruvian sociologist – comes to the conclusion that the intention seems to have been to take advantage of the received adjudication to issue a wide array of norms with little or no relation to the TLC (CEPES 2008).

## 3.2 **Formal property rights**

### 3.2.1 *The State of «Property Rights Formalization» in Peru*

In Peru the legal framework for recognizing land rights is not limited to the individual level, but extends to communal rights. The land rights of peasant farming communities of the coast and the Andean region as well as native Amazonian indigenous communities are recognized and rules for the demarcations and titling of their territories have been established. Different laws (see law 24656, recognizing peasant farming communities; law 24657, regarding the demarcation and titling of community territories; law 26845, regarding land titling of peasant farming communities in coastal areas; law 22175, regarding native communities and development of the Amazon) contain regulations for the internal organization and representation of communities. Based on this laws approximately 70 percent of urban and rural areas received ownership titles. (Deininger et al. 2012).

However, due to the inexistence of a «property rights formalization» politics, the institution in charge of leading and executing the titulation of rural property – a process initiated in the 1970s – has changed frequently in the last four decades. In an initial stage, both functions - leading and executing – were in the hands of the national government, through the «Proyecto Especial de Titulación de Tierras y Catastro Rural (PETT)» and subsequently – since 2007 – in the hands of COFOPRI. In 2009 the

decentralization process – which has been initiated in 2003 - resulted in the transfer of both functions to the regional governments. Eventually, due to inconsistencies, dilatoriness and weak operative capacities found at regional level, the process of titulation of rural property was given back to the central government (MINAGRI), while the execution of this politics is still in the hands of the regional governments. There are two main factors, which complicate the titulation progress regarding rural property. The first one is the lack of updated information about the total amount of rural property, which has been and still needs to be titulated. The other factor is the lacking congruence of the official data regarding the current state of the titulation of the land of campesinos communities and «comunidades nativas», even though COFOPRI, INEI and SUNARP are in possession of updated data. (Observatorio de Tierras 2014).

### 3.2.2 *Relevant legislation defining formal property rights*

During the neoliberal government of Alberto Fujimori in the 1990s, land policy in Peru was subject to major changes. The law D. S. 011 - 91 - AG enacted in 1991, permitted the indirect management, rental, free sale, and mortgage of land – all of which was prohibited during the agrarian reform. Similarly, the maximal size of uncultivated piece of land which could be managed through private investment was once again increased to 1000 ha. In the same year D.L. 653, the Law on the Promotion of Investments in the Agricultural Sector was introduced. This law authorized corporations to own land and enabled the transfer of abandoned lands to the state. Through this regulation it was made possible for the state to annex land of campesino communities, which lie fallow before being cultivated anew due to a rotating cultivation system. With the new constitution of 1993 this liberalization of land policies was pushed further, making it possible to sell land of the campesino communities. While the constitution of 1979 (as well as the previous ones of 1920 and 1933) protected the land of campesino communities from being transferred, mortgaged, or lapsed, the constitution of 1993 gave the communities complete autonomy regarding the sale or rental of their land to third parties. Finally, the law 26505 on the Promotion of Investment in Economic Activities on Lands in National Territory and in Campesino Communities enacted in 1995, removed all limits to the size of land ownership. This period of intense land reform came hand - in - hand with a renewed interest in the natural resources of the country on the part of national and international investors (Burneo 2011). The state also agreed upon new regulations regarding the campesino communities of the coast, as they were and still are in possession of large land surfaces which could potentially increase in value with the permanent access to water provided by large irrigation projects. Thus, these land reserves were – in contrast to the vast expanses of pastures of the campesino communities in the mountains - of interest for investors to cultivate export products. Accordingly, the Peruvian government has approved in July 1997 the Law on Titulation of Campesino Communities along the Coast, which established that for coastal lands a decision-making process involving half of the members of a community suffices to vote in favor of an individual allocation of the lands. This law established a difference between coastal communities and those of the rest of the country and introduced the notion of «abandoned land» for communal land not being cultivated. (Eguren 2004).

The agrarian policies of the current presidency of Ollanta Humala have carried on what previous governments have marked out. Agrarian policies have basically focused on farmers that have the possibility to access credits and technified irrigation programs, neglecting programs and policies to the benefit of the poorest sectors of the rural population. In early 2012 president Humala assigned the

then minister of agriculture, to prepare a legislative proposition to establish limits to land property. The initial idea of democratizing land property however never substantiated, as the ministry of agriculture never managed to present the legislative proposition to the council of ministers for the subsequent transmission to the parliament. (Monge 2013). Since mid-June 2015, a draft legislation establishing limits for the maximal extension of agricultural land property, is awaiting its approbation in the agrarian commission of the congress. The draft law determines the maximal size of irrigated land as follows: 10'000 hectares along the coast, 5'000 hectares in the Sierra and 20'000 hectares in the Amazonian lowlands. It may be added that these parameters are not applicable for example to drylands, making it possible to concentrate these land surfaces in an even larger extent. Yet, even if this law was approved, many of the large estate owners in Peru would not be affected, as the principle of non-retroactivity of norms would except them from the application of the law and protect them from future competitors. (CEPES 2015).

### 3.2.3 *Information about cadaster and register of deed, use and transfer rights (incl. inheritance)*

One major obstacle regarding the individual as well as the communal land titulation in Peru, is the absence of an integrated cadastral land register. Due to this missing graphic instrument - which enables the visualization of the perimeter of a property as well as its possible overlaps with other land parcels - around 61.5 percent of the campesino communities and 93.3 percent of the native communities (according to the communal land data registered by COFOPRI in 2010) cannot accredit credibly their rights, as they are not in possession of a graphic document or a geotagged parcel. (Observatorio de Tierras 2014).

## 3.3 **Relevant customary institutions in connection with the food system**

The nature of collectivity of agrarian, indigenous and «mestizo» communities has changed substantially in the course of time. Before the conquest there were the so-called «ayllus», indigenous communities based on kinship, which were transformed into indigenous-mestizo groups made up of the political pact concluded during the Spanish colony. After independence the republican state conferred jurisdictional rights to these communities and imposed a government structure («cabildo de indios»), which was adopted by them and later assimilated as an own structure. Later so-called «colectivos sociales» evolved out of a common interest in residence and common defense of a territory as property. These entities consisted – corresponding to a norm of the state - of a General Assembly and of an elected governing directive. Since 1970 this kind of community organization is called «comunidad campesina». (FAO Gender Land Rights Database 2015). These «comunidades campesinas» assume the existence of (a) a communal territory - used familiarly and collectively; (b) a group of families which consider themselves its members/ proprietors; (c) a body of leaders, who are in charge of internal social regulation as well as external representation; (d) other neighboring communities which interact with each other; and, (f) a state which recognizes these «comunidades campesinas», grants them legitimacy and regulates some norms and functions. These general similarities hide the large diversity of campesino communities that can be encountered across the national territory. The differences among them can be attributed to historical reasons, geographic spread, population, indigenous identity, type of organization, etc. While the campesino communities of the Sierra are characterized by the tension between modernity and tradition, high percentages of rural outmigration, integrated auto-defense committees or support by «rondas campesinas», the campesino communities of Piura feature an increasing urbanization in their area of influence as well as a constant temptation towards parceling. (Diez 2006).

In the context of recent land rights struggles of national campesino committees, a wrong «indigenist» assumption emerged, suggesting that land tenure inside campesino communities is traditionally communal (Remy 2014b). Yet, even though property is legally collective and the land mutually belongs to the members of the campesino community, there are different types of ownership inside the territory of the community. There can be found forms of almost private familiar appropriation with intensive use (vegetable gardens and irrigated parcels), land under limited communal control (fallow land and rotation of cultivation, regulated by the community or not) and land used collectively by all «comuneros» (pasture land). Thus, familiar and collective rights coexist under constant tension: while expansion and increasing demand of parcels pushes into familiar tenure, threats against communal property and the use of some resources which is enforcedly communal (e.g. irrigation water) pushes into collective tenure. (Diez 2006). However, these collective properties of campesino communities are often not formalized, meaning that they are legally not recognized as such. Even though the Peruvian state enacted the Law 24657 on «demarcation and titulation of communal territory» in 1987 - in order to facilitate the formalization of communal ownership – there still are communities without titles. Of the 6'069 campesino communities recognized by the Peruvian state until 2010, 959 (15.8%) are still not titled. And when having a closer look at the 5'110 already titled campesino communities, the statistics reveal that 61.5 percent are not georeferenced, meaning that the location and extension of their land does not form part of any geographic information system (GIS). Without land titles respectively georeferenced cadastral maps, the property of campesino communities remains an insecure right. (CEPES 2013b).

All campesino communities recognized by the Peruvian state have a governing directive, which is elected every two years and consists of different appointments (e.g. president, secretary, treasurer). According to the national law and different norms, practices and customary rules, campesino communities perform different duties and functions inside of their territory as the control and allocation of resources (e.g. water, pastures, land and other goods), vigilance and protection from third parties, judicial administration and regulation of conflicts among its members as well as representation of the entity in front of external agents. (Diez 2006).

## **4. General description of the two case studies**

### **4.1 “Issue at stake”**

The Peruvian coast is very mild and humid due to the presence of the Humboldt Current, which runs along the coast from the Antarctic until Ecuador. Because of the cold water stream there is no evaporation of warm water, resulting in an arid coastal strap with precipitations of maximum 50 mm per year. Due to this extreme aridity, agriculture along the Peruvian coast depends almost entirely on irrigation. Peru has built different superficial water reservoirs since the 1950s, basically to increase the availability of water along the coast for large irrigation projects, reaching a total storage volume of 2'845 millions of cubic meters (Vogel 2007). The hydraulic infrastructure of the Chira Valley was built through the «Proyecto Especial Chira Piura» (PECHP), an integrated irrigation system, which is based on the hydraulic union of the rivers Chira and Piura and is regulated by the Poechos reservoir. This integrated system for the efficient water use from both watersheds was initiated 1970 with a decree, the implementation followed in three stages. In the third stage the following canals were built, which are crucial for the irrigation of the Río Chira valley: Canal Miguel Checa, Canal Norte and Canal Sur. It

is from these canals that most of the different water users of the valley derive their water for agricultural use. Shortly after the completion of these canals and the approval of the «Law on Promotion of the Biofuel Market» (see chapter 3.1.1) in 2003, a special committee assigned with the promotion of private investment in the region of Piura, was launched (Urteaga 2013). The PECHP was subsequently designated as responsible entity for the sale of state land in the Chira Valley to foreign and national investors. According to PECHP there are three different modalities for the sale of land to investors: (a) direct sale, (b) public auction, (c) private initiative. In the case of Caña Brava the land was sold in the context of a public auction and in the case of Maple it was a private initiative from the investor himself. During the public auction, land was sold to the sugar cane investors for a price between 60 (Maple Etanol S.R.L.) and 140 dollars per hectare (Caña Brava).

**4.2 Description of the spatial and temporal boundaries of the two case studies**

Field work for this report was conducted in the lowlands of the Chira river basin, between the city of Sullana and the Pacific Ocean (see figure 2). In the map of the research area you see the different land acquisition by large-scale biofuel investors in the valley in yellow. In green you see the area under cultivation of by small- and medium scale farmers. To the west the Pacific Ocean and to the east the closest city: Sullana. There are a total of three biofuel investors that have established themselves in the valley: Caña Brava (ca. 10'531 has), Maple Etanol S.R.L. (ca. 13'000 has) and COMISA (ca. 20'000 has). However, COMISA has not yet been granted a water license, and has accordingly not been able to start operations (Burneo 2011). The following presentation of results will focus on the domestic investor Caña Brava (CB) and the transnational investor Maple (see chapter 4.4 for a more detailed description of the two investors).

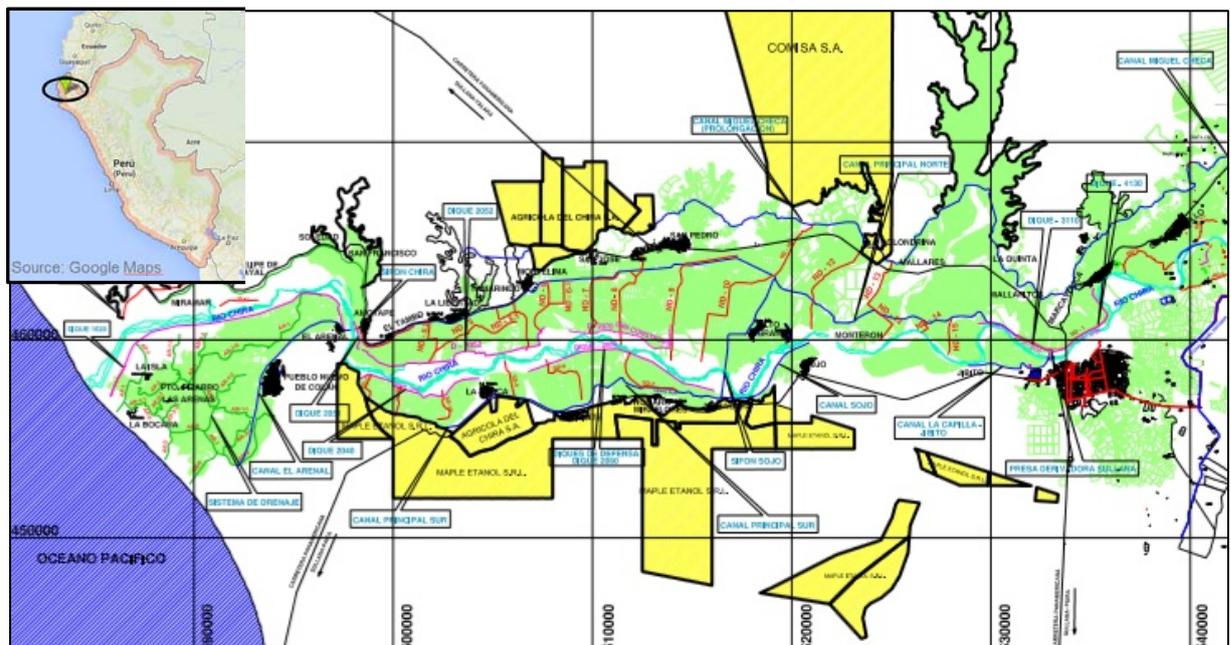


Figure 2: Large-Scale Land Acquisitions by the investors Agrícola del Chira S.A. (Caña Brava), Maple Etanol S.R.L. and COMISA (source: PECHP)

Caña Brava – a company belonging to the Romero Group, one of the most influential economic groups in Peru - acquired ca. 10'531 hectares of land both at the left (province of Paita) and the right

hand side (province of Sullana) of the Chira River. The land is distributed over different plots in the districts of Ignacio Escudero, Tamarindo and Bellavista (Sullana) as well as La Huaca and El Arenal (Paita) and includes an ethanol production plant. Maple represents a US-American firm based in Dallas, which acquired 13'500 hectares of land in the lowlands of the Chira river basin (Pearce 2012). The purchased land is located in the higher parts of the left hand side of the Chira river (see figure 2) and the investment also includes an ethanol processing plant.

Fieldwork was conducted in the following districts along the left and right hand side of the Chira river, where people who lost land due to the investment and also most of the workers of CB and Maple live: El Arenal, La Huaca (Paita) and Miguel Checa, Ignacio Escudero (Sullana). The household interviews with contract farmers of CB were conducted in two districts further away of the plots of the investors: Colán (Paita) and Sullana (Sullana).

The following table summarizes the main events happened in conjunction with the installation of the two biofuel investments in the valley between 2006 and 2015. The table starts with the signing of the contract between the regional government and the investors, which in both cases took place in 2006. With the enclosure of the land by the biofuel investors in early 2007, different resistance activities developed. While Maple reacted with negotiation offers and decided to donate 842 hectares of land to the district of La Huaca for safeguarding future «urban expansion», Caña Brava opted for monetary compensation and job offers. The resistance activities culminated in a severe traffic accident caused by the illegal burning of sugar cane through CB, which was accompanied by strikes and unrest. Shortly thereafter, CB is forced to stop the illegal burning of sugar cane.

Year	Event
2006	Both Caña Brava and Maple Ethanol S.R.L. buy land in the Chira-Valley and sign a contract with the regional government
01/ 2007	Occupation of the land by the two biofuel investors
02–05/ 2007	Resistance activities due to the occupation of land through Caña Brava, land which was previously used by locals for cattle grazing and collecting firewood
05/ 2007	Division of the local community into two pretty evenly splits, because of the creation of employment and the compensation of certain actors groups (agricultural association «Santa Ana»), while the problems of other actor groups (cattle grazing association «Túpac Amaru») remained unresolved
07/ 2007	Assembly organized by Maple Ethanol S.R.L. to resolve the land conflicts created because the LSLA borders directly with the villages of the district. Afterwards Maple agrees to donate 842has of land to the district of La Huaca and to shift the sugar cane plantations to the higher parts of the valley.
06/ 2009 – 11/ 2012	Illegal burning of sugar cane through Caña Brava, leading to air pollution and ash production, affecting the surrounding communities
11/ 2012	Severe traffic accident on the road Sullana-Paita, caused by the ashes affecting the vision of the car drivers, leaving 5 dead persons. Locals react with protest marches and violent resistance activities (e.g. burning of a truck of Caña Brava). Thereafter the regional government, the public prosecution authority and the «Defensoría del Pueblo» react and Caña Brava is forced to stop the illegal burning of sugar cane.
2010 - 2012	Water infiltration on the land of the brick producer association «Yawar Huaca», triggered by the drip-irrigation of Caña Brava, leading to a rise of the groundwater level. A drainage canal is built to avoid a further rise of the water level, but problem still persists.

03/2015	Creditors of Maple Energy sell the property holdings of Maple Etanol and Maple Biofuel to the «Grupo Gloria»
---------	--

Table 2: Main events happened in conjunction with the biofuel investments in the valley (2006-2015)

While Caña Brava is continuing its operations until today, Maple incurred debts due to water scarcity. Entire sugar cane field fields dried out because it rained too little over several years. Besides, Maple had problems with the quality of the land, which partially was very rocky – compared with the land of CB, which is situated in the bottom of the valley, close to the water sources. A further problem was the drip-irrigation system and the burial of tubes, as the roots of the sugar cane compressed the tubes too much and blocked the water stream. Thus, creditors of Maple Energy sold the property holdings of Maple Etanol and Maple Biofuel to the «Grupo Gloria» (an influential economic group in Peru) in March 2015.

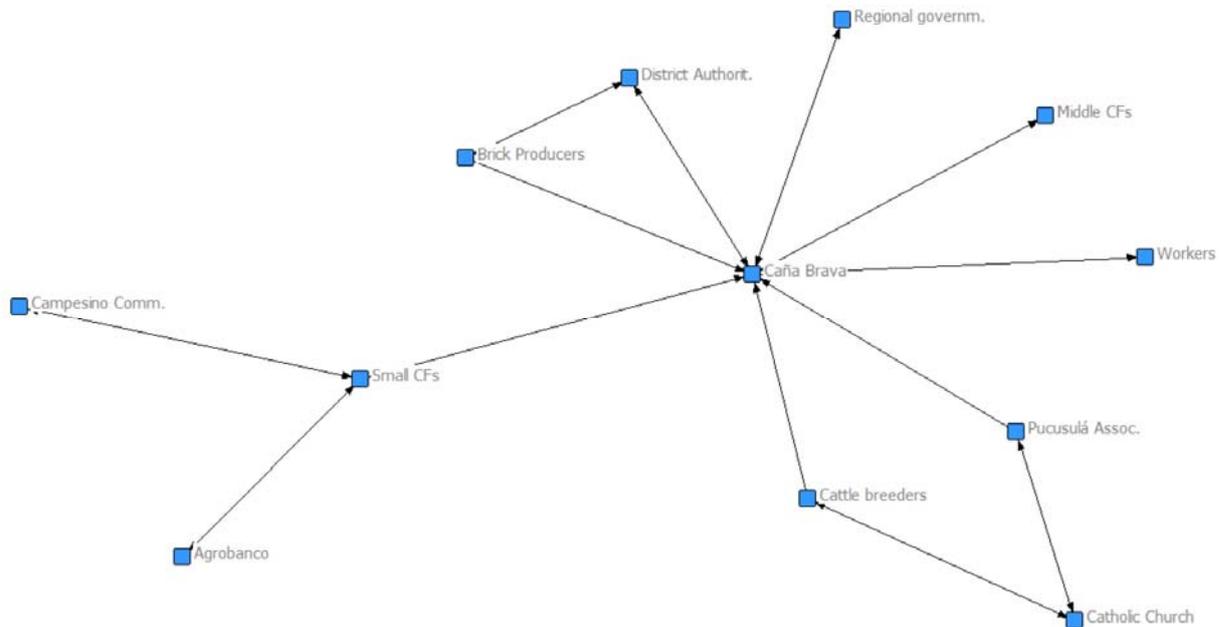
#### 4.3 Independent variable

The following institutions will be studied in connection with the food system:

- Law on Promotion of the Biofuel Market (Nr. 28054) of 2003
- New Water Law (Nr. 29338) of 2009
- New Forestry Law (Nr. 29763) of 2015
- New Land Titling Law (joint titulation of land between men and women)
- Law of Agrarian Promotion (Nr. 27360) of 2000
- Law on the Rights of Indigenous and Tribal People to Previous Consultation (Nr. 29785) of 2011 and its decree D.S. 001-2012 of 2012
- Free Trade Agreement (FTA) with the U.S. (2009) and resulting reforms
- Relevant legislation defining formal property rights
- Campesino Communities (customary institution)

#### 4.4 Intermediary variable: Actors of the food system and their organizations

In the chapter at hand the different actors of the food system as well as the relationships among them will be presented. For each investor a chart will be presented at the beginning, giving an overview of all the actors interacting with the investor. Subsequently, these relationships as well as the actors and their organization will be described with more detail. As the author's request for interviews was denied several times by the investors (just one interview with a staff member of the CSR department of Maple was made possible), the presented list of actors is not exhaustive and is based primarily on the interviews held with locals.



- Caña Brava:** Caña Brava belongs to the Peruvian Romero Group, one of the most influential economic groups of the country. Before the agrarian reform of 1969, the Romero Group owned large surfaces of land<sup>6</sup> in the Chira and Bajo Piura valleys. Nowadays the Romero Group operates the agribusiness firm Caña Brava in the Chira Valley, whose sugar cane plantation covers an area of 5'931 ha – distributed over different plots in the districts of Ignacio Escudero, Tamarindo, La Huaca, Bellavista and El Arenal - and includes an ethanol production plant. Approximately 4'600 has of land with possibilities of cultivation are still uncultivated. Before the arrival of Caña Brava the land was in public and private tenure. Approximately 3'200 has have been purchased in a public auction organized by the regional government of Piura, approximately 7'331 has have been bought from private land owners, thereunder producer associations and individual landholders owning between 1 and 10 ha of land. (FAO 2011; Agrícola del Chira y empresas subsidiarias 2009).
- Workers of Caña Brava:** In June 2014 Caña Brava employed 1'600 workers, whereof 1'460 were fieldworkers, 60 ethanol plant operators and 80 office staff. The cleaning staff is being hired through Adecco, one of the world's largest providers of HR solutions<sup>7</sup>. Most of the fieldworkers have temporary (written) contracts - as they are hired according to the current labor demand - which never exceed three months. The fieldworkers dedicate themselves to different activities like

<sup>6</sup> According to a study, the Romero Group owned 16 percent of the arable land in the Chira and Bajo Piura valley. However, when the region of Piura was declared as a «zone of agrarian reform» in October 1969, the expropriation of 104'093 hectares of land – which the Romero Group owned at the time through different haciendas in Piura – began. The group reacted with different measures to this new insecurities created by the military regime of Alvarado: (a) diversification of their commodity-producing activities, (b) integration towards common and specialized services, which are demanded by each of these industries, (c) acquisition of decisive influence in the private bank Banco de Crédito del Perú (BCP). The latter was achieved by occupying key positions in the bank, like the presidency of the directorate and the executive committee. (Reaño & Vásquez 1988).

<sup>7</sup> Cécibel Buitrón (CSR department Caña Brava), personal communication, 11.06.2014.

planting sugar cane (weeding, burying water pipes, cutting the sugar cane with machetes), irrigating the plantation, producing dung in laboratories, environmental monitoring and surveillance of the personnel and infrastructure of the enterprise. The communities surrounding the investment estimate that 80 percent of the total staff of CB comes from the same Chira Valley (especially the districts of Ignacio Escudero, La Huaca, Amotape and Tamarindo), 15 percent from the city of Sullana and 5 percent from the city of Piura. The field workers of Caña Brava are subject to the specific contents of the «Special Labor Regime of the Agrarian Sector» (see chapter 3.1.5).

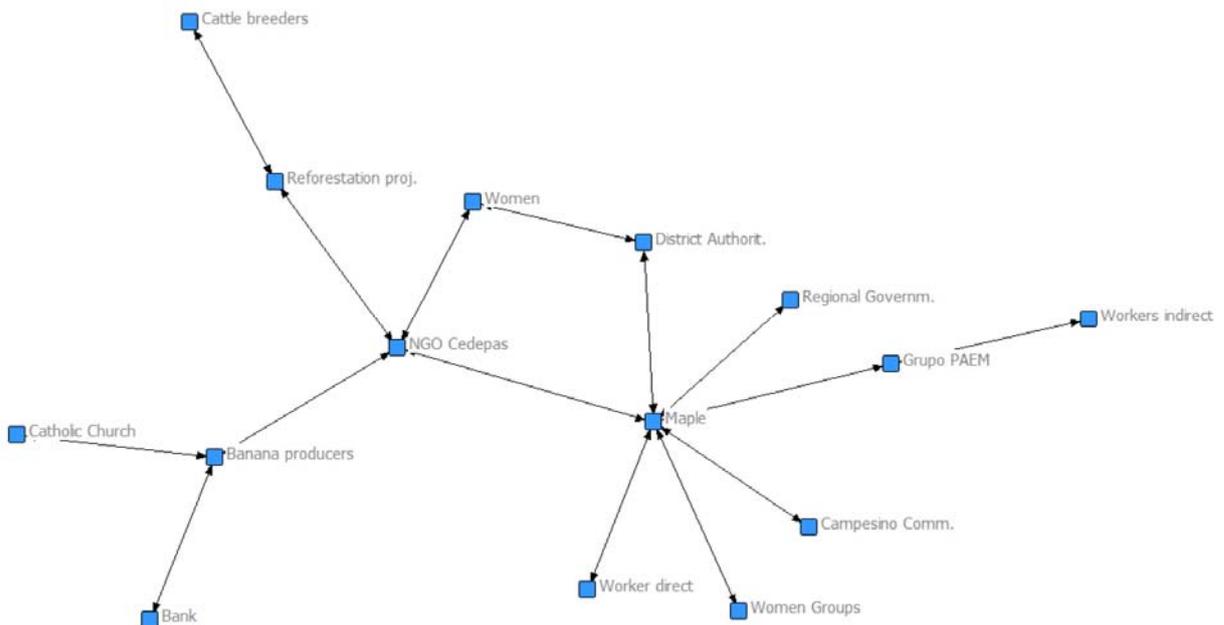
- **Contract farmers (CFs):** In 2010 Caña Brava has initiated a program for the inclusion of small-scale farmers in the value chain of the enterprise. Currently there are 60 contract farmers in the Chira Valley, who are under a sugar cane sale and purchase agreement with Caña Brava<sup>8</sup>. These contract farmers are spread over different areas of the valley, they can basically be found in the zones of Amotape, Pueblo Nuevo de Colán and San Vicente. The interviewed contract farmers come from the area of Pueblo Nuevo de Colán and San Vicente and own 9.56 ha on average. The contract farmers from the highlands of the valley (**Middle CFs**) are in possession of larger plots - 16.32 ha on average - than the contract farmers of the lowlands of the valley (**Small CFs**), which own land with an average size of 2.82 ha. The small CFs and the middle CFs are not in contact with each other and they are not organized in an association. The collaboration with CB is based on a bilateral contract between the investor and the contract farmer. As many of the small contract farmers did not have enough money to finance the sugar cane seeds, the preparation of their land, the agricultural inputs as well as workforce helping them during harvesting season, they took out a loan from **Agrobanco**. They agreed with the bank to pay the yearly installments in a 12-month rhythm. Besides, most of the interviewed small CFs are members of the **Campesino Community** San Lucas de Colán. When asked, they assured that the plantation of sugar cane on community land, does not conflict with the interests of the campesino community. In addition to the cultivation of sugar cane, almost all contract farmers dedicate themselves to the production of food crops and some cash crops (e.g. yam, manioc, beans, bananas, limes, mangos, passion fruit, etc.).
- **Brick producers:** According to a study conducted by the «Programa EELA», there exist 53 brickworks in the region where fieldwork for this study was conducted, 40 in the district of «La Huaca» and 13 in the district of «Ignacio Escudero». Along with the districts of «Morropón - Chulucanas» and «La Unión», «La Huaca» is one of the districts of Piura with the highest quantity of brickworks. (Programa EELA 2012). One of the brick producer associations limits with one of the parcels of Caña Brava and is affected by water infiltrations since 2009. The water has invaded the whole plot, destroying not only the ovens but also the clay necessary for the production of the bricks. A study developed by the local water organization, substantiates that the continuous irrigation of the sugar cane monoculture has led to an increase in the groundwater level, resulting in the infiltration of water in the surrounding terrain. A drainage canal was built to avoid a further rise of the water level, but problem still persists. Most of the brick producers had to look for a new plot for brick production and are now renting land for this purpose. They did not receive any compensation from CB. However, they have been supported by the **district authorities**.
- **Pucusulá Association:** Of the 1'170 hectares Caña Brava acquired from private land owners, a part originates from smallholders of two small villages located very closely to the sugarcane

---

<sup>8</sup> Cécibel Buitrón (CSR department Caña Brava), personal communication, 11.06.2014.

plantations (the agricultural association of Pucusulá). However, these small-scale farmers did not sell their land voluntarily. Different interviews indicate that a large part of the residents of these villages have lost a total of 80.5 hectares of land to Caña Brava due to debts they had with a private person. Some years ago the villagers took a credit, but they could not repay the loans due to a devastating Niño phenomenon in 1998, which destroyed large part of their harvest. Thereafter, the money lender decided to sell the land to another private person, who in turn sold it to the Romero Group. However, the smallholders were not aware of their land title being in hands of Caña Brava and the occupation of their land in 2006 led to violent confrontations with the police. Some farmers have accepted monetary compensations and job offers from CB, others have still not given up, even though their land forms part of the sugar cane plantation since many years. They have been supported in their struggle by the **Catholic Church**.

- **Cattle breeders:** Before the arrival of CB, the acquired land surrounding the villages was used for different purposes like cattle grazing, firewood and algarrobo fruit collection. With the enclosure of this common land by CB, a conflict with the cattle breeding association «Tupac Amaru» emerged, whose land was not titled at the time. They have been supported in their struggle by the **Catholic Church**.



- **Maple Ethanol S.R.L.:** Maple represented a US-American firm based in Dallas, which acquired 13'500 hectares of land in the lower Chira Valley (Pearce 2012). The company purchased 10'684 hectares of uncultivated land with water rights for the cultivation of sugar cane for ethanol and for the construction of a processing plant from the regional government. This leads us to assume that almost 3'000 hectares of land were bought from producer associations or individual landholders. (Burneo 2011). Maple started operations by beginning to harvest and process the sugar cane at the end of March 2012. In June 2014 Maple employed between 700 and 800 persons, whereof approximately 65 percent came from the zone of influence of the enterprise (districts of La Huaca,

El Arenal, Pueblo Nuevo de Colán, Amotape, Tamarindo, Vichayal). The workers employed directly by Maple (**worker direct**), were subject to the common labor regime and not the «Special Labor Regime of the Agrarian Sector» (see chapter 3.1.5). The workers had temporary contracts varying between 3 and 12 months, when exceeding five years of employment the workers were eligible for a permanent contract (according to the Peruvian legislation). Besides, Maple hired between 200 and 300 fieldworkers through a subcontractor (**Grupo PAEM**), according to the field labor demand<sup>9</sup> at that time. These «externally» hired workers (**workers indirect**) had temporary contracts and a lower monthly salary. Maple paid the regional government of Piura (**Regional Governm.**) a yearly amount of 500'000 dollars between 2011 and 2014. This money should have been invested – according to the contract – in the area of influence of the investment. Besides, Maple also paid taxes to the district municipality. Maple also supported different social initiatives in the district of La Huaca, which benefitted women. For example the **women group** «mujeres emprendedoras» received prize money from Maple after presenting their project in a competition, which enabled them to buy a new sewing machine. The eight women that participate in this project produce clothes and are in the meantime also supported by the district municipality. Maple also gave financial support to the project «cleaning of public places» at district level, where mostly poor **women** are employed for a time period of 1-3 months. Through the **NGO Cedepas** (see below), Maple supported different organic banana producer associations in the lowlands of the Chira valley. Maple was also involved in a territorial dispute with the **Campesino Community** of San Lucas de Colán regarding 1000 hectares of the campesino community, who were inside of the perimeter sold to Maple by the regional government. However, the investor and the campesino community have come to an agreement in this respect (see chapter 5.2.2).

- **NGO CEDEPAS Norte:** Between March 2012 and December 2014 CEDEPAS Norte supported 70 percent of the organic banana producers in the lower Chira Valley in cooperation with Maple, Misión Castilla, Fondo Empleo, APOQ and Empresa Fair Trasa. They managed to found 7 new banana producer associations/ cooperatives and to support them with different measures. These associations/ cooperatives are distributed over the whole lower Chira Valley and comprise 350 banana producers or 351 hectares of banana plantations. CEDEPAS Norte decided to support the organic banana production because the main sponsor (Fondo Empleo) supports commodity chains with a large job creation potential and that increase the household income substantially. Furthermore, there is a large demand for organic bananas at global level and the region of Piura has a great potential for the expansion of banana production due to the favorable climatic and credit conditions. Besides, CEDEPAS Norte also supported a local reforestation project on behalf of Maple<sup>10</sup>. Three persons of the local cattle grazing association are employed to take care of the trees.

---

<sup>9</sup> José Cueva (CSR department Maple), personal communication, xxx

<sup>10</sup> According to a «Natural Habitat Compensation and Management Plan» - designed for the implementation of habitat enrichment measures within the project and surrounding areas, including preservation and reforestation – Maple has to conserve at least 2'341 hectares in natural dry forest ecosystems. This reforestation program shall be done with support of the (local) community. (Roundtable for Sustainable Biofuels 2013).

## 4.5 Dependent variable: Description of the local food system

### 4.5.1 Food Production

The two most important crops of the valley are rice and banana, whereat the rice is mostly consumed at local level and bananas are mostly exported. Bananas are produced all the months of the year, while rice is harvested twice, once in January/ February and the second time in August/ September. Other important crops comprise sweet potato, maize, red onion, manioc, beans, «menestras», chia, carob, tamarind, water melons and papaya. Besides, many locals also breed animals at home like goats, sheeps, pigs, poultry and guinea pigs.

The plantation of crops is dominated by men, who are usually the «owners» of the land and represent the family in agricultural associations. Women and children may help out during harvesting season, but in most of the cases temporary staff is hired to support the harvest. In the following table you see the share of men and women of the total number of landowners in the six districts of the valley where field work was conducted. With a share of 7.4 until 20.6 percent of total landowners, women are clearly underrepresented when it comes to landownership.

District	Men	Women	Total	% of Men	% of Women
Arenal (Paita)	25	2	27	92.6	7.4
Colán (Paita)	1'435	190	1'625	88.3	11.7
I. Escudero (Sullana)	1'732	300	2'032	85.2	14.8
La Huaca (Paita)	880	229	1'109	79.4	20.6
Miguel Checa (Sullana)	408	53	461	88.5	11.5
Sullana (Sullana)	3'128	709	3'837	81.5	18.5

Table 3: Share of men and women of the total number of landowners in the districts Arenal, Colán, Ignacio Escudero, La Huaca, Miguel Checa and Sullana. Own elaboration (source: INEI)

Local women and men also use the «tierras eriazas»<sup>11</sup> surrounding the villages - which they consider common land - for different purposes like cattle grazing, firewood, algarrobo fruit and reed collection. Before the advent of the biofuel production in the valley, residents also used to cultivate this common land surrounding the villages during rainy season. As one male resident reports:

«[The enclosed land] was from the state, or more precisely, from the people. We were peasants during rainy season and cultivated the land with sorghum, cotton, watermelons, and food crops. We cultivated when there was a rainy period, but we never made an application [for the titulation of the land].»

During rainy season (especially during so-called «El Niño» phenomenons) the common land lying in the upper parts of the valley represented an alternative to the inundated lower parts of the valley lying

---

<sup>11</sup> The Peruvian legislation considers land as «eriazos», when it cannot be cultivated due to water surplus or water scarcity, thus investments are needed to transform this land into arable land. Article 24 of the legislative decree 653 defines the «tierras eriazas» and mentions as examples the meadows with natural pastures, protected land and land that forms part of the archaeological patrimony. See also law 26505 or Law on the Promotion of Investment in Economic Activities on Lands in National Territory and of Native and Campesino Communities enacted in 1995.

close to the river. As it was freely accessible and nobody showed interest in it, people did not care about titulating it.

#### 4.5.2 *Food Processing*

Most of the produced food crops are sold to intermediary traders and processed elsewhere. However, there exist some processing plants in the valley, like a rice processing plant in La Huaca, a banana processing plant in Macacar and larger fish processing plants in the city of Paita. People also use to process maize at home and produce «chicha de jora» out of it. Some families recollect «algarrobos» to produce «algarrobina» (a Peruvian licor).

#### 4.5.3 *Food Distribution*

The food is transported by trucks along the principal roads of the valley. Most of the small-scale farmers sell their products to intermediary traders, who transport the food to the nearest seaport in «Paita» for exportation or to the market of the nearest city «Sullana».

#### 4.5.4 *Food Consumption*

There can be found a lot of small local markets in the different villages of the lower Chira Valley, nevertheless a majority of the population travels once per week to Sullana and once per month to Paita to visit markets with a broader supply of products and cheaper prices. With the arrival of large supermarket chains like «Plaza Vea» or «Tottus» in Sullana and Paita, the diversity of available food items has increased. Some people started to buy food in this large supermarket chains due to the higher hygiene standards, the higher diversity of products and higher safety standards (compared to the markets in cities like Sullana and Paita). As de Schutter (2013) has already argued, women – in most developing countries – are in charge of household food security. This is also true for the Lower Chira Valley, where local women are in charge of household food preparation. They start very early in the morning with the preparation of breakfast for husband and children, continue around 10am with the preparation of lunch and sometimes even cook a dinner in the evening. Besides, many women have a small business, which consists of the sale of domestically produced food. Some use to prepare juices and soya milk at home and sell it on the streets and to local schools. Others produce «chicha de jora» and sell it in the neighborhood or in a local bar and some women even have their own restaurant and work there as chefs.

#### 4.5.5 *Differences between the lower (Caña Brava) and the lower-middle (Maple) Chira Valley*

According to a food system workshop conducted in March 2015 in the district of La Huaca, there are some differences between the food system of the lower part of the valley (rather area of influence of Caña Brava) and the one of the lower-middle part of the valley (rather area of influence of Maple). In the lower part of the valley the diversity of produced crops is higher, because this zone has received more investments in the hydraulic infrastructure and the rice and banana production is less strongly concentrated in the hands of external large investors. On the other hand, people in the lower-middle part of the valley seem to consume a greater diversity of products, which may be associated with the proximity of this area to the city of Sullana.

#### 4.6 Documentation of available data

The data for this report has been collected between March 2014 and May 2015 in the districts El Arenal, Colán, Ignacio Escudero, La Huaca, Miguel Checa and Sullana of the Lower Chira Valley. 30 household interviews were conducted with households affected by the investment of Caña Brava (workers, contract farmers, people who lost access to land) and another 30 household interviews with people affected by the investment of Maple (workers, beneficiaries, people who lost access to land). The table below gives an overview of the number of interviews conducted per actor category with women respectively men alone and with the female and male household members together respectively separately (see table 4). Whenever possible, attempts were made to interview a male and female household member together. Yet, in some cases this was not possible because the husband respectively the wife passed away, was sick, migrated to another part of the country or refused to participate in the interview. In many cases women did not participate sufficiently in the household interviews conducted together with their partner, in these cases women were interviewed separately at a later time (category «female and male HH members separately»).

Actor category	Number of conducted household interviews				Total
	Only with male HH member	Only with female HH member	Both female and male HH members together	Female and male HH members separately	
Workers (CB)	4	-	7	-	11
Contract farmers (CB)	6	1	3	-	10
People who lost access to land <sup>12</sup> (CB)	2	2	2	3	9
Workers (Maple)	4	-	5	1	10
Beneficiaries <sup>13</sup> (Maple)	1	2	5	3	11
People who lost access to land <sup>14</sup> (Maple)	3	1	4	1	9

Table 4: Number and sort of interview (only with male member of HH/ only with female member of HH/ both female and male member of HH together/ female and male member separately) conducted per actor group

Data collection also included the organization of three workshops applying Participatory Rural Appraisal (PRA). Besides, the author has also conducted 29 expert interviews with presidents of agricultural and artisan associations, religious authorities, NGO representatives as well as provincial and regional authorities.

---

<sup>12</sup> Includes brick fabricators of the association «Yawar Huaca», members of the agricultural association of Pucusulá and members of the cattle grazing association «Túpac Amaru»

<sup>13</sup> Includes banana producers, a local welder and a local museum curator

<sup>14</sup> Includes members of a cattle grazing association of Macacará, extensive land users of Miraflores and peasants of the district of El Arenal

## 5. Analysis of the different phases of the LSLA process and of its impacts

### 5.1 t<sub>-1</sub> situation

#### 5.1.1 Organization of the food system

Before the installation of the sugar cane plantations, the principal crops produced in the lowlands of the Chira Valley were rice, organic banana, lime and yellow maize (Cabrejos Vásquez 2011). Given the lack of rain water along the Peruvian Coast, the access to irrigation is crucial, not only for the extent of the cultivated area, but also for the types of crops the small-scale farmer is able to produce. With the expansion of the hydraulic infrastructure and the finishing of the «Canal Miguel Checa», «Canal Norte» and «Canal Sur», small-scale farmers could start irrigating their fields by gravity, instead of the slower and more expensive pump irrigation system. The new hydraulic infrastructure improved the performance of small-scale agriculture considerably.

Before the advent of biofuel production in the valley, local women and men used the «tierras eriazas» surrounding the villages for different activities such as cattle grazing, firewood, algarrobo fruit and reed collection. During rainy season they also used this common land for the cultivation of crops. Five cattle grazing associations of the lowlands of the Chira Valley are officially registered, they have either beef or goat cattle. Their milk production is sold at local markets or to the municipal «glass of milk» programs, with which they have signed trade agreements. However, since the agrarian reform the cattle sector is treated like a complementary economic activity for small producers and the authorities. (Cabrejos Vasquez 2011). Thus, the possession of livestock rather represents a form of insurance to households, which can be sold in difficult time to obtain food supplies and buy seeds for the planting sector (Oft 2010).

Along with these agricultural activities, brick production is also an important income generating activity in the case study area. There are 53 brickworks in the area where fieldwork was conducted and the material used to fire the bricks in the ovens, derives mainly from algarrobo and mango trees gathered from common land (Programa EELA 2012). Most of the brick producers are organized in associations or cooperatives. The «Cooperative la Chira» in La Huaca - which we had a closer look at - comprises 50 ovens and gives employment to approximately 250 persons, as every owner employs approximately four day laborers. Most of the members of the associations or cooperatives are men, the few women who participate in the assemblies are main owners or tenants of their land. The wives of the male members do not participate in the assemblies, even though they may work as much in the brickworks as their partners. One of the villages in the case study area – Viviate - is also famous for its production of reed mats, which poor Peruvians use as material to build their houses. Most of the families in this village dedicate themselves to the production of these mats – along with other income generating activities - produced out of reed they collect on common land. They organize themselves in associations to transport the reed maps once per week with a camion to Piura, to sell their product. Furthermore, large part of the local population – both women and men – casually works in the nearest seaport «Paita» in the fishing industry, in the area of fish processing, as cleaners, filleters, labeler, etc. (Afonso Undabarrena 2007). Some people also have casual jobs in the agricultural and construction sectors.

The lowlands of the Chira Valley not only consist of the agricultural land of the provinces of Sullana and Paita, but also of the so-called «tierras eriazas» or dry forest land. Some of this land is freely

accessible and is used – as described above – by locals for different activities like cattle grazing, firewood, algarrobo fruit and reed collection. Yet, a part of this dry forest land forms part of the campesino communities of the lower Chira Valley, namely Amotape, San Lucas de Colán, Tamarindo and Miramar – Vichayal. In the context of this study, the campesino community San Lucas de Colán is of interest, as part of its territory was inside of the perimeter sold to Maple Ethanol and because a considerable part of the contract farmers of Caña Brava are members of this campesino community. In the course of the 20<sup>th</sup> century the campesino community of Colán has lost thousands of hectares of land through different forms of dispossession: first through the expansion of the haciendas and more recently through expropriations realized by the state for megaprojects (see chapter 3.3), through extrajudicial activities of certain Peruvian business groups that managed to register campesino community land as their own or through subnational instances, as in the case of Maple Ethanol S.R.L., where the land was sold by the «Proyecto Especial Chira-Piura» with the approval of the regional government. (Burneo 2013). We will have a closer look at the impacts of the biofuel investment of Maple on the campesino community of Colán as well as the resistance/ negotiation strategies of the community in chapter 5.2.

#### 5.1.2 *Actor constellation and actors' strategies*

The main actors in the food system are on the one hand the agricultural associations, whereof the organic banana producer associations are the most prominent ones (see chapter 5.1.3). The latter have established themselves in the fair trade sector, while the more conventional agricultural associations receive counselling and training from the «Programa de Capacitación y Asistencia Técnica» (PROCAT) and NGOs such as CEDEPAS Norte, CIPCA, CEPESER, Plan International, etc. (Cabrejos Vasquez 2011). There can also be found different cattle grazing associations, which use the freely accessible dry forest surrounding the villages as grazing land. They produce for the local market and sometimes have trade agreements with the municipal «glass of milk» programs. Besides, there are several brick and reed mats producers in the valley, which are organized in associations and sell their products in the closest cities Paita, Sullana or Piura. An active participation of women cannot be found in the above mentioned organizations, they meet each other in organizations related to food preparation, health and education sector (see chapter 5.1.3). Beside these agricultural and artisanal activities, many locals have casual jobs in the fish industry in Paita, or in the construction respectively agricultural sector. There is a generational divide regarding agricultural activities: The younger generation is not interested in agricultural activities, they prefer dedicating themselves to other activities respectively services (mototaxi services, construction, rural transportation, etc.) or working in artisanal fishing in the area of Paita (Burneo 2013). Some people in the villages are also employed by the municipality, where the percentage of women is relatively high. A large percentage of the population is catholic and there are a large number of religious organizations, which organize processions on important festive days like Easter. The «Castilla Mission» - a group of catholic priests from Spain working in the regional mission of Piura – plays an important role in the support of local smallholders and artisans (construction of hydraulic infrastructure, trucks for transporting goods, training courses for organic banana producers, etc.). The «Castilla Mission» often collaborates with the CIPCA for raising funds for these small development projects. Another important actor in the food system is the campesino community of San Lucas de Colán, whose history is marked by a continuous intrusion of private investments in their territory.

### 5.1.3 Decision Making

Along the Peruvian coast the access to and control over agricultural land is conditional on the participation of land users in the irrigation committees. Participating in the «juntas de usuarios de riego»<sup>15</sup> or the «comités de regantes»<sup>16</sup> not only opens the way to spaces of decision making regarding the use of land, but also decisions regarding the village in general. (Alvarado Merino 2004). In the Río Chira Watershed the Board of Users of the Chira Valley (Junta de Usuarios del Chira) - counting 18'678 agricultural producers – is the most representative and important agricultural organization in the valley. Besides, there are multiple associations of small- and middle-scale farmers, which vary in terms of organizational and working functionality. The most prominent examples, are the ones integrating 33 organic banana producer associations (CEPIBO, REPEBAN, ASOBAN, CENBANOR). Aside there can also be found a group of conventional peasant associations. (Cabrejos Vasquez 2011). Yet, to form part of one of these organizations, it is necessary to be the landowner of a parcel and there is only one representative per plot. Normally, it is the man who represents the family in these committees, because he is the only one appearing on the land title or because the wife comes only on second. (Alvarado Merino 2004). The only exceptions are the cases, where the woman is the owner of the land. However, of the three banana associations that were examined with more detail for this study, an average percentage of only 10.5 percent - of all members - were women.

An active participation of women can be found in organizations like the community kitchens, «glass of milk» committees (where food and milk is prepared for community members considered vulnerable), «cuna más» (a national program aimed at improving child development in areas of poverty), neighborhood committees, health posts as well as kindergartens and schools.

### 5.1.4 Condition of the food system ⇒ ability to guarantee food security<sup>17</sup>

Before the arrival of large-scale biofuel investors the households engaged in subsistence farming – such as e.g. the users of the «tierras eriazas» surrounding the villages – only had to purchase a small amount of products in order to complement those available through their own production. Other households – engaged in brick production or in wage labor – used to buy their foodstuff on local markets. Due to widespread subsistence agriculture, the food security of many households was rather determined by physical availability, than by its economic availability. Yet, almost every household had to purchase a certain amount of food on markets – subsistence farmers just as wage laborers.

---

<sup>15</sup> The «Junta de Usuarios de Riego» were created by the Water Law of 1969, its organization and attributions are specified in the regulation of the law (decreto supremo 495-71-AG of 1971). The councils are in charge of collecting the water tariff. (Oré et al. 2009). The council of the Chira Valley is also responsible of maintaining and developing the hydraulic infrastructure and to take care of the lamination of the canals and the reparation of floodgates.

<sup>16</sup> These commissions are the organizations of the local water users and they manage the secondary canals. Their main tasks include the distribution of water in the secondary canals, the maintenance of these canals and the management of conflicts. The directive of these commissions is in charge of determining the amount of the water tariff in a participative manner on the basis of a discussed budget, which has to be accepted by the general assembly of all users in the «Comisiones de Regantes». (Vos 2006), There are seven «Comisiones de Regantes» in the Río Chira Watershed, whereof two were relevant for my field study in the lower Chira Valley: Left Bank (province of Païta) and Right Bank (province of Sullana).

<sup>17</sup> The results of this sub-section are based on the master thesis of Eliane Debrunner (2016) entitled «Of Sugar Cane, Bricks & Carob Trees: Impacts of a Large-scale Sugar Cane Investment in Northern Peru on Household Food Security».

## 5.2 to situation

### 5.2.1 Organization of the food system

The following changes in food production can be attributed to the presence of the two biofuel investors in the valley:

- **Direct impacts on food production:** The acquisition of land for the production of biofuels resulted in the expulsion of the local population from the «tierras eriazas » (see chapter 4.5.1), which they used for different purposes like cattle grazing, firewood and algarrobo fruit collection and as access to a curitative water fountain. Furthermore, before the advent of the biofuel production in the valley, residents used to cultivate this common land surrounding the villages during rainy season. Land for agricultural use has become scarce, but several interviewees also lament the lack of feedstock to nourish the cattle and the lack of firewood for brick production and cooking, activities which are also related to food production. However, the acquisition of land for the production of biofuels is not the only mechanism through which local residents lost access to land. A substantial number of smallholders, whose land limits with one of the parcels of Caña Brava, are affected by water infiltrations since 2009. A study developed by the local water organization, substantiates that the continuous irrigation of the sugar cane monoculture has led to an increase in the groundwater level, resulting in the infiltration of water in the surrounding terrain. The water has invaded the smallholders' plots, making their land swampy and unsuitable for crop production.
- **Indirect impacts on food production (increasing pressure on water resources):** The increasing pressure on water resources also had an effect on local food production. It can be felt by local food producers in the form of government programs with the objective of replacing water-demanding rice production by other crops. In May 2014 the Peruvian Ministry of Agriculture and Irrigation announced the initiation of the program ProQuinoa that shall promote the installation of 600 hectares of Quinoa along the northern Peruvian coast. The measures focus on the prioritization of crops that could substitute the large extensions of rice production in Piura. According to the minister of agriculture and irrigation, the advantages of Quinoa lie in the fact that it uses three times less water than rice and that it is four times more profitable. (FAO 2014). Water saving measures are also taken at local level. In order to manage the increasing pressure on water resources, certain local water management entities are distributing water in 2-week cycles to local smallholders. This kind of water saving measure is more than welcomed, but complicates the food production of small-scale farmers, as many of the daily eaten food crops like maize, yam or rice depend on very regular irrigation. As small-scale farmers do not have the economic capacity to build water storage facilities to collect water at the outset - as the large-scale biofuel investors do – they are indirectly forced to focus on cash crop production (e.g. sugar cane, limes, mangos, bananas) and to neglect food crop production. Besides, in case of water scarcity in the future, negative impacts could also be felt in form of reduced food yields.

The following changes in food production and food consumption cannot be attributed directly to the presence of the two biofuel investors in the valley, but they have intensified with the arrival of these large-scale investments:

- Enhanced production of cash crops for export (especially organic bananas) due to an increasing number of NGOs, state and private institutions (e.g. Maple) supporting this production sector,

large global demand for organic bananas and the potential of Piura for the expansion of the sector (due to climatic and credit conditions).

- Reduced production of food crops due to missing investments for the development of small-scale agriculture, missing hydraulic infrastructure connecting the smallholder's plots to the irrigation canals, the Niño phenomenons of 1983 and 1998 as well as the expanding sugar cane fields.
- Large supermarket chains like «Plaza Veja» and «Tottus» reach Piura and change the prevailing purchasing and eating habits of the local population.
- New habits in the preparation of food, because an increasing number of people are cooking with gas instead of firewood.

### 5.2.2 Actor constellation & actors' strategies

The presence of the two biofuel investors has had the following impact on the configuration of local actors who are using, maintaining and organizing the local food system:

- **Increasing domination of the private sector in the infrastructure and irrigation domain** of the valley (private irrigation infrastructure leading from the main canals to the sugar cane fields of the investors, new roads built inside the perimeter of the two investments, etc.). Besides, there are persistent rumors indicating that the intended raising of the Poechos dam will have to be realized by a private investor - due to lack of money of the local water organizations – and that the future owner of the hydraulic infrastructure of the valley is likely to be the Romero Group.
- **Transition of locals from being land owners to becoming land tenants** (as in the case of the brick producers, whose land was damaged by water infiltrations and now have to rent a plot of land in another brickworks) **or workers** (as in the case of the agricultural association who was dispossessed because of a farmland enclosure by Caña Brava and has been compensated with job offers).
- **Progressive disappearance of traditional local activities** such as cattle grazing, brick production and reed mat production, due to the enclosure of common land, on which all these activities rely. Cattle grazing already disappeared in some villages of the valley, while brick producers complain the increasing price of firewood - on which they rely for burning their bricks – because it has to be brought from areas further away. Reed mat producers' supply of reed has diminished with the enclosure of land by the biofuel investors.
- **Increasing invasion of the land of the campesino community of San Lucas de Colán by private investors**, due to the sale of land through subnational instances and the recruitment of small-scale farmers of these campesino communities for contract farming agreements with the investors.
- **Increasing social differentiation between small-scale and medium-scale farmers**, due to the contract farming agreements concluded with CB. As many of the small contract farmers did not have enough money to finance the sugar cane seeds, the preparation of their land, the agricultural inputs as well as workforce helping them during harvesting season, they took out a loan from Agrobanco. However, they were unable to pay the installments in a 12-month rhythm, as CB did

not pay them in time. Thus, small-scale farmers incurred debts, while the middle-scale farmers – who did not have to take a credit – are the same or better off than before.

- **Growing indebtedness**, not only among the above mentioned small-scale contract farmers, but also among the workers of CB. Most of the interviewed workers were offered a loan by Caña Brava in the course of their employment. The workers described this credits as easily accessible, as it spares them the paperwork and the rates are directly subtracted from the monthly salary. Yet, some of the workers also incurred debts, due to the loss of their employment at Caña Brava. The latter is not an uncommon situation, given the fact that most employees have fixed-term contracts of 2 or 3 months.

The following (resistance) and negotiation strategies of local actors – with the goal of securing their access to the food system - have been identified:

- After the enclosure of common land through Maple in early 2007, collective resistance activities developed out of a cross-generational concern regarding left-over space for urban expansion. Shortly afterwards the local and regional government as well as the investor entered into a negotiation process with the population. The resistance activities settled down with the initiation of this government-community-enterprise dialogue and disappeared almost completely when the investor agreed to give back 842 hectares to the district authorities of «La Huaca» for safeguarding future urban expansion.
- When Maple arrives in the valley and starts with the enclosure of the Commons, cattle grazing individuals start organizing themselves in associations with the goal of protecting their grazing land. After their successful resistance activities of 2007 and the safeguarding of 842 hectares of land in the valley bottom, they learn that Maple has the obligation to compensate the deforested area with the conservation of natural dry forest ecosystems in the surrounding villages according to a parameter set by the initial main sponsor, the Inter-American Development Bank (IADB). What the cattle grazing association attains some years later is that Maple decides to install part of its reforestation project in the cattle grazers' village. On behalf of Maple, the NGO Cedepas starts collaborating with members of the local cattle grazing association in the installation of a 5-hectare reforestation area, including a tree nursery for endangered tree species. The idea is that, once the 5 hectares of land are afforested, the natural dry forests can be used by locals for the collection of algarrobos respectively firewood and by the cattle grazers for animal husbandry.
- Another good example for the illustration of so-called local negotiation strategies can be found in the case of a local museum curator. As mentioned before, a zone of archaeological importance lies inside of the territory acquired by Maple. Aware of the historical and cultural importance of this archaeological site, the local museum curator decides to start lobbying for the conservation of this ancient cemetery. Making friends with the CSR-staff of the company, he convinces them to visit the location of the archaeological relicts with him. Shortly thereafter, Maple promises to not include the archaeological site in the cultivation perimeter and to support the local museum with a money donation.
- After the enclosure of their land through Caña Brava, the agricultural association of Pucusulá decides to continue their court case against Caña Brava with reference to joint titling (see chapter

3.1.4 Joint titulation of land between men and women) of properties. As only men signed the document of transferring the land to the Sabatini family (who afterwards sold the land to Caña Brava), women are leading the process against dispossession, claiming that they were not consulted by their husbands regarding the land transaction.

- As reaction to the enclosures of Maple and CB, different local agricultural associations begin to title land - with the help of lawyers - with the goal of having land in the future for agricultural production, which is protected from «grabbing» by domestic and international investors.
- In the campesino community of San Lucas de Colán the directorate decided to start distributing «Possession Certificates» among the younger generation of campesino community members, to combat the appropriation of so-called «idle» land through the investor. With this strategy the community aims to protect their dry forest land from sale to large-scale investors (as the regional government did in 2006, when selling 1000 hecatres of the campesino community to Maple). It is disputed whether these titulation initiatives really protect the campesino communities from the invasion through LSLA or if they rather accelerate the development of a land market (de Schutter 2011). The latter could already be observed in the form of land sales by the own members of the community and the changing motivations to acquire land: before for agricultural purposes and today increasingly for commercial reasons.
- Regarding the 1000 hectares of the campesino community of San Lucas de Colán, who were inside of the perimeter sold to Maple by the regional government, the campesino community came to agreement with the investor regarding the 1000 hectares in question. As Burneo (2013) points out, the campesino community first initiated a court procedure to reverse the acquisition of 1000 hectares of land, lying inside of their territory. In the meantime the campesino community decided to accept the offer of Maple, to lease 224 of the 1000 hectares to the enterprise, until the legal dispute has been resolved. Thus, Maple can continue to plant sugar cane in a part of the 1000 hectares under dispute

### 5.2.3 Decision Making

Regarding the main decision making entities mentioned in chapter 5.1.3, we can make the following statements regarding the impact of the biofuel investments:

- Even though the large-scale biofuel investors are inside of the jurisdiction of the Board of Users of the Chira Valley - either because of the location of their land or because the land they gain the sugar cane from, belongs to small- and middle-scale contract farmers of the valley – their participation in these boards is practically nil (Burneo 2011). This means that two of the largest water users of the valley are not involved in pestering water administration and distribution issues as well as the problems of the valley's farmers (whose problems – i.e. water scarcity in the driest months – are partially even caused by the biofuel investors).
- The board of water users of the Chira Valley – the most important agricultural organization of the valley – is caught in a conflict of interest, as inside of this organization the two biofuel investors are regarded as major suppliers of funds. As the board of water users is chronically underfinanced, there are certain dynamics aimed at enriching the board with the LSLAs. In certain irrigation

committees the revenues have increased substantially with the arrival of the biofuel investors, which irrigate large surfaces of land. Thus, the board's hands are tied when it comes to rebuke the investors – especially Caña Brava – in case they are illegally closing the canal and hindering small-scale peasants further downstream to access the canal water. Thus, the missing resistance in the case study area can also be attributed to the lacking resources of the board of water users. This containment of the decision making options of the board, has also an impact on food production and food security of water users at the end of the valley, who suffer from water scarcity in the driest months (October – December) and are unable defend themselves when Caña Brava illegally grabs additional water, due to the intimidation measures of the investor and the missing involvement of the water organizations.

The organization of peasants in associations has increased with the presence of NGOs that provide support in the production of different crops (especially organic banana) under the precondition of collective organization. As the organization of the agricultural producers has become a necessity, an increasing number of small-scale farmers are operating in associations. Between 2006 and 2010 the number of agricultural associations has increased by 24.7 percent in the whole Chira Valley (Cabrejos Vasquez 2011). Yet, the representation of women in these organizations continues to be very low. As mentioned before, the representation of the family in the associations' assemblies is normally handled by men, the only exception are the cases where the woman is the landowner. These women have access to land and accordingly to the associations' decision making processes through the following mechanisms: (a) being widowed, (b) having inherited land or (c) having bought land. The latter is very seldom and applied only to one woman interviewed during fieldwork. Thus, while the lowlands of the Chira Valley are experiencing an unprecedented economic growth due the sugar cane and banana boom, little of this growth benefits women. Even though women actively support their husbands in banana production (elaboration of «daipas», lightweight field work like weeding and cutting leaves after the harvest, bringing the meals to the field), they do not have vote in the banana associations and thus do not have the right to social benefits (supplements like Christmas basket, mother's day donation, productivity division in June, etc.). An important reason why not more women are registered in the associations, are the small parcels owned by smallholders. Most small-scale farmers only have one hectare of land, which makes it impossible to split the plot into two landholdings, because the minimum size for membership in an association is normally one hectare. Yet, machismos is widespread in Piura, and even peasants who have more than two hectares of land are seldom willing to share the property with their wives, even though this would mean receiving the benefits twice.

#### 5.2.4 *Condition of the food system ⇒ ability to guarantee food security*<sup>18</sup>

As mentioned before, the land acquisitions by the two biofuel investors led to the eviction of cattle grazers, who used these dry forest surfaces prior to the arrival of the investors as pastures. Besides, in the case of the domestic investor, their land purchase also resulted in the expulsion of a small farming community. In the cases where the affected cattle-grazers and smallholders not only used their land for subsistence farming, but equally for income-generating activities, the households experienced a strong impact of the LSLAs in terms of food security. The loss of land has not only endangered their food security in terms of physical access, but also in terms of economic access to food. Besides, no adequate compensation has been provided to these households and many have not

---

<sup>18</sup> The results of this sub-section are based on the master thesis of Eliane Debrunner (2016) entitled «Of Sugar Cane, Bricks & Carob Trees: Impacts of a Large-scale Sugar Cane Investment in Northern Peru on Household Food Security».

been able to benefit from the company in form of employment, making them particularly vulnerable concerning food security. Additionally, these households' food stability has been adversely affected by the loss or decrease of carob trees and livestock, both protective assets that helped bridging periods of food insecurity.

In the case of households where a household member – mostly men aged between 22 and 46 – found an employment in the biofuel sector, food security was improved through the provisioning of better income security (employment contract, monthly salary), compared to previous occasional jobs. However, what remains uncertain is the employees' long-term food security, because of the predominantly temporary contracts and insecure employment conditions.

In the case of the contract farmers, where their own food production has been reduced in order to plant sugar cane, the household food security has become more dependent on the ability to secure access to food through economic assets. As planting sugar cane on a contractual basis for the investor has proved to be a highly risky and a rather unprofitable undertaking, it has had adverse effects on some contract farmers' food security. Particularly small-scale farmers were affected, as the failure of the sugar cane cultivation left many of them highly indebted. In the case of the middle-scale farmers, who show higher wealth standards, a decline in income does not immediately impinge on household food security.

## **6. Diachronic comparative analysis of the case at $t_{-1}$ and $t_0$ , including predictions for $t_{+1}$**

### **6.1 Comparison**

The comparison between  $t_{-1}$  and  $t_0$  reveals that impacts of LSLA on the food system go far beyond the enclosure of common land/ farmland and the resulting loss of access to land for locals. Another important mechanism through which locals' access to land is deprived, is the infiltration of water on the plots of peasants and artisans. Besides, the increased pressure on water resources also leaves its marks in local food production, in the form of government programs with the goal of replacing water-demanding rice production by other crops, and local water saving measures. The actor constellation is substantially changed with the presence of LSLAs, as the investments lead to the disappearance of certain traditional activities – with major implications for local traditions and local identity – as well as increasing de-peasantization, social differentiation, indebtedness and debilitation of the campesino communities, while an increasing concentration of land, water and vial/ hydraulic infrastructure in the hands of large-scale investors is facilitated. The reactions of the local population are manifold and raise the question whether resistance is a suited concept to describe the interaction between investor and locals. What can be observed far more often than collective resistance movements, are intensive negotiations regarding the boundaries of the investment, the protection of common land, environmental compensation or the terms of temporary land use. Regarding the main agricultural decision making body in the valley – the board of water users – the conflict of interest between defending the water access for small-scale farmers and increasing the revenues by selling water to large-scale investors, becomes evident.

## 6.2 Prediction

Given the strong support the Peruvian government provides for large-scale investments in the agricultural and biofuel sector, it is very unlikely that the current wave of large-scale land acquisitions along the Peruvian coast is going to fade away. Even though there are initiatives to democratize access to land in the form of upper limits for the size of land property (see chapter 3.2.2) and a legislation underway with the goal of committing investors to environmental compensation (e.g. New Forestry and Wildlife Habitat Law), it remains unclear to what extent these attempts will bear fruit. The non-application of the law on the «Rights of Indigenous and Tribal People to Previous Consultation» in the case study area – even though land of a campesino community was located inside of the territory sold to Maple – reflects the missing recognition of the state of the campesino communities as indigenous. With the lack of any legal basis guaranteeing the right to prior consultation to campesino and other rural communities, it is very likely that future investment will continue generating environmental and territorial disputes.

In the case of Maple, the recent sale of holdings to Grupo Gloria is likely to generate uncertainty among the local population regarding the continuation of existing agreements with Maple. As an example, the return of the 842 hectares to the district authorities of La Huaca, which Maple agreed upon for safeguarding future urban expansion, has not been definitively finalized when Maple declared bankruptcy. Thus, it remains unclear if the new investor – Grupo Gloria – will hold on to these agreements or not. Similar cases are the one of the campesino community, which decided to lease 224 of the 1000 hectares to the enterprise until the legal dispute has been resolved. It is unclear whether Grupo Gloria will enter into these legal discussions with the campesino community or just claim the land as theirs, according to the contract Maple signed with the regional government. Given the exemplariness of Maple's investment, it is likely that the labor conditions, the environmental standard, as well as the CSR projects will deteriorate under the new investor's regime.

## Bibliography

Afonso Undabarrena, Klara (2007): Equidad de género y políticas públicas: balance, lecciones y propuestas a partir de la experiencia de Piura. Piura, INELTA – Radio Cutivalú – CIPCA – CBC.

Agrícola del Chira S.A. y empresas subsidiarias (2009): Caña Brava: Líderes en energías renovables. Reporte anual de sostenibilidad.

Alvarado Merino, Gina Elizabeth (2004): Dan más valen menos: Mujeres, propiedad y control de la tierra en el Bajo Piura rural. Tesis para optar por el grado de Magister en Sociología. Pontificia Universidad Católica del Perú. Escuela de Graduados.

Anseeuw, Ward; Boche, Mathieu; Breu, Thomas; Giger, Markus; Lay, Jann; Messerli, Peter; Nolte, Kerstin (2012): Transnational Land Deals for Agriculture in the Global South. Analytical Report based on the Land Matrix Database. CDE/CIRAD/GIGA. Bern/Montpellier/Hamburg.

Benites, Jaime (2012): Cultivos de Arroz serían reemplazados por Caña. Diario el Correo (Piura). 10 de Junio 2012.

Boyle, Eva (1997): Buscando nuevos caminos. La realidad de hombres y mujeres de la costa norte de Piura. Piura. Diaconía de la Justicia y la Paz. 170p.

Burneo, Zulema (2011): The process of land concentration in Peru. International Land Coalition (ILC).

Burneo, María Luisa (2013): Elementos para volver a pensar lo Comunal: Nuevas Formas de Acceso a Tierra y Presión sobre el Recurso en las Comunidades Campesinas de Colán y Catacaos. *Anthropologica del Departamento de Ciencias Sociales (PUCP)*, Año XXXI, No. 31, diciembre de 2013.

Cabrejos Vásquez, Carlos (2011): Actualización del Mapa Regional del Sector Agrario en Piura. Piura: CIPCA, 2011, 54 p.

CEPES (2008): El agro peruano y los decretos legislativos de 2008. *Informativo Legal Agrario, Second Season*, N° 24, December. Lima.

CEPES (2012): *Boletín: Tierra y Derechos*, Año 2 (5): 2.

CEPES (2013a): *Boletín: Tierra y Derechos*, Año 3 (6): 2.

CEPES (2013b): *Derechos de las Comunidades Campesinas. Principales Leyes y Reglamentos*. Cepes, Lima.

CEPES (2015): *Boletín: Tierra y Derechos*, Año 5 (11): 2

Campos Torres, Sara (2014): *Regímenes Laborales Especiales 2014*. Lima, Soluciones Laborales.

Consortio E&H. (2010). Plan de calidad ambiental Peru-Ecuador: Catamayo-Chira y Puyango-Tumbes. Lima: Ministerio del Ambiente, Peru.

Debrunner, Eliane (2016): Of Sugar Cane, Bricks and Carob Trees: Impacts of a Large-Scale Sugar Cane Investment in Northern Peru on Household Food Security. Master Thesis in Geography, directed by Stephan Rist, Switzerland, Faculty of Natural Sciences/ University of Bern.

Deere, Carmen D.; Leon, Magdalena (2003): The Gender Asset Gap: Land in Latin America. In: World Development 31 (6), S. 925–947.

Deere, Carmen D. (2005): The Feminization of Agriculture? Economic Restructuring in Rural Latin America. UNRISD (Occasional Paper 1).

De Schutter, Olivier (2011): How Not To Think of Land-Grabbing: Three Critiques of Large-Scale Investments in Farmland. In: The Journal of Peasant Studies 38 (2), S. 249–279.

Deininger, Klaus; Selod, Harris; Burns, Anthony (2012). The Land Governance Assessment Framework. The World Bank. Retrieved from <https://openknowledge.worldbank.org/bitstream/handle/10986/2376/657430PUB0EPI1065724B09780821387580.pdf?sequence=1>

Deutsch Lynch, Barbara (2013): Water Access, Food Sovereignty and Peru's Water Regime. Food Sovereignty: A Critical Dialogue. International Conference Yale University September 14-15, 2013. Conference Paper Nr. 30.

Diez, Alejandro (2006): Las organizaciones colectivas, los recursos y los pueblos indígenas en el Perú. In: Eguren, Fernando (editor). Reforma agraria y desarrollo rural en la región andina. Cepes, Lima, pp. 111-130.

Durand, Francisco (2013): Los Romero. Fe, Fama y Fortuna. Ediciones EL VIRREY. Lima: desco.

Eguren, Fernando. (2004). “Las políticas agrarias en la última década: una evaluación” [The Agrarian Policies of the Last Decade: An Evaluation]. In Fernando Eguren, Patricia Oliart, and María Isabel Remy (editors). Perú: el problema agrario en debate [Peru: The Debate on the Agrarian Problem]. Sepia X. Lima: Permanent Seminar on Agrarian Research (SEPIA). pp. 19-78.

Eguren (2015): El Agro en Tiempo de Humala. <http://de.scribd.com/doc/255208412/El-Agro-en-Tiempos-de-Humala-Fernando-Eguren>. Consulted: 10.02.2015

Ericksen, Polly J. (2008): Conceptualizing Food Systems for Global Environmental Change Research. In: Global Environmental Change 18, S. 234–245.

FAO (2014): Masifican producción y consumo de quinua para garantizar seguridad alimentaria. <http://www.fao.org/peru/noticias/detail-events/en/c/238715/> Consultado : 27.01.2015

FAO (2012a): Análisis de Costos de Producción de Biocombustibles en Perú: una dimensión social. <http://www.fao.org/docrep/013/i1712s/i1712s06.pdf>. Visited : 22.10.2013.

FAO (2012b): Dinámicas del Mercado de la Tierra en América Latina y el Caribe: Concentración y Extranjerización. Hg. v. F. Soto Baquero und S. Gómez. Rome & Santiago.

FAO (2012c): Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries, and Forests in the Context of National Food Security. FAO, Rome

FAO (2011): Inclusión de pequeños agricultores en la cadena productiva de caña para etanol y certificación ISCC. El caso de Caña Brava, Perú. Lima, Septiembre 2011.

FAO (2010): Bioenergy and Food Security: The BEFS Analysis for Peru. Supporting the Policy Machinery in Peru.

FAO Gender and Land Rights Database (2015): Customary Law. [http://www.fao.org/gender-landrights-database/country-profiles/countries-list/customary-law/en/?country\\_iso3=PER](http://www.fao.org/gender-landrights-database/country-profiles/countries-list/customary-law/en/?country_iso3=PER) Consulted: 26.08.2015

Franco, Jennifer (2014): Reclaiming Free Prior and Informed Consent (FPIC) in the Context of Global Land Grabs. [http://www.tni.org/sites/www.tni.org/files/download/reclaiming\\_fpic\\_0.pdf](http://www.tni.org/sites/www.tni.org/files/download/reclaiming_fpic_0.pdf) Consulted: 23.06.2015.

Francke, Marfil (1990): La participación de la mujer en proyectos de desarrollo rural. En: Detrás de la puerta: Hombres y mujeres en el Perú de hoy. Lima. PUCP. DEG 1996 310p.

Gamboa, César ; Snoeck, Sébastien (2012): Análisis crítico de la consulta previa en el Perú. Informes sobre el proceso de reglamentación de la Ley de Consulta y del Reglamento. Lima, Grupo de Trabajo sobre Pueblos Indígenas de la Coordinadora nacional de Derechos Humanos.

Gamero Requena, Julio H. (2011): Impacto de la Ley de Promoción Agraria 27360. A los 10 años de su implementación. Lima, Asociación Aurora Vidar.

Gerber, Jean-David; Rist, Stephan; Schnegg, Brigitte; Knoepfel, Peter (2013): The effects of large-scale land acquisitions (LSLA) on households in rural communities of the Global South: gender relations, decision making and food security. Research plan submitted to the Swiss Network of International Studies (SNIS) on 14.05.2013.

GFLAC (2014): Presupuestos públicos para el cambio climático en Perú. Análisis de los presupuestos para el cambio climático en los sectores de energías renovables, eficiencia energética y bosques. [http://gflac.org/pdf/PERU\\_SPDA.pdf](http://gflac.org/pdf/PERU_SPDA.pdf) Consulted: 25.08.2015

IIAP & SNV (2008): Línea de base sobre biocombustibles en la Amazonía peruana. IIAP, Iquitos.

INEI (2013): Resultados Definitivos. IV Censo Nacional Agropecuario 2012.

INEI (2015): Estado de la Población Peruana 2015.

[http://www.inei.gob.pe/media/MenuRecursivo/publicaciones\\_digitales/Est/Lib1251/Libro.pdf](http://www.inei.gob.pe/media/MenuRecursivo/publicaciones_digitales/Est/Lib1251/Libro.pdf)

Consulted: 07.09.2015

Jacoby, Hanan G. (1992): Productivity of Men and Women and the Sexual Division of Labor in Peasant Agriculture of the Peruvian Sierra. In: Journal of Development Economics 37, S. 265–287.

Kay, Cristobal (1982): Achievements and Contradictions of the Peruvian Agrarian Reform. In: Journal of Development Studies 18 (2), S. 141–170.

La Revista Agraria (2014a): Consulta previa: una beneficiosa obligación, pero difícil de llevar adelante.

[http://www.larevistaagraria.org/sites/default/files//revista/LRA158/Consulta%20previa%20una%20beneficiosa%20obligacion%20pero%20difícil%20de%20llevar%20adelante.pdf](http://www.larevistaagraria.org/sites/default/files//revista/LRA158/Consulta%20previa%20una%20beneficiosa%20obligacion%20pero%20dif%C3%ADcil%20de%20llevar%20adelante.pdf) Consulted: 22.06.2015

La Revista Agraria (2014b): Identidades indígenas en tiempo de consulta previa. Mesa redonda publicada en la edición No. 163 de LRA. <https://cepesrural.lamula.pe/2014/07/02/identidades-indigenasen-tiempos-de-consulta/cepesrural> Consulted: 22.06.2015

McCarthy, J.F. 2010. Processes of inclusion and adverse incorporation: Oil palm and agrarian change in Sumatra, Indonesia. Journal of Peasant Studies 37, no. 4: 821–50.

Ministerio de Agricultura (2009): Propuesta. Plan Nacional de Agroenergía 2009-2020.

[http://agroaldia.minag.gob.pe/biblioteca/download/pdf/informacion-especializada/2012/propuesta\\_agroenergia.pdf](http://agroaldia.minag.gob.pe/biblioteca/download/pdf/informacion-especializada/2012/propuesta_agroenergia.pdf) Consulted: 15.09.2015

Monge S., Carlos (2013): Continuidad y cambios en las varias políticas agrarias del presidente Ollanta Humala. In Eduardo Toche M. (editor). Perú Hoy: Susurros desde Babel. Lima, DESCO Centro de Estudios y Promoción del Desarrollo.

Oft, Philine (2010): Micro-Finance Instruments Can Contribute to Build Resilience. A Case Study of Coping and Adaptation Strategies to Climate-Related Shocks in Piura, Peru. Graduate Research Series PhD Dissertation, Vol. 2. United Nations University UNU-EHS. Institute for Environment and Human Security.

Pearce, Fred (2012): Land Grabbing. Der Globale Kampf um Grund und Boden. München, Verlag Antje Kunstmann GmbH.

Programa EELA (2012): Diagnóstico Nacional del Sector Ladrillero Artesanal. Noviembre 2012.

[http://www.redladrilleras.net/documentos\\_galeria/DIAGNOSITICO%20NACIONAL%20FINAL%2019Dic12.pdf](http://www.redladrilleras.net/documentos_galeria/DIAGNOSITICO%20NACIONAL%20FINAL%2019Dic12.pdf) Consulted: 17.06.2015.

Reaño, Germán; Vásquez, Enrique (1988): El grupo romero: del algodón a la banca. Lima, Centro de Investigación de la Universidad del Pacífico, CIPCA.

Remy, María Isabel (2014a): Pequeña Agricultura y Gran Propiedad Agraria: Un campo polarizado 30 años después de la Reforma Agraria. Presentation at the workshop «Gran Propiedad de la Tierra en el Perú actual: Tendencias, Desafíos y Temas Emergentes», July 3 2014 in Lima, Peru.

Remy, María Isabel (2014b): Población Indígena y Construcción de la Democracia en el Perú. In: Ricardo Cuenca (Hg.): Etnicidades en Construcción. Identidad y Acción Social en Contextos de Desigualdad. Lima: IEP (Estudios sobre Desigualdad), S. 13–46.

Revesz, Bruno ; Oviden, Julio (2011) : Piura, Transformación del territorio regional. Ecuador Debate, 84, 151-176. Access in august 2014.

<http://flacsoandes.edu.ec/dspace/bitstream/10469/3597/1/RFLACSO-ED84-10-Revesz.pdf> Consulted: 04.08.2015

Rubin de Celis (1982): Emma y otros. Rol económico de la mujer campesina. Piura. Cipca. 210p.

Ruiz Bravo, Patricia (1996): Género y desarrollo: Diversidad y cambio en las identidades de género en el medio rural peruano. Mns. – “un balance de los estudios de género en el Perú”. P. 5-26. En Detrás de la puerta. Hombres y mujeres en el Perú de hoy. Lima PUCP. DEG. 310p.

Roundtable for Sustainable Biofuels (2013): Certification Evaluation Report. Roundtable on Sustainable Biomaterials. Maple Etanol S.R.L. (ME) and Maple Biocombustibles S.R.L. (MB). [http://rsb.org/pdfs/reports/RSB\\_RPT\\_MapleAuditReportSummary\\_022114.pdf](http://rsb.org/pdfs/reports/RSB_RPT_MapleAuditReportSummary_022114.pdf) (consulted 29.06.2015)

Observatorio de los Derechos sobre la Tierra en el Perú (2014): La Desventura de la Titulación Rural. Boletín Nr. 9. Marzo 2014. <http://americalatina.landcoalition.org/sites/default/files/Boletin%209.pdf>

Oré, Maria Teresa Oré; del Castillo, Laureano; Van Orsel, Saskia; Vos, Jeroen (2009): El Agua, ante nuevos desafíos. Actores e Iniciativas en Ecuador, Perú y Bolivia. Lima, IEP; Oxfam International (2009).

Urteaga Crovetto, Patricia (2013): Entre la abundancia y la escasez de agua: discursos, poder y biocombustibles en Piura, Perú. Debates en Sociología No. 38, 2013, pp. 55-80.

Van Kempen, Mariël; Klarenbeek, Mildred (1997): Queremos trabajar: El papel de la mujer en las actividades productivas en el Valle del Chira. Tesis (Lic.) Universidad de Utrecht.

Vogel, Marion (2007): La Utilidad de Aproximaciones Globales para la Solución de la «Crisis del Agua»: El Ejemplo del Perú. Barcelona, CIBOD edicions.

Von Oertzen, Eleonore; Goedecking, Ulrich (2004): Peru. München, Verlag C.H. Beck oHG.

Vos, Jeroen (2006): Pirámides de Agua. Construcción e Impacto de Imperios de Riego en la Costa Norte de Perú. Lima, IEP, WALIR, 2006. (Agua y Sociedad, Sección Walir, 4)

Wiig, Henrik (2013): Joint Titling in Rural Peru: Impact on Women's Participation in Household Decision-Making. In: World Development 52, S. 104–119.